

Rngcug'uecp'\j ku'S T'Eqf g'\q'xkgy '\j g'Ftch\'Rtqur gewu+"

VJ KU' KU' C'' RWDNKE'' CPPQWPEGO GPV'' HQT'' KPHQTO CVKQP'' RWTRQUGU'QPN[0'VJ KU'KU'PQV''RTQURGEVWU'CPPQWPEGO GPV'' CPF"FQGU'PQV"EQPUVIVWG"CP"IPXIVCVIQP"QT"QHHGT"VQ" CES WATG.'RWTEJ CUG'QT'UWDUETKOG'HQT'UGEWTKVKGUIPQV'HQT'' TGNGCUG." RWDNÆCVKQP" QT" FKUVTKOWVKQP" FKTGEVN[" QT" RPFKTGEVN['QWVUNFG'RPFKC0"



CUUQEKCVGF'EQCVGTUNKO KVGF''

Eqtr qtcvg" If gpvkhecvkqp" P wo dgt <"W4: 34; Y D4239 RNE 446223"

Our Company was originally incorporated as 'ASSOCIATED COATERS PRIVATE LIMITED' a private limited company under the Companies Act, 2013 with the Registrar of Companies ("ROC"), Kolkata pursuant to Certificate of Incorporation dated December 44. "42390" Vj g'pame of the company was changed from 'ASSOCIATED COATERS PRIVATE LIMITED' to 'ASSOCIATED COATERS LIMITED' y g"uj ctgj qrf gtu"qh"qwt"Eqo r cp{ "kp"yj g"Gz vtc/qtf kpct {"I gpgtcri"O ggvkpi "j grf "qp"Qevqdgt"46."4245."cpf "c"htguj "egt vkhkecvg"qh"kpeqtr qtc vkqp" eqpugs wgpv"vq"ej cpi g"qh"pco g"y cu"kuwygf "d{"TQE."Mqmrcvc"qp"F gego dgt"3; ."42450"Vj g"eqtr qtcvg"kf gpvkhecvkqp"pwo dgt"qh"qwt"eqo r cp{"ku" W4: 34; Y D4239RNE4462230"

Tgi kwgt gf 'Qltleg<'Cuj wk'Mj cpdgtkc''O cj guj vcnc''NR'42 l: 5168. "Mymevc."Xkxgmcpcpf cr wt. "Uqwj "46'Rcti cpcu. "Vj cmwtr wmwt''O cj guvqnc. "Y guv' Dgpi cn'Kof kc.'922363'

Vgrgrj qpg<'; 3"; : 526"59923="Go ckr</kphqB cuuqekcvgf eqcvgtu0bp="Y gduksg<'y y y 0cuuqekcvgf eqcvgtu0bp=" Eqpvcev'Rgt uqp<'J ggpcn'J kguj 'Tcvj qf. 'Eqorcp{ "Ugetgvct{ "cpf 'Eqornceg'Qhhlegt=" Eqtrqtcvg'K gpvkHecvlqp'P wo dgt<W4: 34; Y D4239RNE446223"

QWT'RTQO QVGTUXO t0'Lci lky'Upi j "F j kmp"cpf "O tu0P cxpggy'Mcwt"

FGVCKNU'QH'VJ G'KUWG''

RWDNKE" KUUWG" QH" WRVQ" 6.38.622, "EQUITY SHARES OF FACE VALUE OF ₹ 32022" EACH ("GS WKV["UJ CTGU") OF ASSOCIATED COATERS LIMITED (THE "COMPANY" OR THE "ISSUER") FOR CASH AT A PRICE OF ₹ [●] "RGT"GS WK/[SHARE INCLUDING A SHARE PREMIUM OF ₹ [•]"PER EQUITY SHARE (THE "KUWG'RTKEG") AGGREGATING TO ₹ [•] NCMJ U'("VJ G'KUUNG") OF WHICH 43.822, 'EQUITY SHARES OF FACE VALUE OF ₹ 32022'GCEJ 'HQT'ECUJ 'CV'C'RTKEG'QH' ₹ [•] PER EQUITY SHARE INCLUDING A SHARE PREMIUM OF ₹ [•] PER EQUITY SHARE AGGREGATING TO ₹ [•] LAKHS WILL BE RESERVED FOR SUBSCRIPTION BY MARKET MAKER TO THE ISSUE (THE "O CTMGV'O CMGT'TGUGTXCVIQP' RQTVKQP"). THE ISSUE LESS THE MARKET MAKER RESERVATION PORTION I.E. NET ISSUE OF 5.; 6.: 22, 'GS WKV| 'UJ CTGU' OF FACE VALUE OF ₹10.00 EACH AT A PRICE OF ₹ [•] "PER EQUITY SHARE INCLUDING A SHARE PREMIUM OF ₹ [•] RGT" GS WKV["UJ CTG"CI I TGI CVKPI "VQ"₹ [•] LAKHS (THE "PGV"KUUWG"). THE GROSS ISSUE AND THE NET ISSUE WILL EQPUVK/WVG"520,5" "CPF"4; 054" "TGURGEVKXGN["QH"VJ G"RQUV"KUUWG"RCKF"WR"GS WKV["UJ CTG"ECRK/CN"QH"QWT" EOORCP[0'

, Cuuwo kpi 'HwnlUwduet kr skap

CFF GPF WO 'VQ'VJ G'FT CHV'RT QURGE VWUF CVGF 'F GE GO DGT '52.'4245' (THE "DRAFT PROSPECTUS"):

NOTICE TO INVESTORS (THE "ADDENDUM") <"Vj kı"kı"y kıj "tghgtgpeg" vq"vj g"F tchr'Rtqur gewu'f cvgf "F gego dgt '52.'4245. "lhvgf "d{" yj g"Eqo r cp{"y kj "UO G'Rre whqt o 'qht'DUG'LIMITED ("BSE SME")0Rqvgpvkcrl'Kpxguvqtu"o c{"pqvg"yj cv."qwt"Eqo r cp{"j cu"vpf gtvcngp"vq" incorporate the additions / modifications (reproduced in 'italics') provided below and the relevant information and details rghgeygf "lop" j g" Ftch/Rtqurgewu'uj cm'uvcpf 'wrfcvgf'ceeqtfkpin(<'

- 30 The Following Changes or Updation has been incorporated under the chapter "Summary of Issue Document" of the Draft Rt qur gevwu
 - c+ Under the head "Details of The Issue" on Page no. 21, Market Maker Reservation portion and Net issue portions have been wrf cvgf 0
 - d+ Under the head "Pre-"Kung" Uj ct gj qrf kpi "qh'Qwt "Rt qo qvgt u"cpf "Rt qo qvgt "I t qwr "cu "C"Rgt egpvci g"qh'Vj g"Rckf/Wr "Uj ct g"Ecr kcn
 - Of The Company" on Page no. 22, Shareholding pattern along with name and percentage of individual has been updated.

 Under the head "Summary of Related Party Transactions" on Page no. 23, detailed disclosure of Related Party Transaction has dggp"wrf cvgf 0
- 40 The Following Changes or Updation has been incorporated under the chapter "Risk Factors" of the Draft Prospectus
 - c+ Under the head "Business Related Risk" on Page no. 25, Risk factor no. 4, "7."8."9.": ."; ."32."34."35."47."4: "cpf "69"j cxg"dggp
- The Following Changes or Updation has been incorporated under the chapter "The Issue" of the Draft Prospectus c+ "Summary of the Issue" on Page no.43 has been updated.
- 60 The Following Changes or Updation has been incorporated under the chapter "Capital Strcuture" of the Draft Prospectus c+ Fgvcku''qh'\j g''Gs wk\f''Uj ctg'Ecrkcn''qh'\j g''Eqorcpf''qp''Rci g'pq078''j cu''dggp''wrf cvgf 0
- The Following Changes or Updation has been incorporated under the chapter "Object of The Issue" of the Draft Prospectus
 - "Uej gf wrg"qh'Ko r rgo gpwcklqp""qp"Rci g"pq0'92."wrf cvgf "uej gf wrg"qh'Ko r rgo gpwcklqp"qh'ec r kwn'gzr gpf kwt g"ku c + Wpf gt''yj g''j gcf'
 - d+ Under the head "Details of Object of the Issue" on Page no. 69, details regarding upgradation of existing plant & Ocej lpgt [j cu'dggp'wrf cygf 0
 - e+ Under the head "Justification for Holding Period Levels" on Page no. 71, Justification for working capital requirement for eaej j gcf 'j cu'dggp'wrf cvgf 0
- 80 The Following Changes or Updation has been incorporated under the chapter "Our Business" of the Draft Prospectus
 - c+ Under the head "Plant & Machinery" on Page no. 98/; ; . "Rkewt gu'qh'y g'Ocpwlrewt kpi "Irektk\f" j cxg"dggp"wrf cvgf 0
 - d+ Wpf gt '\(j \) g'head "Our Properties" on Page no. 105, area of properties has been updated.
 - Under the head "Stagewise bifurcation of Sales" on Page no. 106, percentage of state wise revenue have been updated.

- $f \not A$ Under the head "Product wise revenue" on Page no. 106, Breakup of product wise revenue has been updated."
- $g \not$ Under the head "Overview of Our Business" on Page no. 93, Details of top 5 Suppliers & Customers have been updated."
- 90' The Following Changes or Updation has been incorporated under the chapter "Our Management" of the Draft Prospectus "
 - c+A Under the head "Our Board of Directors" on Page no. 117, Reason for appointment of Independent Director as Additional Kof grapf gpv/Fkt gevqt''s cu'dggp'wrf cvgf 0"
 - d'Á Under the head "Brief Profile of Directors" on Page no. 119, Details of Qualification of Directors have been updated."
 - e+Á Under the head "Changes in Key Managerial Personnel and Senior Management in the Last Three Years" on Page no. 130, F gvcku'qh'Tguki pcvkqp"qh'Kpf gr gpf gpv'F kt gevqt u'j cxg"dggp"wrf cvgf 0"
- :0' The Following Changes or Updation has been incorporated under the chapter "Our Promoters and Promoter Group" of the Draft Rt qur gewu'''
 - c ★ Under the head "Details of Promoters" on Page no. 131, Directorship of Mrs. Navneet Kaur has been updated. "
- ; 0' The Following Changes or Updation has been incorporated under the chapter "Financial Statements as Restated" of the Draft Rt qur gewui''
 - c-Á Under the head "Statement of Notes to Restated Financial Statement" on Page no. F/32/33. "wpf gt "vj g"twdj gcf "D+"Ui pkkecpv" Ceeqwpvkpi "Rqrkekgu"Rqkpv"pq&0. "30. "30. "j cxg"dggp"wrf cvgf 0""
- 320 The Following Changes or Updation has been incorporated under the chapter "Management's Discussion and Analysis of Financial Condition and Result of Operations" of the Draft Prospectus "
 - c+Á Under the head "Comparison of FY 2022/45" y kj "H["4243/22" on Page no. 146, explanation of revenue from operation has dggp wf cvgf 0"
 - d+\(\hat{A}\) Under the head "Comparison of FY 2022/45"y kj "H["4243/22" on Page no. 146, details of rates of Products have been updated."

 e+\(\hat{A}\) Under the head "Comparison of FY 2021/44"s kj "H["4242/21" on Page no. 147, explanation of revenue from operation has
 - e+Á Under the head "Comparison of FY 2021/44"y kj "H["4242/21" on Page no. 147, explanation of revenue from operation has dggp"wrf cvgf 0"
- 330 The Following Changes or Updation has been incorporated under the chapter "Other Regulatory & Statutory Disclosures" of the Ftch'Rt qur gewu'''
 - $c \not A$ "Details of Networth and Cash Accrual" on Page no. 165 has been updated. "
- 340 The Following Changes or Updation has been incorporated under the chapter "Issue Structure" of the Draft Prospectus " $c + \acute{A}$ "Details of issue Structure" on Page no. 183 has been updated. "

Rrceg<Mqmcw.'Y gw/Dgpi cn''Kpf kc'' Fcvgf<44'Octej '4246'' Hqt "cpf "qp"dgj crh"qh**Cuuqekcvgf 'Eqcvgt u'Nko kyf**

Uf I/"

"J ggpcdJ kyuj 'Tcyj qf'

Eqorcp{'Ugetgwt{'('Eqornlepeg'Qhhlegt')

DQQM'TWPPRPI 'NGCF'O CPCI GTU'VQ'VJ G'KUUWG''



I TGVGZ'EQTRQTCVG'UGTXÆGU'NKO KVGF"

C/623."Hqqt"6^{ij}."Rqv"HR/838."*RV+."P co cp"O kf vqy p."Ugpcr cvk" Der cv"O cti ."P gct"Kpf kcdwm."F cf ct"*Y guv+."O wo dck"—"6222350"

VgrlP q0<!; 3"; 8754"6; : 85"

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Y gdulsg</br>
y y 0 tgwzeqtr qtcw(eqo "

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UGDKT gi lint cvlqp'P q</RP O 222234399"

EKP<N96; ; ; O J 422: RNE4: : 34: "

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DH UJ CTG'UGTXÆGURTKXCVG'NKO KVGF'''

U8/4.'8^{sj} 'Rkppcerg'Dwukpguu'Rctm'O cj cnærk'Ecxgu'Tqcf .'pgzv'\q" Cj wc'Egpvtg.''Cpf j gtk'Gcuv.'O wo dck''6222; 5.'O cj ctcuj vtc.''Kpf kc''

TGI KUVTCT'VQ'VJ G'KUWG'

VgriP q0<'-; 3"-"44"-"8485": 422="" Hcz'P q0<'-; 3"-"44"-"8485": 4;; "" G/o cln<'lr qB dki uj ctgqprlpg@qo "

Kpxguvqt'I tlgxcpeg'G/o cln

Y gdukg

y y y @lki uj ctgqprkpg@qo "

Eqpveev'Rgt uqp<'O t0'Xkpc{cm'O qtdcrg"

UGDKT gi kwt cvkqp'P q0

"RT 2222235: 7"

EKP<'W;;;;;O J 3;;6RVE298756"

" "

VCDNG'QH'EQPVGPVU'

UWO O CT['QH'KUWG'F QEWO GPV"	7"
TKM'HCEVQTU'	8"
VJ G'KUWG"	32"
""UGE VIQP 'XK'E CRKVCN'UVT WE VWT G"	33"
QDLGEV'QH'VJ G'KUWG"	34"
QWT'DWURP GUU'	36"
QWT'O CPCI GO GPV"	42"
QWT'RTQO QVGTUCPF'RTQO QVGT'I TQWR"	45"
HIP CPEICN'UVCVGO GP VUCU'TGUVCVGF"	46"
MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULT OF	
QRGT CVKQP U'	47"
QVJ GT'TGI WNCVQT['CPF'UVCVWVQT['FKUENQUWTGU'	48"
KUWG'UVTWEVWTG"	49"
FGENCT CVIQP "	4; "

UWO O CT['QH'KUWG'F QEWO GPV''

FGVCKNU'QH'VJ G'KUWG''

Gs wlw{ 'Uj ct gu'Qltgt gf '13+"	Kuwg'qh'wr vq'6.38.622'Equity Shares of ₹'32022'gcej 'hqt"
Rtgugpv'Kuuwg''qh''Gs wkv{ ''Uj ctgu''d{ ''qwt''Eqorcp{ ''*4+''	cash at a price of ₹ [•]"rgt"Gswkx{"Ujctg"*kpenwfkpi"
	premium of ₹ [•] 'per Equity Share) aggregating to ₹ [•]"
	Nenj 0'
Qwv'qlt'y j kej <'	
O ct ngv'O cngt 'T gugt xc vlqp'Rqt vlqp'''	Wr y '43.822" Equity Shares of ₹ 10.00 each fully paid/
"	up of our Company for cash at a price of ₹ [•] "r gt 'Gs wkx{"
	Share (including premium of ₹ [•]"r gt"Gs wkx{"Uj ctg+"
	aggregating to ₹[•]'Ncnj 0'
Pgv'Kung'tq'tj g'Rwdrle"	Wr vq'5.; 6.: 22'Equity Shares of ₹ 10.00 each for cash at
"	a price of ₹ [•] 'r gt 'Gs wkv{ "Uj ctg' *kpenwf kpi 'r tgo kwo "qh"
	₹ [•] "per Equity Share) aggregating to ₹ [•] 'Ncnj 0"'
Qwv'qhly j kej <'	
Allocation to Retail Individual Investors for upto ₹2.00	Wr vq'3.; 9.622 Equity Shares of ₹10.00 each for cash at
Nenj "	a price of ₹ [•] 'r gt 'Gs wkv{ "Uj ctg' *kpenwf kpi 'r tgo kwo "qh"
	₹ [•] "per Equity Share) aggregating to ₹" [•] "Ncnj 0"
Cmqec vkqp''vq'Pqp/Institutional Investors for above ₹2.00	Wr vq'3.; 9.622 Equity Shares of ₹10.00 each for cash at
Nenj ''	a price of ₹ [•] 'r gt 'Gs wkw{ "Uj ctg'*kpenwf kpi 'r tgo kwo "qh"
	₹ [•]"per Equity Share) aggregating to ₹"[•]"Ncnj 0"

RTG'-'KUUWG'UJ CTGJ QNFKPI 'QH'QWT'RTQO QVGTU'CPF'RTQO QVGT'I TQWR'CU'C'RGTEGPVCI G'QH' VJ G'RCKF/WR'UJ CTG'ECRKVCN'QH'VJ G'EQO RCP[''

UtO'	Earl of (IMD4 or contil		Rt g''-'Kamg''		
Pq0'	Ecvgi qt{'qhlRtqo qvgt''	Pq0qh'Uj ctgu'	Cu'c'' 'qhirchf/wr'Gs who ('Ecrloch'		
C+''	Rt qo qvgt "				
3"	Ici lk/Upi j "F j kmp"	8.3; .: 36"	88087"		
4"	P cxpggv'Mcwt"	5.32.222"	55055"		
***	Vqwrl*C+''	;.4;.:36"	;;0;:"		
D +''	Rt qo qvgt'I tqwr''				
3"	Leuy kpf gt "Ukpi j "	53"	2"		
4"	Uctedlk/Mewt"	53"	2"		
5"	Reny kpf gt "Mewt"	53"	2"		
6"	Retco lk/Upi j "	53"	2"		
7"	J cty kpf gt"Mwo ct"	53"	2"		
8"	Dj wrkpf gt "Ukpi j "	53"	2"		
111	Vqvcri*D+''	3:8"	2@4''		
111	Rt qo qvgt 'cpf 'Rt qo qvgt 'I tqwr '*C- D+''	; .52.222"	322"		

UWO O CT['QHTGNCVGF'RCTV['VTCPUCEVIQPU'

 $Dkhwteckqp"qh"TRV"tcpucekqpu"ctg"cu"hqmqy~u <\!\!\!\!<"$

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Rct dewret u''	Pevwtg'կի'Tgrevkqpuj kr''	5202; 04245"	5302504245"	5302504244"	53@5@4243"		
k•Qwwcpf kpi 'Dcrcpeg'∂	k⊮Qwwwcpf kpi 'Dcrcpeg'qhlUj qtv'tgto 'cpf 'hqpi /vgto 'dqttqy kpi u'ltqo 'Fktgevqtu'cpf 'qvj gt'tgrcvgf 'r ctvkgu'						
Ici lk/Ukpi j 'Fj kmqp''	Fktgevqt"	; 0, "	; 0, "	3203"	204"		
kaFkt gevqt u'Tgo wpgt cv	kqp''						
Ici lk/Ukpi j 'Fj kmqp''	Fktgevqt"	406"	32"	7"	/"		
Pcxpggv'Mcwt"	Fktgevqt"	304"	8"	7"	/"		
lllk:Hcevqt { 'Tgpv'Rclf 'Tl	Rc{ cdrg''						
Cuuqekcygf "Hodtkecyqtu"	Uki pkhlecpy'Kohnwgpeg''	406"	508"	307"	/"		
kx+Ncdqwt 'Ej cti gu'Rckf	'TRc{cdıg''						
Cuuqekcygf "Hodtkecyqtu"	Uki pkhlecpy'Kohnwgpeg''	/"	33%; "	9076"	/"		
x+O ckpvgpcpeg'Ej cti gu	r'Relf 'TRe{edrg''						
Cuuqekcygf "Hodtkecyqtu"	Uki pkhlecpy'Kohnwgpeg''	608: "	/"	/"	/"		
xkiRwtej cug''							
Cuuqekcygf "Hodtkecyqtu"	Uki pkhlecpeg"Kphnvgpeg"	7508; "	: 5044"	4; 06; "	'"'		
*Rtqrqtvkqp"qh'vqvcn"		59' "	68' "	74' "	'"'		
rwtej cug+"kp" "							

 $F wg''q''kpcf xgtvgpeg."directors''tgo wpgtcvkqp''hqt''Hkpcpekcn'[gct''4243/44''y cu''o gpvkqpgf''cu''<math>\$ ''Ncmj u''qp''Rci g''45''qh''F tchv'' Rtqur gewu''y kj "tgur gev''q''T grcvgf "Rctv{ "Vtcpucevkqp''y j gtgcu''vqvcn''tgo wpgtcvkqp''vq''f ktgevqtu''f gdkgf "'vq''Rtqhkv''cpf "Nquu''C le'' ku'\\$''32022''Ncmj u''cpf''\\$''; (53''Ncmj u''tgo ckpgf''wpr ckf''cu''qp''O ctej ''53."42440''

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Dgrqy 'ku'\j g'\cdrg'eqp\clpkpi 'ucrgu'o cf g'\q'\j g'\Vqr '7'Ewu\qo gtu'qh'qwt 'Eqo r cp{<

	Vqr/7'Ewnqo gt''					
Rct dewct u''	Octej '53.'4244'' Oc		Octej '	53.'4245''		dgt '52.'' 45''
	Co qwpv'*Tu'' kp'h:nj +''	' 'qh'Vqven' Uengu''	Co qwpv'*Tu''	' 'qh'Vqveri' Uergu''	Co qwpv'*Tu'' kp'tcnj +''	
Vqr '3"	63066"	4; 095' "	7; 072"	3807: ' "	324068"	650 : ' "
Vqr '4"	48054"	3:0:' "	; 3065"	47069' "	57029"	37028' "
Vqr "5"	48@9"	3; 042' "	82064"	380 5' "	49@5"	330, 2' "
Vqr '6"	; 0 8"	902: ' "	490 4"	9097' "	33%: "	60,5' "
Vqr '7"	/"	/"	/"	/"	8046"	408: ' "
Ucrgu'tq'Vqr'7'Ewwqo gtu'''	33: 092"	:7086' ''	48707: ''	950; ' ''	3:40:"	9:076' ''

70 Vj g'j qıf kpi 'rgt kqf 'qht'qwt 'Vt cf g'T gegkxcdıgu'cpf 'Vt cf g'r c{cdıgu'ku'j ki j 0'''

Qwt"eqo r cp{"ku"kp"y g"dwukpguu"qh"o cpwbcewtkpi "cpf "uwr r n{kpi "hcdtkecyf"r ctwu"cpf "r tguu"r ctwu"kng"Vgrgeqo o wpkecwtqp" r ctwu."f kgugri'gpi kpg"r ctwu."f kgugri'gpi kpg"t kpg"t kpi "r ctwu."f kgugri'gpi kpg"t kpg"t

 $\label{thm:linear} Who knot ''. 'y g'' c o gpwu'' o cf g'' q'' xgpf qtu'' ctg'' qp'' who knot ''. 'y gto u'' cpf ''ctg'' www.cm{ ''o cf g'' chygt ''t gegk v' qh'' wcngu'' r tqeggf uOJ gpeg.'' qwt '' wtcf g'' r c o gpwu' o g'' y g'' y g'' tgegk wcdng'' f c o gpwu' o g'' y g'$

 $Vj \; g'f \; gvcku''qh''qwt ''vtcf \; g't \; gegkxcdrgu''cpf \; ''vtcf \; g'r \; c \; \{ \; cdrgu''hqt''yj \; g''rcuv''5''hlpcpekcn'' \{ \; gct \; ''ctg''cu''hqmqy \; u < '' \; (\; cdrgu''hqt''yj \; g'''cuv''5'' hlpcpekcn'' \{ \; gct \; ''ctg''cu''hqmqy \; u < '' \; (\; cdrgu''hqt''yj \; g'''cuv''5'' hlpcpekcn'' \{ \; gct \; ''ctg''cu''hqmqy \; u < '' \; (\; cdrgu''hqt''yj \; g'''cuv''5'' hlpcpekcn'' \{ \; gct \; ''ctg''cu''hqmqy \; u < '' \; (\; cdrgu''hqt''yj \; g'''cuv''5'' hlpcpekcn'' \{ \; gct \; ''ctg''cu''hqmqy \; u < '' \; (\; cdrgu''hqt''yj \; g'''cuv''5'' hlpcpekcn'' \{ \; gct \; ''ctg''cu''hqmqy \; u < '' \; (\; cdrgu''hqt''yj \; g'''cuv''5'' hlpcpekcn'' \{ \; gct \; ''ctg''cu''hqmqy \; u < '' \; (\; cdrgu''hqt''yj \; g'''cuv''5'' hlpcpekcn'' \{ \; gct \; ''ctg''cu''hqmqy \; u < '' \; (\; cdrgu''hqt''yj \; g'''cuv'' hqmqy \; u < '' \; (\; cdrgu''hqt''yj \; g'''cuv'''hqmqy \; u < '' \; (\; cdrgu''hqt''yj \; g'''cuv''' hqmqy \; u < '' \; (\; cdrgu''hqt''yj \; g'''cuv''' hqmqy \; u < '' \; (\; cdrgu''hqt''yj \; g'''cuv''' hqmqy \; u < '' \; (\; cdrgu''hqt''yj \; g'''cuv''' hqmqy \; u < '' \; (\; cdrgu''hqt''yj \; g''''hqt''yj \; g'''' hqmqy \; u < '' \; (\; cdrgu''hqt''yj \; g'''' hqt'' hqmqy \; u < '' \; (\; cdrgu''hqt''yj \; g'''' hqt'' hqt$

Rct vlewet u'	O ctej '53.'4245''	O ctej '53.'4244''	Octej '53.'4243''
Vtcf g'Tgegkxcdrgu"	375"	578"	2"
Vtcf g'Rc{cdrgu"	429"	848"	2"

80' Y g'j cxg'gpvgtgf 'kpvq't grcvgf 't ct v{ 'it c puc evkqpu'kp 'ij g't cuv'c pf 'o c { 'eqpvkpwg'iq 'f q'lq 'kp 'ij g'hwwt gOY g'j c f 'c pf 'j c xg'' related party transaction with "Associated Fabricators" for more than or equal to 20% of total Purchases and such vt c puc evkqp 'o c { 'eqpvkpwg'kp 'ij g'hwwt gO''

Qwt"Eqo r cp{"j cu"gpvgtgf "kpvq"xctkqwu"vcpucevkqpu"y kj "qwt"Rtqo qvgtu0'Y j krg"y g"dgrkgxg"vj cv"cm"uwej "vtcpucevkqpu"ctg" conducted on arm's length basis, there can be no assurance that we could not have achieved more favorable terms had such vcpucevkqpu"y gtg"pqv'gpvgtgf 'kpvq"y kj 'tgrcvgf 'r ctvkgu0Hwtyj gto qtg. 'kv'ku'ikngn("vj cv'y g'y kni'gpvgt 'kpvq"tgrcvgf 'r ctv('vtcpucevkqpu" kp"lwwtg0'Vj gtg"ecp"dg"pq"cuuwtcpeg"vj cv'uwej "vtcpucevkqpu."kpf kxkf wcm("qt"kp"ci i tgi cvg."y kni'pqv'j cxg"cp"cf xgtug"ghtgev'qp" qwt'hpcpekcn'condition and results of operation. For details on the transactions entered by us, please refer to chapter "*Tgncvgf" Rctv("Vtcpucevkqpu") beginning on page [•] of the Draft Prospectus."

Vj gug"\tcpuce\dppu'\penwf g."co qpi "qvj gt"\j \pi u."r wtej cug"\qhltcy "o cvgt\cm\0Y j \krg"\cm\uwej "\tcpuce\dqpu"\j cxg"\dggp"\eqpf wevgf "on an arm's length basis, in accordance with the Companies Act, 2013 and other applicable regulations pertaining to the gxcnwc\dqp"\cpf "crrtqxcn'qh'uwej "\tcpuce\dqpu"\cpf "cm'tgrevgf" rctv\{ "\tcpuce\dqpu"\j cv'y g"o c\{ "gpvgt"\pvq"rquv\r\kr\kpi\ i". y \kr\dg" uwd\gev'\q\"Dqctf "qt"\Uj ctgj qnf gt"crrtqxcn"cu'pgeguuct \{ "wpf gt"\j g"Eqorcp\gu"\Cev"\j g"\UGDK\kr\kpi\ i"Tgi wc\dqpu"\cpf "q\j gt" crr\kec\dqp"\cvy u\0H\kr\j gt."\k/\ku''\kn\gn\{ "\j cv'y g"o c\{ "gpvgt"\pvq"cf f kkqpcn'tgrevgf "rctv\{ "\tcpuce\dqpu"\pvj g''\kw\tg\0U\wej "\kw\tg\0U\wej "\kw\tg\0U\wej"\kw\tg\0U\wej "\kw\tg\0U\wej "\kw\tg\0U\

 $\label{thm:continuous} Vj g''cdng''dgnqy ''r tqxkf gu''f gvcknu''qh''cduqnwg''uwo ''qh''cm'tgncygf ''r ctv{ ''vtcpucevkqpu''cpf ''yj g''r gtegpvci g''qh''uwej ''tgncygf ''r ctv{ ''vtcpucevkqpu''q''qwt''tgxgpwg''htqo ''qr gtcvkqpu''kp''j g''{ gctu''kpf kecygf <''} \\$

Rct vlewrct u''	Pevvt g'\hlTgrcvkqpuj kr''	5202; 04245''	53@504245"	53@504244"	53@504243"
k Qww.cpf kpi 'Dcrcpeg'∂	qh'Ujqtv'tgto'cpf'hqpi/vgto'dqttqyl	piu'ltqo'Fltge	vqt u'cpf 'qvj g	t'tgncvgf'rctv	lgu''
Lci lk/Ukpi j 'F j kmpp"	Fktgevqt"	; 0, "	; 0, "	3203"	204"
kkFktgevqtu'Tgowpgtcvkqp''					
Ici lk/Upi j 'Fj kmp"	Fktgevqt"	406"	32"	7"	/"

P cxpggv'Mcwt"	Fkgevqt"	304"	8"	7"	/"
llk-Hcevqt { 'Tgpv'Rclf 'Tl	Rc{ cdrg''				
Cuuqekcygf 'Hodtkecyqtu''	Uki pkhecpy'Kphrwgpeg''	406"	508"	307"	/"
kx+Ncdqwt 'Ej cti gu'Rclf	''I'Rc{cdrg''				
Cuuqekcygf 'Hodtkecyqtu''	Uki pkhecpy'Kphrwgpeg''	/"	3306; "	9076"	/"
x+O clpvgpcpeg'Ej cti gu	r'Relf 'TRe{edrg''				
Cuuqekcygf 'Hodtkecyqtu''	Uki pkhecpy'Kphrwgpeg''	608: "	/"	/"	/"
xk⊪Rwtej cug''					
Cuuqekcvgf "Hodtkecvqtu"	Uki pkhlecpeg "Kohnwgpeg"	7508; "	: 5044"	4; 06; "	1111
*Rtqrqtvkqp"qh"vqvcn"		59' "	68' "	74' "	1111
rwtej cug+"kp" "					

90' Y g'j cxg'trrnlgf 'lqt'Tgi kutcvlqp'tpf 'I tcpv'qt'Tgpgy cnlqhlilegpug'tpf 'þqvleg'qhlqeewrcvlqp'urgellilgf 'lp'Ugevlqp'8'' ('9'qhlij g'Hcevqtlgu'Cev.'3; 6: 'dwv'ij g'uco g'j cu'þqv'dggp'i tcpvgf 'lq'wu'tu'þp'f cvg0''

 $Y g''j cxg''crrrkgf''hqt''Tgi kntcvkqp''cpf''I tcpv'qt''Tgpgy cn'qh''hegpug''cpf''pqvkeg''qh''qeewrcvkqp''ur gekhkgf''kp''Ugevkqp''8'('9''qh''y g'' Heevqtkgu''Cev''3; 6: 'hqt''qwt''Wpkv''Kdgctkpi ''crrrkecvkqp''pwo dgt'ECH424598875; 'fcvgf''F gego dgt''45.''4245''dw''yi g''uco g''j cu'' pqv''dggp''i tcpvgf''vq''wu''cu''qp''fcvg0''Vj g''Crrrkecvkqp''hqt''tgi kntcvkqp''hqt''Wpkv''KK(''KKK'ku''{gv'vq''dg''o cfg''d{''yi g''Eqorcp{0'Y} g'' ecppqv''cuuntg''{qw''yi cv''cp{''crrrkecvkqp''hqt''Tgi kntcvkqp''qh''cpf''I tcpv'qt''Tgpgy cn'qh''nkegpug''cpf ''pqvkeg''qh''qeewrcvkqp''kp''hwwtg'' d{''qw''Eqorcp{''yi kn''dg''i tcpvgf''d{''yi g''tgrgxcpv''cwj qtkkgu''kp''c''ko gn{''o cppgt''qt''cv''cm''Qwt''ghl'qtw''qrtcvkqpu''ecqtkgu'' o c{''pqv''dg''cfg swcwg''cpf''o c{''ngcf''vq''gtqukqp''qh''qwt''dwlkpguu''gzeguu''qwhrqy ''qh''qwt''hpcpegu''cpf''qwt''qrgtcvkqpu''eqwf''dg'' cfxgtugn{''chhgevgf 0'Cp{''nkki cvkqp''eqwf''dg''ko g''eqpuwo kpi ''cpf''equvn{''cpf''yj g''qweqo g''ecppqv''dg''i wctcpvggf 0'Y g''o c{''pqv'' dg''cdrg''yq''cng''crrtqrtkcvg''cpf''\ko gn{''uvgru''kp' ku''tgi ctf0'}$

:0 Qwt'dwulpguu'ku'ecrkochlpvgpukxg0Mty' g'gzrgtkgpeg'kpuwllkekgpv'ecuj 'lnqy u'vq'b ggv't gs wkt gf 'rc{o gpwt'qp'qwt'fgdv'' cpf'y qtmlpi 'ecrkocht gs wkt go gpwt'ij gt g'b c{'dg'cp'cf xgt ug'gligev'qp'qwt'qrgt cwlqpu0'

Qwt"dwukpguu"tgs wktgu"c"uki pkhkecpv'co qwpv'qh'y qtmkpi "ecr kcn'y j kej "ku'dcugf "qp"egtvckp"cuuwo r vkqpu."cpf "vj gtghqtg."cp{" ej cpi g"qh'uwej "cuuwo r vkqpu"y qwf "tguwnv'kp"ej cpi gu"vq"qwt"y qtmkpi "ecr kcn'tgs wktgo gpvu0'Kp"o cp{"eqpvtcevu."uki pkhkecpv' co qwpwi'qh'y qtmkpi "ecr kcn'ctg'tgs wktgf "vq'hkpcpeg"vj g'r wtej cug"qt"o cpwhcewtkpi "qh'o cystkcnu."o qdktk| cvkqp"qh'tguqwtegu'cpf "qvj gt"y qtm'qp"rtqlgevu'dghqtg'rc{o gpv'ku'tgegkxgf "htqo "enkgpvu0'Qwt"y qtmkpi "ecr kcn'tgs wktgo gpvu"o c{"kpetgcug"f wg"vq"cp" kpetgcug"f wg"y g'uk| g"qh'qwt"qr gtcvkqpu'cpf "vj g'pwo dgt"cpf "uk| g"qh'rtqlgevu"vj cv'ctg'tgs wktgf "vq'dg"gzgewgf "y kuj kp"c"uko krct" vko ghtco g0'

Qwt"ecr kcn"gzr gpf kwtg"tgs wtgo gpw"cpf "i tqy yj "utcygi {"yj wu"tgs wtg"eqpvkpwgf "ceeguu"vq"uki pkhecpv"co qwpw"qh"ecr kcn"qp" ceegr wdrg"vgto u0"Y g"ecppqv"cuuwtg"{qw"yj cv"o ctmgv"eqpf kkqpu"cpf "qvj gt"hcevqtu"y km"r gto kv"hwwtg"r tqlgev"cpf "ces wkukkqp" hkpcpekpi u."f gdv"qt "gs wkx{."qp"vgto u"ceegr wdrg"vq"wu0"Qwt"cdkrkx{"vq"cttcpi g"hkpcpekpi "cpf "yj g"equwu"qh"uwej "hkpcpekpi "ctg" f gr gpf gpv"qp"pwo gtqwu"hcevqtu."kpenwf kpi "i gpgtcn"geqpqo ke"cpf "ecr kxcn"o ctmgv"eqpf kkqpu."etgf kv"cxckrcdkrkx{"htqo "hkpcpekrn" kpukkwkqpu."yj g"co qwpv"cpf "vgto u"qh"qwt "gzkurkpi "kpf gdvgf pguu."kpxgurqt "eqphkf gpeg."yj g"eqpvkpwgf "tweeguu"qh"ewttgpv"r tqlgew" cpf "rcy u"yj cv"ctg"eqpf wekxg"vq"qwt "tckukpi "ecr kxcn"kp"yj ku"o cppgt0"

;0' Vj gtg'ctg'egtwlp'f kuetgrcpelgu'Tgttqtu'pqvlegf'lp'tuqo g'qh'qwt'eqtrqtcvg'tgeqtfu'tgwvlpi 'bq'lqto u'hlugf'y kj 'bj g''
Tgi kutct'qh'Eqo rcplgu'cpf'qvj gt'ttqxkulqpu'qh'Eqo rcplgu'Cev.'42350Cp{'rgpcnf'qt'cevlqp'bcngp'df'cpf'tgi wwwqt{''
cwvj qtkvlgu'lp'lwvwtg'lqt'pqp/eqo rnlcpeg'y kj 'rtqxkulqpu'qh'eqtrqtcvg'cpf'qvj gt'vcy 'eqwnf'lo rcev'vj g'hlpcpelcn'
rqulvlqp'qh'bj g'Eqo rcpf'bq'bj cv'gzvgpv0'

 $Vj\ gtg"ctg"hgy\ "f\ kuetgr\ cpelgu"pq\ degf\ "kp"uqo\ g"qh"qwt"eqtr\ qtcvg"tgeqtf\ u"tgrcvkpi\ "vq"g/hqto\ u"hkrgf\ "y\ ksj\ "vj\ g"Tgi\ kuvtct"qh" Eqo\ r\ cplgu."y\ j\ ksj\ "vj\ g"TQE'kp"r\ cuv"{gctu0}"$

 $\label{thm:constraint} Vj \ g'hqmqy \ kpi \ 'f \ kuet gr \ cpekgu'j \ cxg'dggp'o \ gpvkqpgf \ 'kp''y \ g'hqto \ u'hkngf \ 'd \{ ''y \ g'Eqo \ r \ cp \{ 'y \ ky \ ''y \ g'Tgi \ kuvtct \ 'qh'Eqo \ r \ cpkgu''vpf \ gt'' \ y \ g'r \ tqxkukqpu''qh'Eqo \ r \ cpkgu''Cev. \ '4235<''$

Hqto "CFV/1 filed on 17.04.2019 with respect to appointment of M/s. 'Suvankar Haldar and Associates' as 'Statutory Auditors' of the Company for a period commencing from 22.12.2017 to 31.03.2022 does not contain the extract of the tguqnwkqp'r cuugf 'd{ 'ȳ g 'ū ctgi qrf gtu'qh'ȳ g'Eqo r cp{0J qy gxgt. 'ȳ g 'gz vtcev'qh'ȳ g'Dqctf 'tguqnwkqp'r cuugf 'd{ 'ȳ g'Dqctf 'ku' f wn{ 'cvcej gf 'lp'ȳ g'uckf 'hqto 0'}

Vj g"cwcej o gpv"lp"hqto "O I V"36"hkrgf "qp"2908404245"hqt"cr r qlpvo gpv"qh"rgcf "o cpci gt "hqt" y g"lfpkkcrl"Rwdrle "Qhhgt "qh" y g" Company wrongly states the name of "GYR Capital Advisors Private Limited" as lead manager instead of "Gretex Corporate Services Limited". J qy gxgt. "y g"uco g"j cu'dggp"tgevkhlgf "d{ 'hkrlpi "chtguj "O I V'36"y kj "y g"eqttgev'cwcej o gpv'qp"3: 084042450"

Qwt"eqo r cp{"j cu"o knugf "vq"eqo r n{"y kj "egtvckp"uvcwwqt{"rtqxkukqpu"kp"yj g"r cuv"kpenwf kpi "dw'pqv'rho ksgf "vq"yj g"f gwknu"cu" o gpvkqpgf "kp"yj ku"tkumlhcevqt0Vj gtg"ctg'hgy "f kuetgr cpekgu'pqvkegf "kp"uqo g"qh"qwt"eqtr qtcvg"tgeqtf u"tgrcvkpi "vq"cf j gtkpi "y kj " y g"rtqxkukqpu"qh"UU/3"cpf "UU/4"qh"yj g"Eqo r cpkgu"Cev."4235"y j kej "kpvgt"crkc"kpenwf gu"pqp/uvco r gf "cpf "wpuki pgf "f qewo gpw" cwcej gf "kp"yj g"hqto u. "vko g"qh"eqpenwkqp"qh"yj g"o ggvkpi "pqv"kpenwf gf "kp"yj g"egtvkhkgf "vtwg"eqr { "qh"tguqnwkqp."f cvg"qh"yj g"Dqctf" O ggvkpi "o gpvkqpgf "kp"yj g"tguqnwkqp"y cu"kpeqttgev0"

 $Qvj \ gt"gttqtu"lp"vj \ g"lqto \ u"uwej "cu"y \ tqpi \ "f \ cvg"qh"o \ ggvlpi ."tgs \ wkukg"cwcej o \ gpw"y \ gtg"pqv'cwcej \ gf ."rcvg"lhtlpi "qh'lqto \ u."gve0" \ J \ qy \ gxgt."cu"vj \ gtg"y \ cu"pq"gttqt"qp"vj \ g"O EC"o \ cuvgt "f \ cw"j \ gpeg"pq"o \ clqt "cevlqp"y \ gtg"vcmpp"lqt"vj \ g"uco \ g0'Uqo \ g"lqto \ u"y \ gtg" \ lhtlpf "chvgt"vj \ g"f \ wg"f \ cvg"qh"vj \ g"tgur \ gevkxg"lqto \ u0'Uwr \ r \ qtvlpi \ "f \ qewo \ gpw"cwcej \ gf "lp"uqo \ g"qh"vj \ g"Hqto \ u"ctg"pqv'uki \ pgf "cpf" \ uvco \ r \ gf "ld{"vj \ g"tgs \ wkukg"cwvj \ qtkx{0'Vj \ qwi \ j "vj \ g"Eqo \ r \ cp{{"ku"gpuwtlpi "vq"eqo \ r \ n{"vy \ kyj "cm"vj \ g"uj \ qtveqo \ kpi \ u"j \ qy \ gxgt"cp{{"r \ r \ gpcnx{vmp}"dt"cevlqp"vcmpp"d{"cpf "qvj \ gt"ky" \ eqwf "lo \ r \ cev'lhpcpekcn"r \ qukxlqp"qh"vj \ g"eqo \ r \ cp{{"vq"y} \ cv"gzvgpv0""}$

Cnj qwi j "pq"pq\legu"j cxg"dggp"kuwgf "wr qp"qwt "Eqo r cp{"{gv'dww'j gtg"o c{"dg"kpuvcpegu"y j gtg"d{"pq\legu"o c{"dg"kuwgf "\q" qwt "eqo r cp{"cpf "hkpgu"qt "r gpcn\legu"o c{"cnq"dg"lo r qugf "wr qp"qwt "Eqo r cp{."y j lej "o c{"cf x gtugn{"chhgev'qwt "cf o lpkuvtc\lqp"

.

htqo "eqo r ncpeg"r gtur gevkxg0"Vj gtg"ecp"dg"pq"cunwtcpeg"y cv"pq"r gpcn"cevkqp"y kn"dg"vcngp"ci ckpuv"wu"d{"yi g"tgi wcvqt{" cwj qtkkgu"y kj "tgur gev"vq"yi g"pqp/eqo r ncpegu0"Ki"cp{"cf xgtug"cevkqpu"ctg"vcngp"ci ckpuv"wu."qwt "hpcpekcn"tguwmu"eqwf "dg" chigevgf 0"Cf ditionally, we have strengthened our internal compliance system by introducing the 'Maker Checker' System cpf "j cxg"wpf gtvcngp"urg u"vq"wr f cvg"yi g"kpvgtpcn"f cwdcug"y kj "ncyguv'ektewctu"cpf "co gpf o gpwl"vq"gpuwtg"hwwtg"eqo r ncpeg0" Kp"yi g"gxgpv"yi g"Eqo r cp{"hcku"vq"uwdo kv"yi g"tgs wkukg"f kuenquwtgu"vq"yi g"tgi wcvqtu"kp"yi g"hwwtg."yi gp"yi g"Eqo r cp{"o c{"dg" r gpcnkugf "d{"yi g"tgi wcvqtu"cpf"yi g"lwcvgtu"cpf"yi g"lwcvgtu"cpf"yi g"lwcvgtu"cpf"yi g"lwcvgtu"cpf"yi g"lco g"o c{"chigev'qwt"tguwmu"qh"qr gtcvkqpu0""

320' Vj g'pcwtg'qh'qwt'dwulpguu'gzrqugu'wu'\q'ncdhlo{''encho u'cpf''eqpxtcev'f kurwgu'cpf''qwt'llpfgo plolgu'o c{''pqv'' cfgswcvgnf'ttqvgev'wuOCp{'thcdhlo{'hp'gzeguu'qh'lqwt'tgugtxgu'qt'lpfgo plolgu'eqwnf'tguwnv'hp'cff lolqpcnlequuu'y j kej'' y qwnf'tgfweg'qwt'rtqHouO'

Vko g"ku"qhsgp"qh"vj g"guugpeg"lp"qwt "dwukpguu"y qtm0lfp"vj g"gxgpv"vj gtg"ctg"f grc{u"lp"qwt "ewttgpv"qt "hwwtg"ugtxkeg."y g"y kmi'pqv" dg"cdrg"vq"i gv"gzvgpukqpu"htqo "qwt "ewuvqo gtu0Hwtvj gt."kp"uqo g"eqpvtcevu."kp"ecug"qh"f grc{"f wg"vq"f ghkekgpe{"kp"ugtxkegu"d{"wu." enlgpvu"o c{"j cxg"vj g"tki j v"vq"eqo r rgvg"vj g"y qtmi'cv"qwt "tkumi'cpf "equv"d{"gpi ci kpi "c"vj ktf "r ctv{0lfp"vj g"gxgpv"y g"hckni'vq"r gthqto " wpf gt"vj g"vgto u"qh"c"r ctvkewrct "eqpvtcev."vj cv"eqwrf "cf xgtugn{"chhgev'qwt "hkpcpekcn"eqpf kklqpu"cpf "dwukpguu"qr gtcvkqpu0Hcknwtg" vq"ghhgevkxgn{"eqxgt"qwtugrxgu"ci ckpuv"cp{"qh"vj gug"tgcuqpu"eqwrf "gzr qug"wu"vq"uwduvcpvkcniequvu"cpf "r qvgpvkcm{"igef "vq"o cvgt kcni' rquugu0"fp"cf f kklqp. "kh"vj gtg"ku"c"ewuvqo gt "f kur wwg"tgi ctf kpi "qwt"r gthqto cpeg"qt"y qtmo cpuj kr ."vj g"ewuvqo gt"o c{"f grc{"qt" y kj j qrf" r c{o gpv"vq"wu0"

330' Qwt'dwulpguu'ku'b cprqy gt'lpvgpulxg'cpf'qwt'dlwulpguu'qrgtcvlqpu'b c{'dg'b cvgt lcnq'cf xgtugq'chhgevgf'dl{'lat kngu'' y qtmllaqrrci gu'qt'lpetgcugf'y ci g'f go cpf u'd{'qwt'go rnq{ggu'qt'ij qug'qh'qwt'lawrrhgtu0'

Y g"ctg"kp"ugtxkegu"kpf wmt {"cpf "qwt"dwukpguu"kn"f gr gpf gpv'qp"j wo cp"tguqwteg"hqt"ectt {kpi "qww"ku"qr gtcvkqpu0"Uj qtwi g"qh" unkngf "T'wpunkngf "r gtuqppgniqt"y qtminqr r ci gu"ecwugf "d{"f kuci tggo gpw"y kyj "go r nq {ggu"eqwf "j cxg"cp"cf xgtug"ghhgev'qp"qwt" dwukpguu"cpf "tguwnu"qh"qr gtcvkqpu0"Vj qwi j "y g"j cxg"pqv"gzr gtkgpegf "cp{"o clqt"f kutwr vkqpu"kp"qwt"dwukpguu"qr gtcvkqpu"f wg"vq" f kur wgu"qt "qvj gt"r tqdngo u"y kyj "qwt"y qtminqteg"kp"vj g"r cuv=j qy gxgt."vj gtg"ecp"dg"pq"cuuwtcpeg"vj cv'y g"y kni'pqv"gzr gtkgpeg" uwej "f kutwr vkqpu"hp"vj g"hwwtg0"Uwej "f kutwr vkqpu"o c{"cf xgtugn("chhgev"qwt"dwukpguu"cpf "tguwnu"qh"qr gtcvkqpu"cpf "o c{"cnq" divert the management's attention and result in increased costs."

 $Y \ g"ctg"cnq"uwdlgev"q"rcy u"cpf "tgi wrwkqpu"i qxgtpkpi "tgrckqpuj kr u"y kj "go r m{ggu."kp"uwej "ctgcu"cu"o kpko wo "y ci g"cpf" o czko wo "y qtmkpi "j qwtu."qxgtvko g. "y qtmkpi "eqpf kkqpu."j ktkpi "cpf "ygto kpcvkpi "qh"go r m{ggu"cpf "y qtm"rgto ku0"Cnj qwi j "qwt "go r m{ggu"ctg"pqvewttgpvn{"wpkqpk gf. "vj gtg"ecp"dg"pq"cuuwcpeg"j cv"j g{ "y kmpqvwpkqpk g"kp"j g"hwwtg0Kiqwt"go r m{ggu" wpkqpk g. "kv"o c{"dgeqo g"f khhewn"hqt"wu"q"o ckpvckp. "hgzkdrg" r qrkekgu. "cpf "y g"o c{ "hceg" y g" y tgcv"qh"rcdqwt "wptguv."y qtm" uvqr pages and diversion of our management's attention due to union intervention, which may have a material adverse impact qp"qwt "dwukpguu."tguwnu"qh"qr gtcvkqpu"cpf "hkpcpekcn"eqpf kkqp0"$

; OQwt'lelantg'\q'Fgtlqto 'lp'eeqtf epeg'y kij '\j g'lwepf etf u'Ftguetldgf 'lp'y qtml\tf gt'\qli\qwt'edgpv'eqwf 'tguwn'lp'lquu'' qli'dwdpgur'\qt'Fe{o gpv'\qli'lls wlf evgf 'f eo ei gu'\epf 'ep{ 'f gue{ 'lp'\j g'lwej gf wg'\qli'l\qwt'\wpf gt/eqpunt wevlqp'Ftqlgewi'o e{'' dg'lwdlgev'\q'equv'\qxgtt wpu'\epf '\ep'\lo reev'\qwt'\tgrwevlqp'\epf 'lwwntg'Ftqlgewi''

Cu"qp"yi g"f cvg"qh"yi ku"Ftchv"Rtqur gewu: "y g"j cxg"Qpi qlpi "Rtqlgewt"yi cv"ctg"wpf gt "eqpurtwevlqp"cpf "f gxgqr o gpv0'Vj g" f gxgqr o gpv1'qh"uwej "r tqlgewt"lu"uwdlgev'vq"uwdurcpvlcri'tkumu."Ipenvf lpi "xctlqwu"r rcpplpi "cpf "eqpurtwevlqp"tkumu0'Hwtyi gt"y g" hqmy "c"f gvckrgf "uej gf wrg."tgi wrctn("o qpkqtlpi "r tqi tguu: "wr f cvlpi "r tqlgev'uvcwu: "cpf "lf gpvkh{ lpi "ej cpi gu."vq"gpuwtg"yi gv"yi g" rtqlgev'uvc {u'qp"tcent0'H6'cp{ "f kur wgu"ctkug"qxgt "rcpf "tki j vu."gpxktqpo gpvcn"lo r cev'cuuguuo gpvu"cpf "o kki cvlqp"o gcuwtgu."kv" ecp"rgcf "vq"rtqlgev'f grc{u'cpf "cf f gf "equvu0'Cp{ "f grc{u'lp"yi g"eqo r rgvlqp"qh"qwt"rtqlgevu"o c{ "cf xgtugn("chlrgev"qwt"cdkkk{ "vq" i gpgtcvg"gzr gevgf "tgwtpu"cu"eqpvtcevu"cy ctf gf "d{"i qxgtpo gpvcn"cwj qtkklgu"qt"gpvkklgu"lwpf gf "d{"i qxgtpo gpv"lpenvf gu"r gpcn" ercwug"y j lej "lpenvf g"o qpgvct{"hcdkkk{0}"

340' Qwt 'Eqo rcp{'j cu'c' 'pgi cvkxg'ecuj 'hnqy 'kp'kwtKpxgwkpi 'cevkxkskgu'qh'yi g'Eqo rcp{'kp'rgt kqf 'gpf gf' 'qp' Ugrvgo dgt '52.'' 4245''cpf ''vj g' Hkpcpekcn'{gct'gpf gf ''qp' O ctej ''53.''4245''cpf ''O ctej ''53.''4244''cpf ''Hkpcpekpi ''Cevkxkskgu' kp' yj g'' Hkpcpekcn{gct'gpf gf' qp' O ctej '53.''42440Uwwckpgf 'pgi cvkxg'ecuj 'hnqy 'eqwnf 'ko rcev'qwt' i tqy yj 'cpf 'dwukpguu''

Qwt'Eqorcp{'j cf'pgi cvkxg'ecuj 'hnqy u'hrqo 'qwt'qrgtcvkpi 'cevkxkklgu'cu'y gm'cu'kpxguvkpi 'cevkxkklgu'kp'yj g'rtgxkqwu''{gct*u+'cu'' rgt'yj g'Tguvcygf'Hkpcpekcn'Uvcygo gpvu'cpf'yj g'uco g'ctg'uwo o ctki gf'cu'wpfgt<'

(₹ in lakh)''

Rct viewet u'	Hqt 'vj g'r gt kqf 'Gpf gf 'qp''	Hqt 'Vj g'Hlpcpelcrl[gct 'Gpf gf 'Qp''		gf 'Qp''
	Ugr vgo dgt '52.''	O ctej '53.''	O ctej '53.''	Octej "
	4245''	4245''	4244''	53.'4243''
P gv'Ecuj "wugf "kp"Qr gtcvkpi "Cevkxkkgu"	42096"	840 3"	73078"	202"
Pgv'Ecuj 'wugf 'kp'Kpxguvkpi 'Cevkxkkgu'	*68067+"	*5055+"	*770,9+"	202"
Pgv'Ecuj 'htqo 'Hkpcpekpi 'Cevkxkkkgu''	460,9"	*2096+"	; 0 ; "	202"

 $Ecuj "hqy "qh'c"eqo r cp{ 'ku'c"ng{ 'kpf kecvqt "vq"uj qy "vj g"gzvgpv'qh'ecuj "I gpgtcvgf 'htqo "qr gtcvkqpu'vq"o ggv'ecr kcn'gzr gpf kwtg." r c{ "f kxkf gpf u."tgr c{ "nqcpu."cpf "o cng"pgy "kpxguvo gpw'y kj qwv'tcknkpi "hkpcpeg"htqo "gzvgtpcn'tguqwtegu0'Ki'y g"ctg"pqv'cdng" vq"i gpgtcvg"uwhhkelgpv'ecuj "hnqy u'kp'hwwtg. "kv'o c{ "cf xgtugn{ "chhgev'qwt "dwukpguu'cpf "hkpcpekcn'qr gtcvkqpu0" } " | "chgev'qwt "dwuk$

350 340Qwt'eqo rcp{'twtej cugu'tcy 'b cygthcnu'ltqo 'ttqrthgyqtuj hr'lhto 'qh'qwt'rtqo qygt0''

 $Qwt"eqo\ r\ cp\{"r\ wtej\ cugu"tcy\ "o\ cygtkenı"htqo\ "c"uwr\ r\ hgt"y\ j\ kej\ "ku"qy\ pgf\ "d\{"qwt"r\ tqo\ qygt0'C"r\ tqr\ tkyqtuj\ kr\ "htto\ "qh"qwt"r\ tqo\ qygt"pco\ gf\ "Cuuqekcygf\ "Hcdtkecytu"ku"gpi\ ci\ gf\ "kp"yj\ g"uko\ kwt"rlpg"qh'dwulpguu"rlng"qwtu"cpf\ "o\ quv'qwt"tcy\ "o\ cygtken'r\ r\ wtej\ cugu"ku'htqo\ "yj\ g'uco\ g"gplw{0Cu'r\ gt\ 'hlpcpekenu'htqt''yj\ g'r\ gtkqf\ "gpf\ gf\ "qp"Ugr\ vgo\ dgt"52."4245"cpf\ 'hqt''yj\ g"hlpcpekeni'{gct"\ gpf\ gf\ "qp"Ugr\ vgo\ dgt"52."4245"cpf\ "hqt''yj\ g"hlpcpekeni'{gct''\ gpf\ gf\ "qp"Ugr\ vgo\ dgt"52."4245"cpf\ "hqt''yj\ g"hlpcpekeni'{gct''\ gpf\ gf\ "qp"Ugr\ vgo\ dgt"52."4245"cpf\ "hqt''yj\ g"hlpcpekeni'\ pui'\ pg'' \ sp''\ sp''\ pg''\ qwf\ "\ tg''\ sp''\ pg''\ pui'\ pg''\ pg''\ pui'\ pg''\ pg''\ pg''\ pg''\ pui'\ pg''\ pg''\ pui'\ pg''\ pg'''\ pg''\ pg''$

TkmHcevqt 'pq'73'cpf '46'ctg'eqo dlpgf 'vqi gyj gt 'cu'hqmqy u<'

470Vj g'lij qt wi g'lqt 'pqp/cxc kw dkiks{ 'lqhlr qy gt 'hc ekikskgu'b c { 'cf xgt ugn{ 'ch hgev'qwt 'dwulp guu'cpf 'j cxg'cp 'cf xgt ug'ho r c ev'qp '' qwt 't guwnu'qhlqr gt c slqp u'cpf 'hp c p ekc nleqp f kslqp 0'

 $Qwt"dwulpguu"r tqeguugu"tgs wktg"uwduwcp\lcn'co qwpv'qh'r qy gt"hcekk\lgu0Vj g"s wcpwo "cpf "pcwtg"qh'r qy gt"tgs wktgo gpwu"qh'r qy gt"hcekk\lgu0Vj g"s wcpwo "cpf "pcwtg"qh'r qy gt"tgs wktgo gpwu"qh'r qy gt"hcekt\lgun t \lga p \text{ for r cp } \text{ hu'twej "iy cv'kv'ecppqv'dg'hwr r ngo gpwgf "Tcwi o gpwgf "d { "cnugtpc\lambda g"Tkpf gr gpf gpv'uqwtegu'qh'r qy gt" uwr r n("ukpeg"\lambda "kpxqnxgu"uki pkhecpv'ecr kxch'gzr gpf kwtg"cpf "r gt"wpkv'equv'qh''gngevt\lek\{ "r tqf wegf "ku'xgt { "j ki j "lp"xkgy "qh' kptgcukpi "qkt'r tkegu"cpf "qy gt "eqpuvtckpw0'Y g"ctg"o ckpn{ "f gr gpf gpv'uqw"ucwg"I qxgtpo gpv'hqt"o gg\lpip "qwt"gngevt\lek\{ "tgs wktgo gpw0'Y g"f q'pqv'j cxg"cttcpi go gpw1'hqt "cnugtpc\lkxg"llpf gr gpf gpv'uqwtegu'qh'r qy gt "hxr r n{ "cu'qh'pqy 0Cp { "f kutwr \lqp" \text{ T} qy gt "hckn\text{ ktge vn{ "ch'ngev'qwt"r tqf wexlqp"y j kej "lp"wtp"uj cm'j cxg"cp"ko r cev'qp"r tqh\kcdkr\k\{ "cpf "wtpqxgt"qh'qwt" Eqo r cp{ "} \text{ T} \text{ cu'qb' r tqh'kcdkr\k\{ "cpf "wtpqxgt"qh'qwt" Eqo r cp{ "} \text{ T} \text{ T$

Tkınılıcevqt 'pq'49'('4: 'ctg'eqo dlpgf 'vqi gvj gt 'cu'lıqınqy u<'

4: OWe have applied for registration of the word mark "ASSOCIATED COATERS" and logo "

dwvf q'pqv'qy p'ij g'y qtf'o ctmlcpf 'iqi q'igi cnf 'bu'qp'f cvgOY g'o c{'dig'wpcdng'iq'bf gs wcvgnf 'ttqvgev'qwt 'kpvgngewcn'
rtqrgtvf *kgu+OHwtvj gto qtg.'y g'o c{'dig'lwdlgev'iq'encho u'bngi kpi 'dtgcej 'qh'ij ktf/rctvf 'kpvgngewcn'rtqrgtvf 'tki j vkO'

We have applied for registration of the word mark "ASSOCIATED COATERS" and logo "
"under y g"r tqxkılqpu"qh"y g"Vtcf go ctmi"Cev."3; ;; "dgctlpi "tghgtgpeg"pwo dgt"; : 25242"cpf "; : 2: : 24"tgur gevkxgn("dwif q"pqv'qy p" y g"y qtf "o ctmicpf "nqi q"cu'qp"f cvg0Cu'uwej "y g"f q"pqv'gplq{"y g"ucwwqt{"r tqvgevlqpu"ceeqtf gf "vq"c"tgi kuvgtgf "vtcf go ctmicu" qp"f cvg0Y g"j cxg"o cf g"cp"cr r hecvlqp"y ky "y g"Vtcf g'O ctmi"Tgi kuvt{."hqt"tgi kuvcvlqp"qh"qwt"nqi q"cpf "eqtr qtcvg"pco g"wpf gt" y g"r tqxkulqpu"qh"y g"Vtcf g'O ctmi"Cev."3; ;; 0Vj gtg"ecp"dg"pq"cuuvvcpeg"y cv'y g"y kni'dg"cdng"vq"tgi kuvgt"y g"y qtf "o ctmicpf" y g"nqi q"kp"hwwtg"qt"y cv."y kff "r ctvlgu"y kni'pqv'lphtkpi g"qwt"kpvgmgewcni'r tqr gtv{."ecwukpi "f co ci g"vq"qwt"dwulpguu"r tqur gevu." tgr wcvlqp"cpf "i qqf y kn0'Hwty gt."y g"ecppqv'cuuvtg"{qw'y cv'cp{"cr r hecvlqp"hqt"tgi kuvtvlqp"qh'qwt"vtcf go ctmikp"hwwtg"d{" qwt"Eqo r cp{"y kni'dg"i tcpvgf"d{"y g"tgngxcpv'cwy qtkkgu"kp"c"vko gn{"o cppgt"qt"cv'cm0'Qwt"ghqtwl"qrtqqvev'qwt"kpvgmge wcni'r tqr gtv{"o c{"pqv'dg"cf gs wcvg"cpf" o c{"ingcf"vq"tqkkulqp"qh'qwt"dwulpguu"xcrwg"cpf "qwt"qr gtcvlqnpu"eqwf"dg"cf xgtugn{"chhgevgf 0'Y g"o c{"pggf"vq"rkkki cvg"kp"qtf gt"vq"f gvgto kpg"y g"xcrkf kv{"qh'uwej "encko u"cpf" y g"ueqr g"qh'y g"r tqr tkgvct {"tki j wl'qh'qy gtu0'Cp{"uwej "hkki cvkqp"eqwf"dg"ko g"eqpuwo kpi "equun("cpf"y g'qweqo g'ecppqv'dg'i wctcpvggf 0Y g"o c{"pqv'dg"cdng"vq"f gygev'cp{"wcwj qtk gf"wcwj qtk gf"wug"qt"ccng"cr r tqr tkcvg"cpf "ko gn{"uwgr u"vq"gphqteg"qt"r tqvgev'qwt"kpvgmgewcni'r tqr gtv{0'

VJ G'KUWG''

 $\begin{tabular}{ll} Vj g'hqmqy kpi 'ku'\j g'kwo o ct { "qh'\j g''kuwg<"'} \\ " \end{tabular}$

Gs www{ 'Uj ct gu'Qhhgt gf '*3+"	Knuwg"qh'wr vq"6.38.622"Equity Shares of ₹ 10.00 each for cash at a
Rtgugpv'Kuuwg''qh''Gs wkw{ ''Uj ctgu''d{ ''qwt''Eqorcp{ ''*4+"'	price of ₹ [•]"per Equity Share (including premium of ₹ [•]"r gt"
	Equity Share) aggregating to ₹"[•] Ncmj 0'
Qwv'qlt'y j kej <'	
Oct mgv'O cmgt "T gugt xc vlqp 'Rqt vlqp'"	Wr vq''43.822''Equity Shares of ₹ 10.00 each fully paid/wr "qh"qwt"
"	Company for cash at a price of ₹ [•]"r gt"Gs wkx{ "Uj ctg"*kpenwf kpi "
	premium of ₹ [•] 'per Equity Share) aggregating to ₹ [•] Ncnj 0'
Pgv'Kumg'tq'tj g'Rwdrle"	Wr vq'5.; 6.: 22'Equity Shares of ₹ 10.00 each for cash at a price of
"	₹ [•]"per Equity Share (including premium of ₹ [•]"r gt"Gs wkx{"
	Share) aggregating to ₹ [•] Ncnj 0"
Qwv'qh'y j kej <'	
Cmqecvlqp'tq'Tgvclrdkpflxlf wcrlkpxguvqtu'hqt'twr vq'	Wr vq'3.; 9.622 "Equity Shares of ₹32022" gcej 'hqt "ecuj "at a price of ₹
₹2.00 Lakh''	[•] 'per Equity Share (including premium of ₹ [•] 'r gt 'Gs wkx{ 'Uj ctg+'
	aggregating to ₹ [•]'Ncmj 0'
Cnqecvkqp'' vq'' Pqp/Kpusksvskqpcn'' Kpxgusqtu'' hqt''	Wr vq'3.; 9.622 "Equity Shares of ₹32022" gcej 'hqt "ecuj "at a price of ₹
above ₹2.00 Lakh''	[•] 'per Equity Share (including premium of ₹ [•] 'r gt 'Gs wk { 'Uj ctg+''
	aggregating to ₹ [•] 'Ncmj 0'
Rtg'cpf 'Rquv/Kuwg'Gs ww ('Uj ctgu'	
Gs wks{ 'Uj ctgu'qww.ncpf kpi 'r t kqt 'vq'vj g'Ku.mg''	; .52.222 "Equity Shares of ₹ 10.00 each"
Gs wks{ 'Uj ct gu'qww.ncpf kpi 'chsgt 'tj g'Ku.mg''	Wr vq'35.68.622'Equity Shares of ₹10.00 each''
Qdlgevu'qh'tj g'Kuwg''	Please refer to the chapter titled "Qdlgew'qh'bj g'Kuwg'"dgi kppkpi"
	qp'Rci g'pq0Gttqt#Dqqmo ctm'pqv'f ghkpgf0'qh'vj ku'F tchv'Rtqur geww0"

UGE VKQP 'XK'E CRKVCN'UVT WE VWTG''

 $\label{thm:constraint} V_j g''Gs wkw{ "U_j ctg''Ecr kscn'qh''qwt''Eqorcp{."cu''qp''yj g''f cvg''qh''yj ku''F tchv''Rtqur gewu''cpf "chwgt''i kxkpi "ghhgev''q''yj g''Kuuwg''ku''ugv'' hqtyj ''dgrqy <'' \\ "$

UtO'	Rct vlewret u'	Co	qwpv''	
Pq0'		(₹'lp'Ncmj 'gzegr v'tij ct g'f cvc+''		
		Ci i tgi cvg'' P qo kpcn'Xcnwg''	Ci i tgi cvg'xcnvg'cv'' Kuwg'Rt leg''	
C0'	Cwj qtkgf 'Uj ctg'Ecrken' ^{6#} '	"	"	
"	42.22.222'Gs wkv("Shares of ₹ 10.00 each"	422022"	/"	
201	"	"	"	
D0'	Kunngf.'Uwduetklgf'cpf'Rckf/Wr'Uj ctg'Ecrkscridghqtg'\(\forall g'\) g'Kunng''		/"	
	9,30,000 Equity Shares of ₹ 10.00 each"	; 5022"	/"	
E0'	Rt gugpv'Kunng'lp 'tgto u'qh'tj kı'Ftch/Rt qur gevnu' ***'	"	''	
"	Htguj "Kuwg"qh"Wr vq"6.38.622"Gs wk√ "Shares of ₹ 10.00 each fully	Wr vq"63086"	[●]"	
	r ckf/up of our Company for cash at a price of ₹ [•] per Equity Share	vii vq 03000	[•]	
	(including premium of ₹ [•] per Equity Share)"			
	"			
"	Y j kej 'eqo rthıgu<''	"	"	
F0'	T gugt xc vlqp 'hqt 'O ct mgv'O cmgt 'i qt vlqp''	"	"	
"	Wr vq"43.822"Gs wkv{"Shares of ₹ 10.00 each fully paid/wr "qh"qwt"	Wr vq"4038"	[●]"	
	Company for cash at a price of ₹ [•] per Equity Share (including			
	premium of ₹ [•] per Equity Share)"			
G0'	PgvKung'tq'tj g'Rwdrle''	"	"	
"	Upto 3,94,800 Equity Shares of ₹ 10.00 each fully paid/wr "qh"qwt"	Wr vq'5; 06: "	[●]"	
	Company for cash at a price of ₹ [•] per Equity Share (including	π η υ, ω.	[-]	
	premium of ₹ [•] per Equity Share)"			
"	Qhy j kej '6't'	"	"	
"	Upto 1,97,400 Equity Shares of ₹ 10.00 each fully paid/wr "qh"qwt"	Wr vq'3; 096"	[●]"	
	Company for cash at a price of ₹ [•] per Gs wkx{ "Uj ctg"*kpenwf kpi "			
	premium of ₹ [•] per Equity Share) will be available for allocation			
	to Retail Individual Investors of up to ₹ 2.00 Lakh"			
"	Upto 1,97,400 Equity Shares of ₹ 10.00 each fully paid/wr "qh"qwt"	Wr vq'3; 096"	[●]"	
	Company for cash at a price of ₹ [•] per Equity Share (including			
	premium of ₹ [•] per Equity Share) will be available for allocation			
	to Retail Individual Investors of up to ₹ 2.00 Lakh "			
H0'	Kunngf.'Uwduetklgf 'cpf 'Relf/wr'Uj etg'Eerkenchngt'Uj g'Kunng''	"	11	
"	"Upto 13,46,400 Equity Shares of ₹ 10.00 each"	"Wr vq"356086"	/"	
	"	1		
Ι 0'	Ugewt ksłgu'Rt go kwo 'Ceeqwpv''	"	"	
"	Dghqtg"yj g"Kuwg"		· KV"	
"	Chygt 'y g 'Kunyg''		[●]"	

QDLGEV'QH'VJ G'KUWG''

Rt qr qugf 'Uej gf wrg'qh'Kor ngo gpwcvlqp'''

Vj g"r tqr qugf "uej gf wrg"qh"kor rgo gpvcvkqp"hqt"gzr cpukqp"qh"o cpwhcewtkpi "hcekrkvkgu"ku"cu"hqmqy u≺"

Rct dewretu'	Guwo cvgf 'O qpvj 'qh, ''		
	Eqo o gpego gpv''	Eqorgykqp''	
Qtf gt 'qh'Rrcpv'('O cej kpgt { "	O c{ "4246"	O c{ "4246"	
F grkx gt { "qh"O cej kpgt kgu"	Lwn("4246"	Cwi ww'4246"	
Kouvemevkqp"("Gtgevkqp"qh"O cej kpgtkgu"	Cwi ww'4246"	Qevqdgt"4246"	
VtkenTwp"epf "T(F"	P qxgo dgt "4246"		
Eqo o gteken'Rtqf wevkqp"	F gego dgt "4246"		

[,] Cuawo kpi "hj cv"RQ"Rt qeggf u"ctg"t gegkxgf "kp"hj g"o qpyj "qhlCrtkn"hj g"eqo rcp{"hj cm'hoctv'r mekpi "qtf gtu'ko o gf kcvgn{0" ''

Fgvckni'qh'Qdlgev'qh'tj g'Kung''

$3+Hwpf lpi 'Ecr kcdGzrgpf kwtg'tqy ctf u'lpuwcmcvkqp'qhlRncpv'('O cej lpgt \{ 'lp'qwt'gzkwlpi 'rtgo kugu'' | Cej lpgt \{ 'lp'qwt' | Cej lpgt \{ 'lp'$

Qwt"Eqo r cp{ "ku"o cpwbcewtgt "cpf "uwr r rkgt"qhi'hcdtkecvgf "r ctvu"cpf "r tguu"r ctwl"rkng"Vgrgeqo o wpkecvkqp"r ctvu. "f kgugn'gpi kpg" r ctvu. "f kgugn'gpi kpg" dtcengvu. "Y gki j dtkf i gu. "f ggr "f tcy p"r ctvu"j cxkpi "ur gekcn\(\psi\) "kp"j qv"f kr "i cnxcpk kpi "qh"o gv:n'r ctvu'Y g" r tqr qug"vq"ko r tqxg"vj g"s wcrk\("cpf "s wcpvk\("qh"qwt"r tqf wewt"hqt"y j kej "y g"kpvgpf "vq"kpvvcmi'ncvguv'gs wkr o gpv'cpf "wpf gt vcng" o qf khkecvkqp"kp"y g"gzkuvkpi "o cej kpg"cmpi "y ky "hgy "pgy "ci g"o cej kpgtkgu0Y g"dgrkgxg"vj cv'vj g"uckf "gs wkr o gpv'y kmi'gpcdrg"wu" kp"o cpwbcewtkpi "dgwgt"s wcrk\("r tqf wewi'y j kej "y kmi'kpetgcug"qwt"ucrgu"cpf "tgf weg"qwt"f ktgev'gzr gpf kwtgu0'

Cu'Tgi ctf u'Wr i tcf cwlqp'lp''y g''gzkuwlpi ''r rcpv'lu''eqpegtpgf . 'kv''ecp''dg''ur geldligf ''vq'5''o clqt''ctgc''qh'y qtm0'

C0 Vguskpi 'Gs wkr o gpv'''

Cmpi ukf g'qwt'\twungf 'etquu/ewi'\gungt.'dgpf '\gunkpi 'gs wkr o gpv'\lo r cev\\gungt.'cpf 'o ketqp'o gvgt'y j kej 'y g'cntgcf { 'j cxg'\p'qwt'' Ncd.''y g'\penwukqp''qh'\ucn\'ur tc{ ''yunkpi 'gs wkr o gpv'\p'qwt''rcdqtcvqt{.''y kni'gpcdng''wu'\q''eqpf wev'\yi qtqwi j ''cuuguuo gpvu'qh'\yi g'' f wtcdkrk\{ "cpf "eqttqukqp"tgukuvcpeg"qh''qwt"eqc\pi u0'D{ "uko wc\pi "j ctuj "gpxktqpo gpvcn''eqpf kkqpu."uwej "cu"gzr quwtg"\qu ucny c\gt.'y g''ecp''gpuwtg'\yi cv'qwt'r qy f gt''eqc\pi u'o ggv\'yi g''j ki j guv'urcpf ctf u'qh'r gthqto cpeg''cpf ''nqpi gxk\{0'Vj ku'\pxguvo gpv'' wpf gtueqtgu''qwt''f gf kec\pkqp"\q"f grkxgtkpi "tgrkcdng"cpf "f wtcdng"eqc\pi "uqnwkqpu"\q"qwt"xcn\pyf "ewuvqo gtu"cetquu"f kxgtug" kpf wuxt\gu0'

D0Eqcvlpi 'O cej lpgu''

 $\label{eq:vi} Vj g"eqc vlpi "o cej kpgu"y km' wpf gti q"c"uki pkhlecpv'wr i tcf g"vq"gpj cpeg"vj gkt "ghhlekgpe { ."ceewtce { ."cpf "xgtuc vkrkv{ "d{ "cf f kpi " cf xcpegf "RNE "qr gtcvgf "eqpvtqn'u{ uvgo "y j kej "kpxqnxgu"vj g"kpvgi tcvkqp"qh"cf xcpegf "cwqo cvkqp"u{ uvgo u "ko r tqxgf "eqpvtqn' o gej cpkuo u "cpf "gpj cpegf "eqcvkpi "cr r necvkqp"vgej pqmi kgu0Vj gug"wr i tcf gu"cko "vq"uvtgco nkpg"r tqf wevkqp"r tqeguugu. "tgf weg" f qy pvko g. "cpf "gpuwtg"eqpuknygpv'cpf "j ki j /s wcrkv{ "eqcvkpi "cr r necvkqp0"Y kij "vj gug"gpj cpego gpvu. "y g"ctg"r qkugf "vq"o ggv"vj g" kpetgcukpi "f go cpf u"qh"qwt "ewuvqo gtu"y j krg"o ckpvckpkpi "qwt "eqo o kxo gpv"vq"gzegngpeg"kp"eqcvkpi 0""$

E0J gcv'ej co dgt'''

Ewttgpvl "y g"ctg"j cxlpi "cp"qtyj qf qz"u{uvgo "qh"vgo r gtcwtg"O gcuwtgo gpv"u{uvgo "y tqwi j "Vj gto quvcw."y j lej "y g"y cpv"vq" wr i tcf g"vq"eqpvlpwqwu"vgo r gtcwtg"o gcuwtgo gpv"y tqwi j "c"u{uvgo "ecnrgf "VVT"*Vtcpulqto cvlqp"Vgo r gtcwtg"Tcpi g+0"Vj lu" lppqxcvlxg"u{uvgo "wkrlk gu"cf xcpegf "ugpuqtu"cpf "tgcn'vko g" o qpkqtlpi "vgej pqmi {"vq"r tgekugn{"vtcem'cpf"cpcn{ug"vj g" vtcpulqto cvlqp"dgj cxlqwt"qh"o cvgtlcmi"cu"vj g{"wpf gti q"j gcvlpi "r tqeguugu0"D{"r tqxlf lpi "eqpvlpwqwu"f cvc"ces wkuklqp"cpf "cpcn{uku."yj ku"qprlpg"u{uvgo "qhltgtu"wpr ctcmgrgf "lpuki j w"lpvq"yj g"vgo r gtcwtg"tcpi g"cv"y j lej "vtcpulqto cvlqpu"qeewt."gpcdnlpi "o qtg"lplqto gf "f gekulqp/o cmlpi "lp"o cvgtlcn'lugrgevlqp"cpf "r tqeguu"qr vko kj cvlqp0'

Y KVJ 'TGI CTFUVQ'PGY 'RNCPV'CPF'OCEJ KPGT[<'

Ewttgpvn('y g'f qkpi 'r qy f gt'eqcvkpi ''qp''o gvcnu.'y qqf 'hkro ''eqcvkpi ''cpf ''RXF H'eqcvkpi 0'

Cpqf ¼ kpi 'ku'cp'grgevtqej go kecn'r tqeguu''y cv'eqpxgtuu'y g'uwthceg'qh'o gvcnu. 'r ct vkewrctn{ 'cnwo kpkwo .'kpvq'c'f wtcdrg. 'eqttqukqp/tgukuvcpv'qzkf g''rc{gt0'Vj ku''r tqeguu''kpxqrxgu''ko o gtukpi "vj g"o gvcn'ikp''cp"grgevtqn{ w''uqnwkqp''cpf "r cuulpi "cp"grgevtke"ewttgpv' vj tqwi j 'ko0Cu''c'tguwnx''cp"qzkf g''rc{gt'hqto u'qp''yj g''o gvcn)u''uwthceg. 'y j kej "ecp''dg'hwtyj gt''tgcvgf "vq''cej kgxg'f khhgtgpv'hkpkuj gu." eqrqwtu. ''cpf "r tqr gt vkgu0Cpqf ¼ kpi "gpj cpegu''yj g''o gvcn)u''cr r gctcpeg. "cpf "ko r tqxgu''kwi'tgukuvcpeg''vq''y gct''cpf "eqttqukqp0'Ki'ku'' y kf gn{ 'wugf 'kp'xctkqwu'kpf wuxkgu. 'kpenwf kpi 'cwqo qvkxg. ''cgtqur ceg. 'eqpuvtwevkqp. ''cpf 'grgevtqpkeu. ''q'ko r tqxg''yj g'' gthqto cpeg'' cpf ''cguyj gykeu'qh'cnwo kpkwo 0'

40Y qtmlpi 'EcrlschTgs wltgo gpvu''

Lwwkliec slap 'hat 'I qrf lpi 'Rgt laf 'Ngxgnr<''

"

Pco g'qh' J gcf kpi ''	Kpet go gpwn'	Tgcuqp'ILwwkklecvlqp'ITcvlqpcrg'hqt'guwlo cvg''
J ger ipr	Tgs wlt go gpv' lp'Guwlo cvgu'' *Tu0lp'Ncmj u+'	
Kpxgpvqt{"	5@2"	Kpxgpvqtkgu"ku"gzr gevgf "vq"kpetgcug"htqo "Tu0'4; (B7"m:nj u"cu"qp"Ugr v0'52."4245"vq"Tu0 54(B7"m:nj u"cu"qp"O ctej "53."4246."cu"r gt 'vj g'i tqy vj "cpf 'tgs wktgo gpvu'qh'vj g'erkgpvu0'y g gzr gev'o kpqt" tkug" kp"kpxgpvqt { "d{"32" ."kp"kpxgpvqt{"xcnvg"qxgt" vj g"r gtkqf "wpf gt
Vtcf g" T gegkxcdrgu"	84@4"	eqpulf gtc\kqp0' Vtcf g"tgegkxcdrg'kı'gzr ge\gf '\q'kpetgcug'qxgt'\i g'eqo kpi "{ gctu'f wg'\q'kpetgcug'\p'xqn\to g qh' ucrgu0' Gu\to c\gf "\ \tacept \text{tcf g"tgegkxcdrg" cu" qp" O ctej "\ 53.4246" ku" Tu0' 4330\f\ 8" rcnj u" cu eqo r ctgf '\q'Tu0'36; \(\text{0}\f\ 6'\r\ r\ nj u''\cu'\qp"\Ugr\ \(\text{0}\f\ 52.'\f\ 42450'\) Kp''qtf gt'\q''gpj cpeg''ucrg. "gzgewy"pgy "qtf gtu."y g"pggf "\q''gz\gpf "gz\tc''etgf k\'r gt\qf "\q q\t''f gd\qtu0'Cu'y g''ctg''o cn\pi i "i qqf "o cti kp''qp''q\t''r tqf we\u."j ki j gt''eqnrge\qp"\to g''ku
Ecuj "cpf "Ecuj " Gs wkxcrgpv"	*67054+"	chtqtf cdrg"cpf "hkpcpekcm('hgcukdrg'\q'\wu0' Vj g"guvko cvgf "Ecuj "cpf "Ecuj "Gs wkxcrppwi'dcrcpeg"ku"gzr gevgf "vq"f gerkpg"\q'Tu0'420 4 rcnj u"cu"qp"O ctej "53."4246"htqo "Tu0'88066"rcnj u"cu"qp"Ugr v'52."42450'Ecuj "cpf "ecuj gs wkxcrppv'ku'r tqr qugf "vq'dg'wkrkugf "vq'r c{ 'ko o gf kcvg'rkcdkrkkgu0'Ecuj "cpf "dcpmidcrcpeg qh'42"rcnj u'ku'pggf gf 'hqt"f c{/vq/f c{ "cevkxkkgu'qh'vj g'dwukpguu0'
Uj qtv'Vgto " Nqcpu'cpf " Cf xcpegu"	38045"	Vj g"guvko cvgf "tgs wktgo gpv"hqt"O ctej "53."4246"ku"Tu0'53054"rcnj u"cu"eqo r ctgf "vq"Tu0'3702; "rcnj u"cu"qp"Ugr v0'52."42450' Rtqrqtvkqpcvg"cf xcpeg"vcz"pggf u"vq"dg"r ckf "qp"vj g"kpeqo g"gctpgf "d{"vj g"eqo r cp{0Uj qtvVgto "Nqcp"("cf xcpeg"f gr kevu"vj g"hki wtg"qh"cf xcpeg"vcz"vq"dg"r ckf "qp"vj g"kpeqo g0'
Qyj gt'Ewttgpv' Cuugvu''	82064"	Vj g"gurko cvgu"cu"qp"O ctej "53."4246"ku"Tu0: 5092"rcnj u"cu"eqo r ctgf "vq"Tu04504: "rcmj u cu"qp"Ugr v052."42450" Y g"cuuwo g"vj cv'j ki j gt "cf xcpeg"vq"uwr r rkgt "y qwrf "dg"pggf gf "vq"ugewtg"vj g"klo gn("uwr r n(cv'i qqf"r tkegu."uq"vj cv'qwt"r tqf werkqp"ej ckp"twpu"uo qqvj n(0" K"cnnq"kpenwf gu"Dcrcpegu"y knj "I qxgtpo gpv"Cwnj qtkkgu"y j kej "y km"kpetgcug"qxgt"vj g eqo kpi "{gctu"eqpukf gtkpi "vj g"gurko cvgf "kpetgcug"kp"ucrgu0"
Vtcf g'Rc{cdrg''	45087"	Gunko cvgf "tcf g'r c{cdigu"cu"qp"O ctej "53."4246"ku"Tu0359042"mi u"cu"eqo r ctgf "vq"Tu0335077"mi u"cu"qp"Ugr v0'52."42450'Y g"j cxg"cuuwo gf "vj cv"vj g" vcf g"r c{cdig"y qwrf kpetgcug"kp"cduqnwg"vgto "y kyj "kpetgcug"kp"r wtej cug"cpf "qvj gt"equvu0' Y g"j cxg"cuuwo gf "vq"tgf weg"vj g"r c{o gpv'r gtkqf "qxgt"vj g"{gctu"vq"cxcki"uqo g"gzvtc hkpcpekci'dgpghkv0'
Qyj gt'Ewttgpv' Nkcdkrkkgu"	*43076+"	Qyj gt 'ewttgpv'ikcdkrkkgu'cu'qp'O ctej '53.'4246'ctg'gurko cvgf '\q'dg'Tu093059'hcnj 'ci ckpuv' Tu0'; 40; 3"ncnj u"cu"qp"Ugr v0'52.'42450'Y g"cuuwo g"vj cv'vj gtg"y qwrf "dg"c"tgf werkqp"qh' 43076'Ncnj u"f wtkpi "vj g"r gtkqf 0'Y kyj "vj g'kpvgtpcn'ceetwcnu'qvj gt 'ewttgpv'ikcdkrkkgu'y qwrf "tgf weg'i tcf wcm("qxgt"vj g"r gtkqf "vq"i ckp'uqo g'hkpcpekcn'dgpghku0'
Uj qtv'Vgto " Rtqxkıkqp" "	9036"	Uj qtv'Vgto "Rtqxkukqpu"ctg"gzr gevgf "vq"kpetgcug"htqo "Tu04603: "Ncnj u'hqt"r gtkqf "gpf gf Ugr vgo dgt "52.4245" vq"Tu053054" Ncnj u"hqt" vj g"{ gct "gpf gf "O ctej ."53"42460 "Kv"kpenwf gu Kpeqo g"Vcz"r tqxkukqp" vj kej "y kmikpetgcug"qxgt" vj g"r gtkqf "cu'r tqhkwu"ctg"kpetgcukpi 0'
Vqwn'	:9032"	"

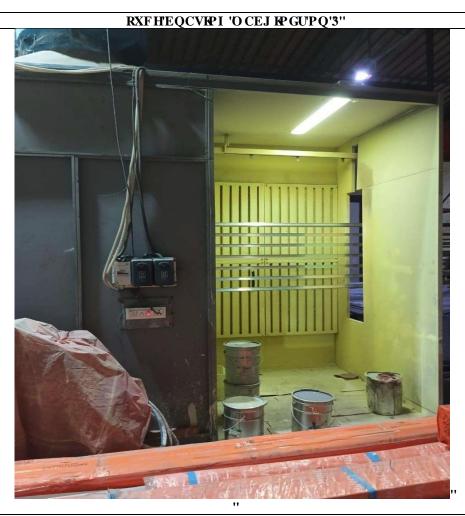
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"

QWT'DWURP GUU'

RNCPV'('O CEJ KPGT["

 $Qwt"qr\ gtc\ kqpcn'r\ tqeguu''ku''hwt\ y\ gt"uwr\ qt\ yf"d\{"gs\ wkr\ o\ gpv''hqt"r\ tg/vtgc\ w\ gpv''cpf"r\ qy\ f\ gt"eqc\ wpi \ "qh''cnwo\ kpkwo\ "gz\ vtwukqpu''\ y\ j\ kej ''ku''guugp\ wcn'hqt''yj\ g''ugc\ o\ nguu''gz\ gewkqp"qh''r\ tqlgevu0'$



RXFHEQCVIPI 'O CEJ IP GU'



WP IS'5'QH'RXF H'E QCVIPI "



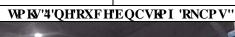




WP KV'4'QH'RXFH'EQCVIPI ''









RQY FGT'EQCVIPI 'DQQVJ''







EQPVTQN'RCPGN"







QWT'RTQRGTVKGU''

Ut0'		Pco g'qh'Nguqt''		Tgpv''	Rgt kqf 'qh'		Wici g''	Ct gc"
Pq"		1'Nlegpuqt'''	cpf 'Fcvg'''	* I p'₹)'''	Citggogg Hatqo''	Vq''		
30'	Cuj wk'Mj cpdgtkc" O cj guj wæ''NR" 421: 5168. "Mqmævc." Xkxgæpcpf cr wt." Uqwj "46''Rcti cpcu." Vj cmwtr wmwt" O cj guj qæ."Y guv' Dgpi cn''Kof kc."	Ot0Ici lk/Ukpi j " Fj knqp"	Ngcxg'cpf" Nlegpug''' Ci tggo gpv' f cyf 'Crthl' 23."4245"	62.222"	Cr tki'23." 4245"	Octej " 53.4245"	Tgi knytgf" Qlthleg"	6.857" us 0ln0'
40'	922363*Wpk;'K" I cpkr wt 'O cj guj w.m." 46'Rcti cpcu."Mqmcw"	Ot0'Lcilk/'Ukpij" Fjkmpp"	Ngcxg"cpf " Nægpug'"	62.222''	Qevqdgt'"' 23."4245"	O ctej " 53.4255"	Rrcpv'"'	5.; 22" us 0'hv0'

	965574"Y guv'Dgpi cn" Kpf kc"™Wpk/KK4"		Ci tggo gpv' f cvgf " Qevqdgt" 23.4245"					
50'	I cpkr wt'O cj guj wrc." 46"Reti cpeu."DOF"*Y +" Mqmew/"*Wpk/'KKG"	O t0Lci lk/Ukpi j " F j kmpp"	Ngcxg"cpf" Nkegpug"' Ci tggo gpv' f cwf" Qevqdgt"23." 4245"	62.222"	Qevqdgt" 23.4245"	Octej " 53.4245"	Rrcpv'	49.582" us 0ħx0'

UVCVG'Y KUG'DKHWTECVKQP'QH'UCNGU'

Pco g'qh'tj g'twcvg''	[gct'4243/4244''		[gct '4244/4245''		[gct '4245/4246'*Wr vq'Ugr v+'	
**	Co qwpv''	' ''	Co qwpv''	' ''	Co qwpv''	' ''
	*₹'kp'Ncmj u+''		*₹'kp'Ncmj u+''		*₹'lp'Ncmj u+''	
Y guv'Dgpi cn'	35; 063"	322022' "	56: 0, 9"	; 9044' "	4540,8"	322@2' "
I wletev'	P krl'	/"	7023"	3062' "	P krl'	/"
Cpf j tc'Rtcf guj "	P krl'	/"	5099"	3027' "	P kri'	/"
Qf kıj c"	P krl'	/"	303; "	2055' "	P kri'	/"
Vqwn'	35; 663"	322@2' ''	57: 0, 6"	322@2' ''	4540,8"	322@2' ''

RTQFWEV'Y KG'TGXGPWG''

Pco g'qhlvj g'Rtqf wev'I'Ugtxleg''	[gct'424	[gct '4243/4244''		[gct'4245/4246'*Wrwq'' Ugrv+'		
	Co qwpv'' *₹'kp'Ncmj u+''	' ''	Co qwpv'' *₹'kp'Ncmj u+''	' "	Co qwpv'' *₹'kp'Ncmj u+''	' ''
Y qqf "Hlokuj "Eqcyloi"	35@5"	; 0 7' "	54048"	; 0 7' "	320,7"	6092' "
RXF H'Eqcvkpi "	/"	/"	/"	/"	89083"	4; @4' "
Rqy f gt 'Eqcvkpi "	34708: "	; 2037' "	54808; "	; 2037' "	376062"	8804: ' "
Vqwn'	35; 063"	322@2' "	57: 0, 6"	322@2' "	4540,8"	322@2' "

RWTEJ CUGUHTQO 'QWT'VQR'7'UWRRNKGTU<'

Rct vlewrct u'	53/25	5/4244''	53/25/4245''		52/2; /4245''	
	Co qwpv''	' 'qh'Vqvcn'		' 'qh'Vqven'	Co qwpv''	' 'qh'Vqven'
	*Tu'lp''	Rwtej cug''	*Tu'kp''	Rwtej cug''	*Tuˈlp''	Rwtej cug''
	nenj +''		ıcınj +''		nenj +''	
Vqr/3"	/"	/"	/ ''	/**	7804; ''	5: 04; '''
Vqr/4"	4; 06; "	73099' "	92078"	5; 04; ' "	67072"	520,8' "
Vqr/5"	60 6"	: 06; '"	44055"	34065' "	37097"	32094' "
Vqr/6"	60, 6"	: 089' "	: 043"	6079' "	: 05; "	7092' "
Vqr/7"	80;"	34032' "	7024"	409; '"	5087"	406: ' "
Rwtej cug'Htqo 'Vqr/7''	780, 8''	322@2' ''	376043''	:70 8' ''	362089''	;7092' "
Uwrrnlgt u''						

TGXGP WG'HI'QO 'QWI'VQR'32'EWUVQO GTU'

Rct vlewrt u''	53/25	/4244''	53/25	/4245''	52/2;	52/2; /4245''	
	Co qwpv''	' 'qh'Vqvcn'	Co qwpv''	' 'qhVqvcn'	Co qwpv''	' 'qh'Vqvcn'	
	*Tưkp'tcmj +''	Uergu''	*Tu'lp'tenj +''	Uergu''	*Tu'lp'icmj +''	Uergu''	
Vqr '3"	63066"	4; 095' "	7; 072"	3807:' "	324068"	650: ' "	
Vqr '4"	48054"	3:0:' "	; 3065"	47069' "	57029"	37028' "	
Vqr "5"	48099"	3; 042' "	82064"	380 5' "	49095"	330, 2' "	
Vqr '6"	; 0 8"	902:' "	490 4"	9097' "	3306: "	60,5' "	
Vqr '7"	/"	/"	/"	/"	8046"	408: ' "	
Ucrgu'tq'Vqr'7'Ewwqo gtu'''	33: 092"	:7086' ''	48707: ''	950; ' "	3:40;:"	9:076' ''	

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QWT'O CPCI GO GPV"

QWI'DQCTF'QHFKIGEVQTU'

Kp'ceeqtf cpeg'y kj "qwt'Ctvlergu'qh'Cunqekcvlqp. "wprguu'qyi gty kug'f gwgto kpgf 'kp'c'i gpgtcn'o ggvkpi 'qh'yi g'Eqo r cp{ 'cpf 'lwdlgev' qu'yi g'r tqxkulqpu'qh'yi g'Eqo r cpkgu'Cev.'4235'cpf "qyi gt'cr r rlecdrg'twgu.'yi g'pwo dgt'qh'F ktgevqtu'qh'yi g'Eqo r cp{ 'luj cm'pqv' dg''guu''yi cp''5'cpf "pqv'o qtg''yi cp''370'Cu''qp''f cwg''qh'yi ku'F tchv'Rtqur gewu.'y g''j cxg''Hkxg'*27+'F ktgevqtu''qp''qwt''Dqctf.''y j kej "kperwf gu'Qpg'*23+'O cpci kpi "F ktgevqt.''Qpg'*23+'Y j qrg/vko g'F ktgevqt''cpf "Ej ckto cp.''Qpg'*23+'P qp/Gzgewkxg'F ktgevqt''cpf " w q'*24+'Kpf gr gpf gpv'F ktgevqtu'qw'qh'y j kej "qpg'ku'y qo gp''Kpf gr gpf gpv'F ktgevqt0' Ugv'hqtyi ''dgrqy.''ctg''f gvcknu'tgi ctf kpi ''qwt''Dqctf ''cu''qp''yi g'f cyg'qh'yi ku'F tchv'Rtqur geww.''

Pcog.'FRP.'Fcvg'qh'Dktvj.'Fguki pcvkqp.'Cfftguu.'' Qeewrcvkqp.'Vgto'cpf'Pcvkqpcrkv{''	Ci g'' *{ gct u+''	Qvj gt 'Fktgevqt uj kr u''
Ot0Lcilk/Upij'Fjkmp''	65"	Eqo replgu'
F IP <29; : 2663"		Okpfjkijyc{" Vgejpqnqikgu" Rtkxcvg" Nkokgf"
F cvg"qh"Dkt vj <"Lvxn("49."3; : 2"		" No ksgf 'Nkcdktk{ 'Rct vpgt uj kr u''
S workheden de grant "qh" Eqo o gteg""		" Pki"
F guki pcvkqp<'O cpci kpi 'F ktgevqt'"'		n n
Cfftguu<" 3; 9." Fko qpf" J ctdqvt" Tqcf" Dgj crc." Mqmcvc" 922256."Y guv'Dgpi cn"Kpfkc"		"
Qeewr cwkqp<'Dwukpguu'''		
Vgto <"Hqt"c"r gtlqf "qh"hlxg"*7+" { gctu"y kij "ghhgev"htqo "; 'j" F gego dgt "4245"vq": 'j "F gego dgt "424: "		
Rgtkqf "qh"Fktgevqtuj kr < Fktgevqt "ukpeg"Fgego dgt "44."4239"		
P cykqpcrkv{ < Kpf kcp'''		
Ot0J ctdj clcp'Upi j vj gvj K'	78"	Eqo rcplgu'
FIP <3263867; "		P kti'
Fcvg"qh"Dktyj <'O c{ "43."3; 89"		Nko lsgf 'Nkcdkrls{ 'Rct vpgt uj kr u''
S workhlecologp<"KZ ^{ij} "Uvopf off"		P kti'
F guki pcvkqp<"Y j qng"Vko g"F ktgevqt"cpf "Ej ckto cp"		
Cfftguu<" 3; ; ." Fko qpf" J ctdqwt" O cpf cn' Rctc" Mqmævc" 922256."Y guv'Dgpi cn'Kpfkc"		
Qeewr cvkqp<'Dwikpgini'''		
Vgto <"Hqt"c"r gtkqf "qh"hkxg"*7+" { gctu"y kyj "ghhgev"htqo "; ^{yj} " F gego dgt "4245"vq": ^{yj} "F gego dgt "424: "		
Rgtkqf "qh"Fktgevqtuj kr <"Fktgevqt"ukpeg"; ^{vj} "Fgego dgt"4245"		
P cykqpcrkv{ < Kpf kcp'''		
OtuDP expggv'Mewt''	68"	Eqo rcplgu'
FIP <29;: 268: "		Okpfjkijyc{" Vgejpqnqikgu" Rtkxcvg"
Fcvg"qh"Dktyj <"Icpwct{"23."3; 99""		Nko kgf "
S workhiecvkqp<"Doej grqt "qh"Uelgpeg"		Nko ksgf 'Nkcdktks{ 'Rct vpgt uj kr u' '
F gulki pcvkqp<"P qp/Gz gewkxg"F kt gevqt"		P kti' "
Cfftguu<" 3; 9." Fkco qpf" J ctdqwt" Tqcf" Dgj crc" .Mqmrcvc" 922256."Y guv'Dgpi crl"."Kpfkc"		
Qeewr cwkqp<"Dwukpguu"		
Vgto <'Nkcdrg''vq''tgvktg''d{''tqvcvkqp''		
Rgtkqf "qh"Fktgevqtuj kr < Fktgevqt "ukpeg"Fgegodgt"44."4239"		

Pcog.'FkP.'Fcvg'qh'Dktvj.'Fguki pcvkqp.'Cfftguu.'' Qeewrcvkqp.'Vgto'cpf'Pcvkqpcrkv{''	Ci g'' *{ gct u+''	Qvj gt 'Fkt gevqt uj kr u''
" P cylqpcrky{ <'Kpf kcp'" "		
P cytapens (< pr fep "" OulEj gypc'I wrw" F FP < 24434662" F cyg'qh'Dktyj < Cwi ww'36."3; : 9" S weikhecytap < Hgmqy "O go dgt "qh" KEUK" O DC "kp" J wo cp" T guqwtegul' F guki pcykap < Cf f kkapen Kof gr gpf gpv F ktgevqt, " Cf f t guk' 47" Ej kpct" Retm" F gwkp { "Vqy gt." Hrev" P q" 7" D." Manney '922379. "Y guv'Dgpi en'. "Kof ke" Qeewr cykap < Rtaliguukapen'" Vgto < Vkm' yj g"Cppwen' I gpgten' O ggykpi "vq" dg" j gnf "qp" qt"	58" " " " "	Eqo rcplgu" " Lwrlgp 'Ci tq' 'Kohtcvgej 'Nko kvgf " " Nko kvgf 'Nkcdktk ('Rct vpgt uj kr u')" " Y qy ''Qti cple' 'NNR'"' " "
dghqtg'52' 'Ugr vgo dgt''42460' "Rgtkqf" qh" Fktgevqtuj kr<" Cffkkqpcn' Fktgevqt" ukpeg" 9' '' Fgego dgt''4245" "Pevkqpenkv{ <kpfkcp"' "<="" td=""><td>. 411</td><td></td></kpfkcp"'>	. 411	
Otolic ('Mwo ct'Uj cy" " FRP <2; 849757" " Fcvg"qh"Dktyj <fgego "="" "hkpcpekcn"="" 3"="" :="" <cffkkqpcn"kofgr="" <dcej="" br="" cfftgun<="" cpcn(uv0)="" ctvgtgf="" dgt"49."3;="" fguki="" gpf="" gpv"fktgevqt,="" grqtu"qh"eqo="" gteg."ej="" o="" pcvkqp="" swcnkhecvkqp=""> '' 913" I T." Octj cwc" Fkej "Ncpg." 9." Uj {corwmvt." Dci j dc ct. "Mqmrcv"922225."Y guv"Dgpi cn"Kofkc"" " Qeewr cvkqp <rtqhguukqpcn" "="" "<="" "qp"qt"="" "ugr="" "vq"dg"j="" 9vj="" <'="" <'<'vkm'vj="" <kofkpf="" cffkkkqpcn'="" cvkqpcnkv{="" dghqtg"52vj="" dgt"4245"="" dgt"42460'="" fgego="" fktgevqt"="" fktgevqtuj="" g"cppwcn'i="" ggvkpi="" gpgtcn'o="" grf="" kcp"="" kr="" p="" qh"="" rgtkqf"="" td="" ukpeg"="" vgo="" vgto=""><td>64"</td><td>Eqo replgu' " IcknxkniDwukpguu'Kpf kc'Rtkxcvg'Nko kgf " " IcknxkniVgej pqnqi { 'Kpf kc'Rtkxcvg'Nko kgf " " Nko kgf 'Nkcdkks{ 'Rctvpgtuj kru' " P ki' " " "</td></rtqhguukqpcn"></fgego>	64"	Eqo replgu' " IcknxkniDwukpguu'Kpf kc'Rtkxcvg'Nko kgf " " IcknxkniVgej pqnqi { 'Kpf kc'Rtkxcvg'Nko kgf " " Nko kgf 'Nkcdkks{ 'Rctvpgtuj kru' " P ki' " " "

^{, &}quot;Vj g"Eqo rcp{"crrqkpvgf" vj g"Kpf grgpf gpv'Fkt gevqtu"chgt" vj g"Cl O"qhl'vj g"eqo rcp{"f cvgf" Ugrvgo dgt"52."42450'Cp" Kpf grgpf gpv'Fkt gevqtu'kp'\j g"Dqctf'Oggvkpi "qhl\j g'Eqo rcp{"cpf" vj q" ecp"ugtxg" vj g"dqctf" knd'gpuwkpi "Cppwch'I gpgtch'Oggvkpi "cu"rgt" Eqo rcpkgu" Cev."42350 Vj g"Eqo rcp{"y knt't gi wrct kug" vj gkt" crrqkpvo gpv'kp" gpuwkpi "Cppwch'I gpgtch'Oggvkpi 0"

DTKGH'RTQHKNG'QH'QWT'FKTGEVQTU'

Otolici lla'Upi j 'Fj kmpp."ci gf "65" {gctu01 g" j cu'c" f gi tgg" kp'Dcej gnqt" qh'Eqo o gteg" htqo "Vj g"Dj cy cpkr wt 'Gf wecvkqp" Uqekgv{" Eqngi g." Mqmcvc01 g" ku'y g" Hqwpf gt "cpf" qpg" qh'y g" Htuv Fktgevqtu'qh'y g" Eqo r cp{." incygt" j g" y cu'f guki pcvgf" cu'y g'O cpci kpi "Fktgevqt" qh'y g" Eqo r cp{ 'y ky g'hqev htqo "; yi Fgego dgt" 4245 "kmi: yi "Fgego dgt" 424: "hqt" c'r gtkqf" 7" {gctu01 g" j cu'gzr gtkgpeg" qh'o qtg" yi cp" 38" {gctu'kp'r qy f gt "Eqc-kpi "Kpf wuxt {01 g" j cu'r tqxgp" cdkrkv{" 'q" s wkemn{"cpcn{ ug'mg{"dwukpguu'f tkxgtu'cpf" f gxgnqr" uxtcygi kgu01 g" ku'cp" gpgti gxke" ngcf gt "mpqy p" hqt" j ku'cdkrkv{" 'q" etgcvg" uweeguuhwn'q weqo gu'kp" eqo r ngz "ukwcvkqpu0"

Ot0J ctdj clcp'Upi j vj gvj k"ci gf "78"{ gctu0J g"ku"cevkxgn{ "kpxqnxgf "kp"rtqxkf kpi "xctkqwu"vtckpkpi "uguukqpu"vq"y qtngtu"vq" kpetgcug"ghhekgpe{0J g"ku"KZ "uvcpf ctf "Rcuugf "cpf "J g"rquuguugu"gzegngpv"vko g"o cpci go gpv"unkmu "vqr "ewuvqo gt"tgucvkqpu" cdkhkkgu"cpf "uvtqpi "eqo o wpkecvkqp"unkmu0J g"j cu"cuukuvgf "kp"guvcdnkuj kpi "rtqlgevu."o qpkqtkpi "vj g"rtql tguu"qh"vj g"rtqlgevu" cpf "eqo r ngvkpi "vj g"rtqlgevu"y kvj kp"f gcf nkpgu0J g"y cu"crrqkpvgf "cu"Y j qng"Vko g"F ktgevqt"cpf "Ej ckto cp"qh"vj g"Eqo r cp{" y Qg0OF gego dgt"; ."42450"

 $\label{lem:condition} \textbf{OtulPcxpggv'Mcwt}. "ci gf" 68" \{ gctu0'Uj g"j cu"c"F gi tgg"lp"Dcej gmt"qh"Uelgpeg"htqo "Rwplcd"Wplxgtuk\{0'Uj g"cmq"j qnf u"c" f gi tgg"lp"O curgt"qhl"Gf wec lqp"htqo "Rwplcd"Wplxgtuk\{"cpf"O curgt"qhl"Ctwl"lp"Rwplcdk'htqo "Rwplcd"Wplxgtuk\{0'Uj g"y cu" crrqlpvgf"cu"P qp/Gzgewlxg"F ktgevqt"qh"y g"Eqo rcp{"y kj "ghhgev'htqo "F gego dgt"44."4239."uj g"ku"cunqekcvgf "y kj "y g" Eqo rcp{"ulpeg'kw'Kpeqtrqtcvkqp0"}$

OulEj gypc'I wrw."ci gf "58" { gctu0Uj g'j cu'r tqhguulqpcn'gzr gtlgpeg'qh'o qtg''yj cp''Vgp'' { gctu0Uj g'j qrf u'c'Dcej grqt'f gi tgg'lp'' Dwulpguu'Cf o lpkntcvlqp'htqo "Wpkxgtuk\{ "qh'Tclcuvj cp"cpf 'ku'c'hgmqy "o go dgt "qh''Kpurkwwg''qh'Eqo r cp { "Ugetgvctkgu''qh''Kpf kc0' Uj g''cnq'' grt u'c'f gi tgg''lp'' quv'i tcf wcwg'F kr rqo c''lp''Dwulpguu'Cf o lpkntcvlqp''htqo "U{o dkquku'Egpvtg''hqt'F krwcpeg''Ngctplpi "lp''J wo cp''Tguqwteg0'Uj g''ku''cnq''Dcej grqt''lp''Ncy "%NND+'htqo "Wpkxgtuk\{ "qh'Tclcuvj cp0'Uj g''cnq''ergctgf "j gt''Uqekcn'Cwf kqt'' Gzco lpcvkqp''lp''O c $\{$ "42450'Uj g''y cu''cr r qkpvgf "cu''yj g''Cf f kkqpcn'Kpf gr gpf gpv'F ktgevqt''qh''yj g''Eqo r cp $\{$ "y Q00'F gego dgt''9." 42450"

OtOLG ('Mwoct'Ujcy."ci gf "64"{gctu"J g"ku"c"s wcrkhlef "rtqhguukqpcn"y ky "c"DO'Eqo "*J+"f gi tgg. "EHC"*ÆHCKWpksgtukv{+" egtvkhlecvkqp."cpf "HTO "*WUH"ceetgf kcvkqp0J ku"tqng"kpxqnxgu"rtqxkf kpi "uxtcvgi ke"i vkf cpeg"cpf "qr gtcvkqpcn"gzegnngpeg"vq"y g" eqo r cplgu"j g"cf xkugu. "uqnkf kh{ kpi "j ku"rqukkqp"cu"c"xcnwcdng"cuugv'kp"y g"hkgrf 0J g"y cu"crrqkpvgf "cu"y g"Cf f kkqpcn"Kpf gr gpf gpv" F ktgevqt"qh"y g"Eqo r cp{"y Q000F gego dgt"9."42450"

EJ CPI GU'IP''MG[''O CPCI GTICN''RGTUQPPGN''CPF''UGPIQT''O CPCI GO GPV''IP''VJ G''NCUV''VJ TGG'' [GCTU''

Pco g''	Fguli pcvkqp''	Fcvg'qh'Crrqkpvo gpv'I'	Тдсидр''
		Ej cpi g''	
J ggpcn'J kguj "Tcyj qf"	Eqorcp{"Ugetgyct{"cpf"Eqornkcpeg"Qhhkegt"	F gego dgt '9. '4245"	Crrqkpvo gpv"
Lci lk/'Ukpi j 'F j kmpp''	Ej kgh'Hkpcpekcn'Qhhkegt''	F gego dgt'9."4245"	Crrqkpvo gpv"
Ici lk/Ukpi j 'Fj kmpp"	O cpci kpi "F ktgevqt"	F gego dgt"; ."4245"	Crrqkpvo gpv'
J ctdj clcp"Ukpi j vj gvj k"	Yjqng"Vkog"Fktgevqt"("Ejcktocp"	F gego dgt"; ."4245"	Crrqkpvo gpv'
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Fkd{c'Rtcucf"	Kpf gr gpf gpv'F ktgevqt"	F gego dgt'7."4245"	fwg'\q'Rtg/
			qeewr cwkqp"
			"

QWT'RTQO QVGTU'CPF'RTQO QVGT'I TQWR''

Fgvcknu'Qh'Qwt 'Rt qo qvgt u<''



Otul Pexpggv' Mewt "ci gf "68" { getu="uj g"j cu"c"F gi tgg" | p" Deej grqt "qh Uelgpeg | htqo 'Rwpled Wplksgtulk { 0Uj g"cnq j" qrf u" c"f gi tgg" | p" Ocungt "qh "Gf weckqp" | htqo "Rwpled "Wplksgtulk { "cpf 'Ocungt "qh "Ctwl" | p"Rwpled | htqo "Rwpled "Wplksgtulk { 0Uj g" y cu"cr r qlpvgf "cu"P qp/Gzgewlksg"F ktgevqt "qh 'y g"Eqo r cp { "y kj "ghgev'htqo "F gego dgt "44."4239." uj g"ku"cuuqelevgf "y kj "y g"Eqo r cp { "ulpeg" | ku"Kpeqtr qtcvkqp0'

S wcrlklecvlqp<'Dcej grqt''qh''Uekgpeg''''

Fcvg'qh'Dltvj < "Lcpwct { '23. '3; 99"

Tgulf gpvk:nCf f tgun
'3; 9.'F ko qpf 'J etdqwt''Tqef 'Dgj cm'' Mqmeve''/922256.'Y guv''Dgpi en 'K
øf ke'' ''

Pcvkqpcrkv{ < Kpf kcp"

RCP < EMHRM: 95D"

Flat gevqt uj kr'J grf <"'

HIP CPEICN'UVCVGO GP VU'CU'T GUVCVGF''

UVCVGO GP V'QH'P QVGU'VQ'TGUVCVGF 'HIP CP E ICN'UVCVGO GP VU'

*D+'Uti plttlecpv'Ceeqwpvlpi 'Rqrlelgu''

309'Ko rekto gpv'qh'Cuugwi'

Cuuguuo gpv'ku'f qpg"cv'gcej "Dencpeg"Uj ggv'f cvg"cu'vq"y j gyj gt "vj gtg"ku'cp{ "kpf kecvkqp" 'vj cv'c" \cpi kdng"cuugv'o ki j v'dg" ko r cktgf 0' Hqt''y g'r wtrqug''qh'cuuguulqpi 'korcktogpv''y g'uocmguv'kfgpwlhkcdng'i tqwr''qh'cuugwi'y cvi gpgtcvgu'ecuj 'kphnqyu'htqo'eqpwlqwlqi wug"ij cv'ctg"icti gn('kpf gr gpf gpv'qh'ij g'ecuj 'hnqy u'htqo 'qij gt'cuuguu'qt''qij gt'i tqwr 'qh'cuuguu 'ku'eqpukf gtgf 'cu'c'ecuj 'i gpgtcvkpi " wpkw0Kn"cp{"uwej 'hpf kecvkqp"gzkuvu."cp"guvko cvg"qh"vjg"tgeqxgtcdng"co qwpv"qh"cuugv'Tecuj 'i gpgtcvkpi "wpkv'ku"o cfg0Cuuguu'yjqug" ectt { kpi "xcnwg"gzeggf u"vj gkt "tgeqxgtcdrg"co qwpv"ctg"y tkwgp"f qy p"vq"tgeqxgtcdrg"co qwpv"0Tgeqxgtcdrg"co qwpv"ku"j ki j gt"qh" cp"cuugui'qt"ecuj "i gpgtcvkpi "wpkx)u'pgv'ugmkpi "r tkeg"cpf "kuu'xcnwg"kp"wug0Xcnwg"kp"wug'ku"yj g'r tgugpv'xcnwg'qh'guvko cvgf "hwwtg" ecuj 'hnqy u'gzr gevgf '\q'ctkug'htqo '\j g'eqp\kpvkpi '\wug'qh'cp'cuugv'cpf 'htqo 'kxu'f kur qucn'cv'\j g'gpf 'qh'kxu'\wughwn'nktg0Cuuguuo gpv' ku"cnnq"fqpg"cv"gcej "Dcncpeg"Uj ggv"fcvg"cu"vq"y j gyj gt"vj gtg"ku"cp{"kpfkecvkqp"vj cv"cp"ko rckto gpv"nquu"tgeqi pk| gf "hqt"cp"cuugv" kp"r tkqt"ceeqwp
vkpi 'r gtkqf "o c{ 'pq"nqpi gt "gzkuv'qt "o c{ 'j cxg"f get
gcugf0'

30 'Vczgu'qp'Kpeqo g''

Vcz "gzr gpug"hqt "yjg" { gct "eqort kukpi "ewtt gpv'vcz" ("fghgtt gf"vcz "ctg" eqpukfgt gf" "kp" fgvgtokpkpi" yjg" pgv'r tqhkv"hqt "yjg" { gct 0' $Rtqxkukqp"ku"o\ cf\ g"hqt"ewttgpv"cz"cpf\ "dcugf\ "qp"vcz"hcdkrkv\ "eqo\ r\ wgf\ "kp"ceeqtf\ cpeg"y\ ksj\ "tgrgxcpv"vcz"rcy\ u"cr\ r\ necdrg"vq"vj\ g"$ Eqorcp{0/Rtqxkukqp'ku'ocfg'hqt"fghgttgf"\cz'hqt"cm'\kokpi"fkhhgtgpeg"ctkukpi"dgwyggp"\czcdng'kpeqogu"("ceeqwpvkpi"kpeqog" $\verb|cv|'ewttgpvn|| | \verb|gpcevgf|''qt|'uwduvcpvkxgn|| | \verb|gpcevgf|''vcz|''tcvgu.''cu''y | g|''ecug''o | c | | \verb|gdGF|'' ghgttgf|''vcz|''cuugvu''''qy | gt''y | cp''kp''ukwcvkqp''qh'' | c | | ecug'' | ecug'' | c | | ecug'' |$ wpcduqtdgf"fgrtgelcvlqp"cpf"ectt{"hqtyctf"nquugu+"ctg"tgeqipl{gf"qpn{"kh"yjgtg"ku"tgcuqpcdrg"egtvclpv{"yjcv"yjg{"ykn"dg" $tgcrk\ gf\ "cpf\ "ctg"tgxkgy\ gf\ "hqt" \ 'j\ g"cr\ r\ tqr\ tkcvgpguu'qh' \ 'j\ gkt"tgur\ gevkxg"ectt\\ \{kpi\ "xcrwgu"cv'gcej\ "Dcrcpeg"Uj\ ggv'f\ cvg0F\ ghgttgf\ "vcz"\ (kpi\ "xcrwgu"cv'gcej\ "xcrwgu"cv'g$ cuugvu. "hp"ukwcvkqp"qh"wpcduqtdgf "f gr tgekcvkqp"cpf "ectt { "hqty ctf "hquugu"wpf gt "cz "hcy u"ctg"tgeqi pk gf "qpn("vq"vj g"gzvgpv"vj cv" y j gtg"ku"xktwcnl'egtvckpv{"uwrrqtvgf"d{"eqpxkpekpi"gxkfgpeg"vjcv'uwhhkekgpv"hwwtg"vczcdrg"kpeqog"ykml'dg"cxckrcdrg"cickpuv" y j kej "uwej "f ghgttgf "vcz"cuugwu"ecp"dg"tgeqi pk| gf 0F ghgttgf "Vcz"Cuugwu"cpf "F ghgttgf "Vcz"Ncdkrkx{ "ctg"dggp"qhhugv"y j gtgxgt" yjg"Eqorcp{"jcu"c"ngicm{"gphqtegcdng"tkijv"vq"ugv"qhh"ewttgpv"vcz"cuugvu"cickpuv"ewttgpv"vcz"nkcdknkx{"cpf"yjgtg"yjg"Fghgttgf"

Vcz 'Cuugv'cpf'F ghgttgf'Vcz'Ncdkrkx{'tgncvg'vq'Kpeqog'vczgu'ku'ngxkgf'd{'vjg'ucog'vczcvkqp'cwyjqtkx{0'

30, 'Gct plpi 'r gt 'Uj ct g'*GRU+''

Vjg"gctpkpiu"kp"cuegtvckpkpi" yjg"Eqorcp{)u"GRU"eqortkugu"yjg"pgv'rtqhkv'chygt"vcz"cwtkdwcdng"vq"gswkv{"ujctgjqnfgtu"cpf" kpenwf gu"yj g"r quv'vcz"ghhgev'qh"cp{"gzvtcqtf kpct{"ksgo u0Vj g"pwo dgt"qh"uj ctgu'wugf "kp"eqo r wkpi "dcuke'GRU'ku'yj g"y gki j vgf" cxgtci g"pwo dgt"qh'uj ctgu"qwuvcpf kpi "f wtkpi "vj g"{ gct0F knwgf "gctpkpi u"r gt"uj ctg"ku"eqo r wxgf "d{ "f kxkf kpi "vj g"r tqhk/**T**"iquu+" chygt "vcz"cwtkdwcdrg"vq"Gs wkx{ "Uj ctgj qrf gtu"*kpenwf kpi "vj g"r quv/vcz"ghhgev'qh"gz vtc"qtf kpct { "kgo u."kh"cp{+"cu"cf lwuygf "hqt" $f \ kx kf \ gpf. "kpvgt \ guv' \ cpf \ "qvj \ gt" \ ej \ cti \ gu'' \ q''gzr \ gpug" \ qt" \ kpeqo \ g''t \ grc \ kpi \ "q''yj \ g''f \ knwkx \ g''r \ qvgpvkcn''gs \ wkv{ "uj \ ct \ gu. "d{ "vj \ g''y \ gki \ j \ vgf" }$ $cxgtci\ g'pwo\ dgt'qh'gs\ wkw{\ ''ij\ ctgu'y\ j\ kej\ ''eqwrf''j\ cxg''dggp''kuuwgf\ ''qp''eqpxgtukqp''qh''cm'f\ knwkxg''r\ qvgpvkcn'gs\ wkw{\ ''uj\ ctgu'0}Rqvgpvkcn''$ gs wkx{ "uj ctgu"ctg"f ggo gf "vq"dg"f knwkxg"qpn("kh"vj gkt"eqpxgtukqp"vq"gs wkx{ "uj ctgu"y qwrf "f getgcug"vj g"pgv"r tqhkv"r gt"uj ctg"htqo " $eqp \\ \label{eq:control} eqp \\ \label{eq:controlle} eqp \\ \la$ wprguu'y g{ "j cxg'dggp'kuuwgf "cv'c'ncvgt "f cvg0F knwkxg'r qvgpvkcn'gs wkv{ 'uj ctgu'ctg'f gvgto kpgf 'kpf gr gpf gpvn('hqt'gcej 'r gtkqf 0'

MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULT OF QRGTCVKQPU'

EQORCTNQP'QHH '4243/44'Y NJ 'H '4242/43"

Tgxgpwg'htqo 'qrgtcwqpu''

Qwt"tgxgpwg"htqo "qrgtcvkqpu"kp"hkpcpekcn"{gct"4242/21 was ₹0 Lakhs which was further increased to ₹139.41 Lakhs in hkpcpekcn"{gct"4243/44"f wg"vq"gzrcpukqp"qh"dwukpguu0Qrgtcvkqpu"qh"y g"eqorcp{"uvctvgf "kp"revgt"rctv"qh"Hkpcpekcn"[gct"4244/450"Ukpeg."Eqorcp{"y cu"pqv"f qkpi "qrgtcvkqpu"kp"Hkpcpekcn"[gct"4242/43."Vjg"Tgxgpwg"hqt"yjg"uckf "rgtkqf "ku"pkn0"Hwtyjgt"kp" Hkpcpekcn"[gct"4243/44."vjg"eqorcp{"gctpgf "ku"tgxgpwg"yjkej"fkf"pqv"rgtvkpp"vq"yjqmg"{gct"cu"qrgtcvkqpu"uvctvgf "kp"yjg"ucyt"rctv"qh"yjg"{gct"cu"qrgtcvkqpu"uvctvgf "kp"yjg"ucyt"rctv"qh"yjg"{gct"cu"qrgtcvkqpu"uvctvgf "kp"yjqmg" {gct"cpf"jgpeg"vjgtg"ku"kpetgcug"kp"kcngu"kp"Hkpcpekcn"[gct"4244/45"cu"eqorctgf "vq"Hkpcpekcn"[gct"4243/440"

 $V_{\rm j}$ g'f gwku'qh'y g'tcvg'qh'y g'r tqf wew'ctg'o gpvkqpgf 'dgmy0

V{rgu'qh'Eqcvlpi '''	Wpk/qhO gcuwt go gpv''	Rt leg'T cpi g'*lfp'₹+''
Rqy f gt "Eqc kpi ""	Rgt "Us 0'O gvgt"	357/362"
Y qqf 'hkpkıj gf 'Eqcykpi '"	Rgt "Us 0'O gvgt"	672/772"
RXF H'Eqc\kpi '"'	Rgt "Us 0'O gvgt"	3397"

EQORCTRUQP'QH'HI '4244/45'Y KVJ 'HI '4243/44''

Tgxgpwg'ltqo 'qrgtcvkqpu''

Our revenue from operations is ₹358.94 Lakhs for the financial year 2022/23 as compared to ₹139.41 Ncnj u'hqt ''y g'hlpcpekcn' {gct ''4243/44'tgr tgugpvkpi ''cp'kpenkpg'qh'379069' ''qp''ceeqwpv'qh'kpetgcug'kp''gzr cpukqp'qh'dwukpguu0Qr gtcvkqpu'qh'y g'eqo r cp {"uctvgf "kp''ncvgt"r ctv'qh''Hlpcpekcn'[gct"4244/450'Ukpeg"Eqo r cp {"y cu"pqv'f qkpi "qr gtcvkqpu"kp"Hlpcpekcn'[gct"4242/43."Vj g" Tgxgpwg'hqt ''y g'uckf ''r gtkqf ''ku'pkt0'Hwty gt ''kp''Hlpcpekcn'[gct"4243/44''y g''eqo r cp { "gctpgf ''ku'tgxgpwg''y j kej ''f kf ''pqv'r gtvckp'' vq''y j qrg"{gct"cu'qr gtcvkqpu''uctvgf ''kp''y g''ncvgt''r ctv'qh''y g''{gct0'Eqo r ctcvkxgn(''lp''Hlpcpekcn'[gct"4244/45''Eqo r cp { ''Gctpgf '' tgxgpwg''htqo ''qr gtcvkqpu''y j kej ''r gtvckpu''vq''y j qrg''{gct"cpf ''j gpeg''y gtg''ku''kpetgcug''kp''ucrgu''kp''Hlpcpekcn'[gct"4244/45''cu''

eqo r ctgf "\q"H\pcpe\kcn\[gct \d243/440'

QVJ GT'TGI WNCVQT['CPF'UVCVWWQT['FKLENQUWTGU''

360 Vj g'P gv'y qtyj ."Ecuj 'Ceetwcni'cpf 'P gv'Vcpi kdrg''Cuugwi'qh'vj g'Eqo r cp{ "cu'r gt "vj g'T guwcyf 'Hlpcpekcn'Ucvgo gpwi'qh'qwt" Eqo r cp{ "hqt "vj g'r gtkqf "gpf gf "qp"Ugr ygo dgt "52."4245 'cpf "Hlpcpekcn'[gct "gpf gf "qp"O ctej "53."4245="4244"cpf "4243" ctg"cu'ugv'hqtvj "dgrqy <""

(₹ in Lakhs)''

				(* ***********************************
Rct dewct u'	Hqt 'tj g'r gt kqf 'gpf gf 'qp''	Hqt 'vj g'hlp	o'O ctej '52''	
	Ugr vgo dgt '52.'4245''	4245''	4244''	4243''
Pgw qtý ™³+"	325072"	92056"	38027"	405: "
GDIÆ VC''*⁴+"	73084"	: 306: "	44064"	/2036"
P gy'Vcni kdm'Cuugyı'*5+"	592093"	4: 8084"	4230.3"	4094"

Pgv vcpi knig Cutgyti * | 592(93") 4; 8(64") 425(13") 4(94") 3"+PgvY qty 'j cu'dggp''eqo rwyf 'cu'ij g'ci i tgi cvg''qh'gs wk\f 'tji ct gu'ecr k\cnlcpf 't gugt xgu''\gzen\f kpi 't gxcn\ckqp't gugt xgu+'cpf'' chyt 'f gf weskpi ''o kuegn\chipgaynu''gzr gpf kwt g''pqv'y t kwgp''qh''kh'cp{0'}

^{*4+&}quot;GDKF VC"j cu'dggp'f glkpgf "cu''j g'Gctpkpi u'dglqtg'kpvgtgux'f grtgekcvkqp"cpf "vcz'htqo "qrgtcvkqpu0"

 $^{{\}it ``f"Pgv'Vcpi kdrg'Cuuguu''ctg'fghpgf''cu''jg''uwo''qh'vqvcn'cuuguu''o kpwu'kpvcpi kdrg''cuuguu''}$

KUWG'UVTWE VWTG''

Vj ku'Kuwg'ku'dgkpi 'o cf g'kp'vgto u'qh'Tgi wævkqp''44; *3+"qh'Ej cr vgt''KZ 'qh'vj g''UGDK*KEF T+'Tgi wævkqpu.''423: ..'cu'co gpf gf '' from time to time, whereby, our Company's post issue face value capital is more than ten crore rupees and upto twenty/hkgg'' etqtg'twr ggu0'Qwt'Eqo r cp{'uj cmlkuwg'gs wkx{ 'uj ctgu'vq'vj g'r wdrke'cpf 'r tqr qug'vq'rkuv'vj g'uco g'qp'vj g''UO G'r rævhqto ''qh'DUG'' Nko kgf 0'Hqt'hwtyj gt'f gwku'tgi ctf kpi ''yj g'ucnkgpv'hgcwtgu'cpf ''ygto u'qh'uwej ''yj ku'kuwg.''r rgcug'tghgt'vq''ej cr vgt'vkrgf ""*Terms of the Issue""cpf '"*Issue Procedure"''dgi kppkpi 'qp'r ci g'Gttqt#Dqqmo ctmlpqvf ghlpgf 0cpf 'Gttqt#Dqqmo ctmlpqvf ghlpgf 0' tgur gevkxgn[''qh'vj ku'F tchv'Rtqur gewu0'''

Vj g'r tgugpv'knwg'eqo r tkugu'qh'wr vq'6.38.622'Equity Shares of face value of ₹ 10.00 each fully paid for cash at price of ₹ [•]" per Equity Share (including a premium of ₹ [•]"per Equity Share) aggregating to ₹ [•]0"

Vj g"r tgugpv'knuwg"eqo r tkugu'c"tgugtxcvkqp"qh'43.822"Equity Shares of face value of ₹ 10.00 each fully paid for cash at price of ₹ [•]"per Equity Share (including a premium of ₹ [•]"per Equity Share) aggregating to ₹ [•]"hqt"uwduetkr vkqp"d{"vj g" f guki pcvgf "O ctngv'O cngt"*O ctngv'O cngt"Tgugtxcvkqp"Rqt vkqp+"cpf "c"P gv'Knuwg"vq"Rwdrke"qh"5.; 6.: 22 "Gs wkx{ "Uj ctgu'qh'hceg" value of ₹ 10.00 each fully paid for cash at price of ₹ [•]"per Equity Share (including a premium of ₹ [•]"r gt "Gs wkx{ "Uj ctg+" aggregating to ₹ [•]"*vj g"P gv'Knuwg+0Vj g"Knuwg+cpf "vj g"P gv'Knuwg'y knleqpurkwwg"520, 5" "cpf "4; 654" "tgur gevkxgn{ "qh'vj g'Rquv" Knuwg"Rckf/wr "Gs wkx{ "Uj ctg'Ecr kcnlqh'vj g"Eqo r cp{0"

 $\label{eq:continuity} Vj \; g'' \textit{Kuwg''ku''dgkpi} \; "o \; cf \; g'' d \{ \; "y \; c \{ \; "qh'' H kz \; gf \; 'Rt keg'' \textit{Kuwg'' Rt qeguu''} \; \} \\$

Retylewictu'qh'yj g'kung''	Pgv'Kung'tq'Rwdrle, ''	Oct ngv'O engt 'Tgugt xevkqp'Rqt vkqp''
Pwo dgt 'qh'Gs wls{ 'Uj ct gu'	5.; 6.: 22''Gs wkv{ "Uj ctgu"	43.822"Gs wkv{ "Uj ctgu"
Rgt egpvci g'' qh'' Kunvg'' Uk g''	; 60 3" "qh'\'y g'\kuwg'\U\\ g''	708; " ''qh'\j g''kuuwg''Uk g''
cxckrcdrg'hqt 'cmqecvkqp"	4; (54" 'qh'y g'Rquv'Kuwg'Rckf'wr 'Ecr ken'	3082" 'qh'y g'Rquv'kuuwg'Rckf'wr'Ecrkxcn'
Dcuki' qh' Cmyw gpv' 1' Cmqecvkqp'' kt' t gur gevkxg'' ec vgi qt { 'kı'qxgt uwduet klgf '' "	Rtqr qt vkqpcvg" uwdlgev" vq" o kpko wo " cmqvo gpv" qh" [•]" Gs wkv{ "Uj ctgu" cpf " hwtyj gt" cmqvo gpv" kp" o wnkr ngu" qh" [•]" Gs wkv{ "Uj ctgu"gcej 0' "	Hko 'Cmqvo gpv'
	For further details please refer to "Dculu" qHCnqwo gpv" under chapter titled "Knwg" Rtqegf wtg" beginning on page Gttqt#' Dqqno ctm'pqv'f gHpgf 0' qh' y kı' F tchv' Rtqur gewu0'	
O kpko wo 'Crrnecvkqp'Uk g"	Hqt" Qvj gt" vj cp" Tgvckil Kpf kxkf wcil' Kpxguvqtuk''	[●]'Gs wkv{ "Uj ctgu'"
	Uwej "pwo dgt" qh" Gswkx{" Uj ctgu" kp" o wnkr ngu"qh"[•]'Gswkx{"Uj ctgu"uwej "vj cv' the Application Value exceeds ₹ 2.00 Ncnj u0'	
	Hqt 'T gwkilipf kalf weni'lipxguvqt u<'	
	[●]'Gs wkv{ ''Uj ctgu''''	
Oczko wo 'Crrnlecwkap'Uk g"	Hqt'' Qvjgt'' vjcp'' Tgvckii' Kpfkxkifwcni' Kpxguvqtuk'' " Vjg'oczkowo "crrnkecvkqp"ukļg'ku''yjg'Pgv'	[●] 'Gs wkv{ 'Uj ctgu'''
	Kung" vq" Rwdrle" uwdlgev" vq" rho ku" y g" lpxguvqt "j cu"vq"cf j gtg"wpf gt"yj g"tgrgxcpv" rcy u"cpf "tgi wrcwlqpu"cr r rhecdrg0"	
	Hqt 'TgwkiKpf kxkf weni'Kpxguvqt u<"	
	[•]''Gs wkw{ "Uj ctgu"cv'cp"Knuwg"Price of ₹" [•]" rgt" Gs wkw{ "Uj ctg0' Uwej " vj cv' vj g" Application Value does not exceeds ₹ 4022''Ncnj u0'	
Vtcf kpi 'Nqv'	[●]'Gs wkv{ "Uj ctgu"	[•]''Gs wkv{"Uj ctgu0'J qy gxgt." yj g"O ctmgv' O cmgtu"o c{"ceegr v'qf f "mqw"kh"cp{"kp" yj g" o ctmgv'cu'tgs wktgf "wpf gt" yj g"UGDK*KEFT+" Tgi wncvkqpu."423: 0'
O qf g'qh'Crrhec vlqp"		.kqp"*Qprkpg"qt"Rj {ukecn+"yjtqwij"yjg"CUDC" qt"WRKCrrrkecpvu'wukpi"U{pfkecvg"CUDC+0'
O qf g'qh'Cmqwo gpv'	Eqor wuqtkn ('kp'f go cygtkcnk gf'hqto 0'	
Vgto u'qh'Rc{o gpv'	Vj g"Crrnkecpv"uj cm"j cxg"uwhkekgpv"dcn	cpeg" kp" yj g"CUDC" ceeqwpv' cv' yj g" vko g" qh' m'dg"dnqengf "cp{ vko g'y kyj kp"vy q"f c{ u"qh'yj g"
п	Kp"ecug"qh"WRK'cu"cp"cngtpcvg"o gej cpkuo vko g"qh"eqphkto cvkqp"qh"o cpf cvg"eqngevkqj	."Crrnlecvlqp"co qwpv'uj cm'dg"dnqengf "cv'vj g" p"tgs wguv'd{ "crrnlecpv0"

 \prescript{Kp} "ecug"qh"WRK'cu"cp"cngtpcvg"o gej cpkuo ."Crrnkecvkqp"co qwpv'uj cm'dg"dmqengf "cv'vj g"vko g"qh'eqphkto cvkqp"qh'o cpf cvg" eqmgevkqp'tgs wguv'd{"crrnkecpv0"

.

, Ukpeg'r tgugpv'knuwg'ku'c'hkzgf 'r tkeg'knuwg. 'vj g'cmqecvkqp'kp'vj g'pgv'knuwg'vq'vj g'r wdnke'ecvgi qt{'kp'vgto u'qh'Tgi wncvkqp'475'qh' vj g"UGDK*KEFT+'Tgi wncvkqpu. '423: 'uj cm'dg'o cf g'cu'hqmqy u<''

- c+ Minimum fifty per cent to retail individual investors; and"
- d+ Remaining to:"

individual applicants other than retail individual investors; and"

other investors including corporate bodies or institutions, irrespective of the number of specified securities applied for;"

 $Rtqxkf gf "vj cv'vj g"wpuwduetkdgf "r qtvkqp"kp"gkvj gt "qh"vj g"ecvgi qtkgu"ur gekhkgf "kp"*c+"qt"*d+"cdqxg"o c{"dg"cmqecvgf "vq"vj g" cr r hecpvu"kp"vj g"qvj gt "ecvgi qt{0'}$

 $Gzr mpc \label{eq:continuity} Gzr mpc \label{eq:continuity} Gzr$

FGENCTCVKQP"

 $Y g."j gtgd{"f genetg" iy cv."cm" iy g"tgngxcpv" rtqxkulqpu"qh" iy g"Eqo r cplgu" Cev." 4235" "kq" iy g"gzvgpv" pqvklkgf +"cpf" iy g"I wkf grlpgu" kuwgf "d{" iy g"I qxgtpo gpv"qh" iy fkc" qt" iy g"T gi wrxlqpu" qt" I wkf grlygu" kuwgf "d{" iy g"Ugewtkkgu" cpf "Gzej cpi g"Dqctf" qh" iy fkc." cu" iy g"ecug" o c{" idg." j cxg" idggp" eqo r nlgf" y kj "cpf" pq"uxcygo gpv" o cf g" ilp" iy g"F tchv" Rtqur gewu" ku" eqpvtct {" iq" iy g"r tqxkulqpu" qh" iy g"Eqo r cplgu" Cev." 4235" "kq" iy g"gzvgpv pqklkgf + iy g"Ugewtkkgu" cpf "Gzej cpi g"Dqctf" qh" iy fkc" Cev." 3; ; 4." iy cej "cu" Co gpf gf" qt" Twgu" o cf g" iy gtg" wpf gt" qt" I wkf grlpgu" I'T gi wrxlqpu" kuwgf ." cu" iy g"ecug" o c{" idg0" Y g" hwt iy gt" egt whl{" iy cv"cm" iy g"f kuenquwtgu" cpf" uxcygo gpvu" o cf g" ip" iy g" F tchv" Rtqur gewu" ctg" it wg" cpf" eqttgev0"$

UN PGF'D['CNN'VJ G'FKTGEVQTU'QH'QWT'EQORCP["

PCO G'CPF'FGUN PCVKQP''	UN PCVWTG"
O TOLCI LKV'UKPI J 'FJ KNNQP''	Uf 1/"
Ocpci kpi 'Fkt gevqt'''	
FMP<29;:2663"	
	7774
O TOJ CTDJ CLCP'URPI J VJ GVJ K'	Uf 1/"
Ej ckto cp'('Y j qrg'Vko g'F kt gevqt"	
FKP<3263867;"	
O TUIP CXP GGV'MCWT''	UF V"
Pqp/Gz^2 ewkxg'F kt gevqt"	0.1
FRP <29; : 268: "	
1 H 25, . 200.	
O TOLC['MWO CT'UJ CY "	Uf 1/"
Cf f kskqpcn'Kpf gr gpf gpv'F kt gevqt"	
FKP<2; 849757"	
OTHET CANCIL ADVOID	I ¥ 1/11
O UJEJ GVPC'I WRVC'''	Uf 1/"
Cf f kkqpcn'Kpf gr gpf gpv'F kt gevqt"	
FRP<24434662"	

 $\hbox{ \it UNLPGF'D['VJG'EJKGH'HRPCPEKCN'QH'HREGT'CPF'EQORCP['UGETGVCT['('EQORNKCPEG'QH'HREGT''QH'QWT'EQORCP['']'] }$

UI'' UI''

OTOLCI LKV'UKPI J'FJKNNQP'' Ej kgh'Hkpcpekcn'Qhhkegt'' RCP<'CK, RF; 768'' Oull GGP CN'J KVGUJ 'T CVJ QF'''
Eqorcp{'Ugetgvct{'('Eqordcpeg'Qhhlegt''
RCP < GXTRT26; 3C'''

Rrceg<"Mqmcvc" Fcvg<'44"Octej "4246"



gcug'uecp''yj ku''S T'Eqfg''vq''xkgy ''yjg'Ftchv'Rtqurgewu+''

F cvgf &F gego dgt"52."4245"" *Vj ku'Ftchv'Rtqurgewu'y km'dg'wrfcvgf' wr qp'hhhpi 'y kj 'y g'TqE+"
"Rrgcug'tgcf 'Ugevkqp'48'cpf '54'qh'y g"
Eqo r cpkgu'Cv'4235" Hkzgf 'Rtkeg'Kuwg'''



CUUQEKCVGF 'EQCVGTUNKO KVGF''

Eqtrqtcvg'Kgpvkhlecvkqp'P wo dgt < W4: 34; Y D4239RNE446223"

Tgi	kwgtgf'QHHeg''	Eqpwev	Rgt uqp''	Go ckdcpf 'Vgrgr j qpg''	Y gdulsg''
Cuj wk'Mj c	pdgtke'O ej guj vene'NR''	J ggpcn'J kyg	uj 'Tcvj qf.''	Vgn '-; 3"; : 526'59923"	y y y Ocuuqekcvgfeqcvgtu
	mevc. "Xkxgmepepf er wt."	Eqorcp{"U		kan≺kphqBcuuqekcvgfeqcvgtu0kp"	kp"
	eti epeu."Vj emxtr wmxt"	Eqo r ncpe			1
	guv'Dgpi cn''Kpf kc.'922363''				
RT(OO QVGTU'QH'QWT'E ()O RCP[<0 T	TOLCI LKV'UKPI J'	FJ KNNQP'CPF'O TUUPCX	PGGV'MCWT"
RT(QO QVGTU'QH'QWF'EQ	QORCP[<0 T	TOLCI LW'UPI J'	FJ KNNQP'CPF'O TU0PCX	PGGV'MCWI"
RT(QO QVGTU'QH'QWT'E (COLCI LW'UPI J' VCKNU'QH'VJ G'KU		PGGV'MCWI"
V{rg"	QO QVGTU'QH'QWT'E Q Ht guj 'Kuwg'Uk'g''	FG	VCKNUQH'VJ G'KU	UWG"	
V{rg"	Htguj 'Kuwg'Ukg''		VCKNU'QH'VJ G'KU VqvcrlKumg'Ut; g"	UNG" Grli ldl	tls{ ''
V{rg"	Ht guj 'Kuwg'U{ g'' Wr vq'6.38.622'Gs wkv{ "	F G QHU'U ! g''	VCKNUQH'VJ G'KU	UWG" Grk kdl VJ KU" KUUWG" KU" DGRP I " (nk{ '' DCFG" IP " VGTO U" Q
	Htguj 'Kuwg'Ukg''	F G QHU'U ! g''	VCKNU'QH'VJ G'KU VqvcrlKumg'Ut; g"	UNG" Grli ldl	rk{ '' DCFG" IP " VGTOU" Q "EJ CRVGT"IZ "QH"VJ

PQV'CRRNÆCDNG'CU'VJ G'GPVKI'G'KUWG'EQPUVKVWGUHTGUJ 'KUWG'QH'GS WKV['UJ C'TGU

TKLM'KP 'TGNCVKQP 'VQ'VJ G'HKTUV'KUUVG'

Vj ku"dgkpi "vj g"hktuv"r wdnke"kuuwg"qh'vj g"Gs wkw{ "Uj ctgu."vj gtg"j cu"dggp"pq"hqto cn"o ctmgv"hqt"vj g"Gs wkw{ "Uj ctgu0"Vj g"hceg"xcnwg"qh'vj g Gs wkx{ "Uj ctgu'ku" "32022"gcej "cpf 'vj g"Knuwg"Rtkeg'ku"] _''wo gu'qh'vj g'hceg'xcnwg'qh'vj g'Gs wkx{ "Uj ctgu0Vj g'Knuwg'Rtkeg'*f gygto kpgf "cpf ' lwwkhlgf "d{"qwt "Eqorcp{"kp"eqpuwnckqp"y ksj "\jg"Ngcf "Ocpci gt "cu'uvcvgf "kp"õ*Dc uku'hqt 'Knawg'Rt keg*ö"qp"r ci g'96'uj qwf 'pqv'dg'\cngp" vq"dg"kpf kecvkxg"qh"vjg"octmgv'r tkeg"qh"vjg"Gs wkw{"Ujctgu"chygt"vjg"Gs wkw{"Ujctgu"ctg"rkuvgf0Pq"cuuwtcpeg"ecp"dg"ikxgp"tgictfkpi"cp" cevkxg"qt"uwurckpgf "ttcf kpi "kp"j g"Gs wkx{ "Uj ctgu"qt"tgi ctf kpi "j g"r tkeg"cv'y j kej "j g'Gs wkx{ "Uj ctgu'y km'dg'ttcf gf "chygt"hknkpi 0"

I GPGTCN'TKMU'

Kpxguvo gpvu'kp''Gs wkv{ "cpf "Gs wkv{/tgrcvgf "ugewtkvkgu'kpxqrxg"c''f gi tgg"qh''tkum'cpf "kpxguvqtu'uj qwrf "pqv'kpxguv'cp{ "hwpf u'kp"yj ku'Kuvwg' wprguu'yj g{ "ecp"chhqtf "vq"vcng"yj g"tkun'qh'nqukpi "yj gkt"gpvktg"kpxguvo gpv0"kpxguvqtu"ctg"cfxkugf "vq"tgcf"yj g"tkun'hcevqtu"ectghwn("dghqtg" vcmlpi "cp"kpxguvo gpv'f gekulqp"kp"yj g"Kuuwg0'Hqt"vcmlpi "cp"kpxguvo gpv'f gekulqp."kpxguvqtu"o wuv'tgn("qp"yj gkt"qy p"gzco kpcvlqp"qh"qwt" Eqorcp{"cpf"/ijg"Knuwg"kpenwfkpi"/jg"tknmu"kpxqnxgf0"Vjg"Gswkw{"Ujctgu"knuwgf"kp"/jg"Knuwg"jcxg"pqv"dggp"tgeqoogpfgf"qt"crrtqxgf d{"yj g"Ugewtkkgu"cpf "Gzej cpi g"Dqctf "qh"kpf kc""õUGDK6+"pqt"f qgu"UGDKi wctcpvgg"yj g"ceewtce{"qt"cf gs wce{"qh"yj g"F tchv'Rtqur ge www0" Ur gekhle "cwgpvkqp"qh"yj g"kpxguvqtu"ku"kpxkgf "vq"yj g"ugevkqp"*TkunHcevqtuö*"dgi kppkpi "qp"r ci g"46"qh'yj ku"Ftchv'Rtqur gewuu0"

KUWGTøU'CDUQNWYG'TGURQPUKNKV[''

Qwt "Eqorcp{."jcxkpi" of g"cmltgcuqpcdrg"kps wktkgu. "ceegr vu't gur qpukdkrkx{ "hqt "cpf" eqphktou' vjcv' vjku' Ftchv' Rtqur gewu'eqpvckpu' cm' kphqto cvkqp"y kj "tgi ctf "vq"qwt"Eqo r cp{ "cpf "vj g"Kuwg."y j kej "ku"o cvgtkcnkp"vj g"eqpvgzv"qh"vj g"Kuwg."vj cv"vj g"kphqto cvkqp"eqpvckpgf "kp" y ku"Ftchn/Rtqurgewu"ku"ntwg"cpf "eqttgev"kp"cm'ocygtkcn'curgevu"cpf "ku"pqv'okurgefkpi "kp"cp{"ocygtkcn'tgurgev."yjcv"qrkpkqpu"cpf" kpygpykqpu"gzrtguugf" jgtgkp"ctg" jqpguvn("jgnf"cpf" yjcv'yjgtg"ctg"pq"qyjgt"hcevu. "yjg"qokuukqp"qh'yjkej"ocngu'yjku"Ftchv'Rtqurgewuu"cu" c'y j qng''qt''cp{ "qh'uwej "kphqto cvkqp"qt''y g''gzrtguukqp"qh''cp{ 'uwej "qrkpkqpu''qt'kpvgpvkqpu'o kungcfkpi 'kp''cp{ "o cvgtkcn'tgurgev0"

Vjg'Gswkx{"Ujctgu'Kuwgf"vjtqwij"vjku'Ftchv'Rtqurgewu'ctg'rtqrqugf"vq"dg'nkuvgf"qp"vjg'UOG'Rncvhqto"qh'DUG'Nkoksgf"kp"vgtou''qh' yj g"Ej cr vgt "KZ"qh'vj g"UGDK*KEFT+Tgi wrcvkqpu."423: "cu"co gpf gf "htqo "vko g"vq"vko g0Hqt"vj g"r wtr qug"qh'vj ku"Kuuwg."vj g"F guki pcvgf

Ordeniozej epi g y nitag y g Deed vito kigi ODeedo to		
NGCF 'O CP CI GT'VQ'VJ G'KUWG''	Eqpwev'Rgt uqp''	Go ckd('Vgrgrj qpg''
GREVEX* 1 TGVGZ'EQTRQTCVG'UGTXÆGUNKO KVGF''	Ot0Ctxkpf"Jctrcmc"	Gockn c'kphqBitgvgzitqwr0eqo" VgniPq0 c'-; 3"; 8754"6;: 85"
TGI KVTCT'VQ'VJ G'KUVG''	Eqpwev'Rgt uqp''	Go ckd('Vgrgrj qpg''
TM STM	O t0Xkpc{cniOqtdcrg"	Go cknt'kr qB dki uj ctgqpnkpg@qo '' Vgnt': ; 3"44"8485": 422"
DH UJ CTG'UGTXÆGU'RTKXCVG'NKO KVGF''		
KU	UWG'RTQI TCOOG''	
KUWG'ORGPUOP< "		KUWG'ENOUGUOP< "





CUQEKCVGF 'EQCVGTUNKO KVGF''

Eqtrqtcvg"Kfgpvkhlecvkqp"P wo dgt<"W4: 34; Y D4239RNE446223"

 $Qwt"Eqo\;rcp\{"y\;cu"qtki\;kpcm("lpeqtr\;qtcvgf"cu":-CUQEKCVGF"EQCVGTU"RTKCVG"NKO\;kVGF\,\emptyset"c"r\;tkxcvg"rko\;kgf"eqo\;rcp\{"vpf\;gt"y\;g"Eqo\;rcpkgu"Cev."4235"y\;kj\;"y\;g"Tgi\;kntct"qh'Eqo\;rcpkgu"\gammac"r\;wtuwcpv'vq"Egrvkhlecvg"qh'Kpeqtr\;qtcvkqp'fcvgf"Fgego\;dgt"44."42390Vj\;g'pco\;g'qh'yj\;g'eqo\;rcp{"y\;cu"ej\;cpi\;gf"htqo":-CUQEKCVGF"EQCVGTU"NKO\;kVGF\,\emptyset"eqpvggtukqp"qt"qwt"eqo\;rcp{"htqo"rtkxcvg"nko\;kgf"eqo\;rcp{"y\;cu"ej\;cpi~gf"htqo":-CUQEKCVGF"EQCVGTU"NKO\;kVGF\,\emptyset"eqpvggtukqp"qt"qwt"eqo\;rcp{"htqo"rtkxcvg"nko\;kgf"eqo\;rcp{"y\;cu"ej~gr"ycu~gr"ycu~gr"ycu~gr"ycu~gr"ycu~gr"ycu~gr"ycu~gr"ycu~gr"ycu~gr"ycu~gr"ycu~gr"ycu~gr~$ eqorcp{."rwtuwcpv%q"Urgekcn"Tguqnwkqp"rcuugf"tl{"yjg"ujctgjqnfgtu"qh"qwt"Eqorcp{"kp"yjg"Czvtc/qtfkpct{"Igpgtcn1Oggwkpi"jgnf"qp"Qevqdgt"46."4245."cpf"c"htguj"egtwkhkecvg" qh" light lightW4: 34; Y D4239RNE4462230Hqt 'hwty gt'f gwkni'r ngcug'tghgt '\q'ty g'ej crygt 'kwrgf '\oldo J kwrgt '\copf 'Egt wkp 'Eqtrqt cvg' O cwgt uö''dgi kppkpi ''qp 'Rci g''336'\qhty ku'F tchv'Riqur gewwu'

Tgi kngt gf 'Qhheg<'Cuj wk'Mj cpdgtle'O cj guj vcne''NR'421: 5168.'Mqmevc.''Xkxgnepcpf cr wt.''Uqwj ''46''Rcti cpcu ''Vj cnwtr wnwt'O cj guvqrc.''Y guv'Dgpi cn ''Kpf kc.'922363''

Vgngr j qpg<'-!; 3";: 526'59923='Go ckn<'kphyB cuuqekcygf eqcygtuUp='Y gdukg<'y y y @uuqekcygf eqcygtuUp=''

Eqpvcev'Rgt upp<'J ggpcn'J kguj 'Tcvj qf.''Eqo r cp{ ''Ugetgyct { ''cpf 'Eqo r nkcpeg'Qhhegt=''

Eqtrqtcvg'K gp\hheckqp'P wo dgt<\W4: 34; Y D4239RNE446223''

RWDNIE "KUUWG"QH"WRVQ"6.38.622"GS WKV["UJ CTGU"QH"HCEG"XCNWG"QH" "32022"GCEJ "%GS WKV["UJ CTGU";;HCUUQEKCVGF"EQCVGTU"NKO KVGF *VJ G5EQO RCP[6'QT'VJ G'5HUWGT6'+HQT'ECU 'CV'C'RTEG'QH' '] _RGT'GS WM['U CTG'RPENWFRI 'C'U CTG'RTGO KWO 'QH' '] _RGT'GS WM[U CTG'WYJ G'5HUWG'RTEG'6+CI I TGI CVRI "VQ" '] _'NCMJ U*6VJ G'HUWG6'+QH'Y J EJ '] _'GS WM['U CTG'UQH'HCEG'XCNWG'QH' '3202'GCEJ HQT"ECU "CV'C"RTEG'QH' '] _'RGT"GS WM["U CTG'RPENWFRI "C"U CTG'RTGO KWO "QH" "] _'RGT"GS WM["U CTG'CI I TGI CVRI "VQ" "] _ NCMJ U'Y KNN'DG'TGUGTXGF "HOT "UWDUETRVKOP "D["O CTMGV"O CMGT "VQ"VJ G"KUUWG"*VJ G"OO CTMGV'O CMGT 'TGUGTXCVKQP 'ROTVKOP OH VJ GʻKUUWGʻNGUUʻVJ GʻO CTMGVʻO CMGTʻTGUGTXCVKQP 'RQTVKQP 'KOO'P GVʻKUUWGʻQHʻ] _'CS WKV[''UJ CTGUQHʻHCEGʻXCNWGʻQHʻ 3202'GCEJ ''CV'C''
RTIKGʻQHʻ 'J _'RGTʻGS WKV["UJ CTGʻIP ENWFIP I ''C''UJ CTGʻRTGO KWO "QHʻ "J _'RGTʻGS WKV["UJ CTGʻCI I TGI CVIP I "VQ" 'J _'NCMJ Uʻ®VJ GʻSP GV''
HUWGʻƏÐVJ GʻI TQUUKUWGʻCP FʻVJ GʻP GVʻKUWGʻY KNNEQP UVKWVGʻJ _' ''CP Fʻ] _' "TGURGEVKKGN['QH'VJ GʻRQUVʻKUWGʻRCIF 'WRĞS WKV['UJ CTGʻ ECRK/CN'QH'QWT'EQORCP[0'

VJ GʻHCEGʻXCNWGʻQHVJ GʻGS WAV['UJ CTGʻNU' '32022'CPF'VJ GʻNUWGʻRTHEGʻNU] _'VKO GUQHVJ GʻHCEGʻXCNWGʻQHVJ GʻGS WAV['UJ CTG\

72' "qh'y g'P gy'Kuwg'ku''cmqecvgf "hqt "Tgwckri'Kpf kxkf wcn'Crrntecpvu''cpf "y g'dcrcpeg''uj cmidg"qhtgtgf "vq"kpf kxkf wcn'crrntecpvu''qyi gt''yj cp''Tgwckri'Kpf kxkf wcn'Crrntecpvu''cpf "y qyj gr"lpxgurqtu"lpenxf lpi "Eqtrqtcvg"Dqf lgu"qt"lfyukswlqpu. "S lDu"cpf "P qp/ lfyukswlqpcn"Crrnlecpvtf/J qy gxgt. "lht"yj g"ci i tgi cvg"f go cpf "ltqo "yj g"Tgvclnt"kyf lkxlf wcn" Crrnecpulku"nguu'y cp'72' . "'y gp''y g''dcnepeg''Gs wkk ("Uj ctgu'kp''y cv'rqt klqp"y km'dg''cff gf ''q''y g''P qp/Tgvckn'Rqt klqp"qlihgtgf ''q''y g''tgo ckpkpi ''kpxguvqtu'kpenwf kpi ''S KDu'' cpf ''P KKu''cpf ''xkeg/xgtuc''uwdlgev''q''xcntf ''Crrnecvkqpu''dgkpi ''tgegkxgf ''tqo ''y go ''cv'qt''cdqxg''y g''Kuwg''Rtkeg0/Cff kklqpcm(.'kti'y g''Tgvckn'kpf kxlf wcn'Crrnecvkqpu''dgkpi ''tgegkxgf ''ttqo ''y go ''cv'qt''cdqxg''y g''Kuwg''Rtkeg0/Cff kklqpcm(.'kti'y g''Tgvckn'kpf kxlf wcn'Crrnecvkqpu''ecygi qt{" ku"gpvkngf "vq"oqtg"vjcp"hthn("rgt"egpv'qp"rtqrqtvkqpcvg"dcuku "vjg"Tgvckn"kpfkxkfvcn"Crrnkecpvu"ujcm"dg"cmqecvgf "vjcv"jkijgt"rgtegpvcig0"Cm"rqvgpvkcn"kpxguvqtu"ujcm" rct/lekrcvg'kp''y g'Kuwg'qpn(''y tqwi j ''cp'Crrnlecvkqp'Uwrqtvgf''d{'Dmpengf'Coqwpv*6CUDCö+'rtqeguu'kpenwfkpi ''y tqwi j ''WRKoqfg'*cu'crrnlecdmg+'d{'rtqxkfkpi 'Fgckmu''qh''y g'tgurgevkxg''dcpmiceeqwpwu'cpf''l'qt''WRKKFu "kp''ecug''qh'TKKu "kh''crrnlecdmg "y j kej ''y km'dg''dmpengf''d{''y g''Ugnh/Egtwkhtgf''U{pfkecvg''Dcpmu'*6UEUDuö+'hqt''y g''ucog0' Hqt"f gockun'hp"vj ku't gi ctf."ur gekhle"cwgpvkqp"ku'kpxksgf "vq" Haavg 'Rt qegf wt go'qp"r ci g"3: 8"qh'vj ku'F tch/Rtqur gewu0C"eqr ("y kni'dg'hkgf "y kj "vj g"Tgi kuvtct "qh'Eqo r cpkgu" cu't gs wkt gf 'wpf gt 'Ugevkqpu'48''cpf '54''qh''yj g'Eqo r cpkgu''Cev.''42350'

THIMHP 'TGNCVKQP 'VQ'VJ G'HKTUV'HUWG

Vj ku'dgkpi "vj g"lktuv'Rwdnke"Knuwg"qh'qwt"Eqorcp{."vj gtg"j cu'dggp"pq"lqtocn'octngv"hqt"vj g"Gswkk{"Uj ctgu"qh'qwt"Eqorcp{0'Vj g"lceg"xcnwg"qh'vj g"Gswkk{"Uj ctgu"ku" 32(1220V) g'Kuwg'Rt keg''cu'f gygto kpgf "d{ "qwt'Eqorcp{"kp"eqpuwncvkqp"y kj "yj g'Ngcf "Ocpci gt "cu'uvcygf "kp"-Dc ukul hqt 'Kanwg'Rt keg''dgi kppkpi "qp"r ci g'96qh'yj ku'F tchv' Rtqur gewu+"uj qwrf "pqv'dg"\cngp"\q"dg"\pf kec\kxg"qhi\j g"o ctngv'r tkeg"qhi\j g"Gs wk\f"Uj ctgu'chgt"\j g"Gs wk\f"Uj ctgu'ctg"hkugf 0"P q"cuuwtcpeg"ecp"dg"i kxgp"tgi ctf kpi "cp" cevkxg"qt"uwuxclpgf "ttcf.lpi "lp"vj g"Csvkk("Uj ctgu"qt"tgi ctf.lpi "vj g"r tleg"ev"y j lej "vj g"Csvkk("Uj ctgu"y km'dg"ttcf.gf "chxgt"rkurkpi 0"

Kpxguvo gpwl"lp"gsvlk\{"cpf"gsvlk\{/tgrcvgf"ugewtkkgu"lpxqrxg"c"fgi tgg"qh'i'tkuni'cpf"lpxguvqtu'uj qwf"pqv'lpxguv'cp{"hwpfu"lp"yj ku'Kuwg'wprguu'yj g{"ecp"chhqtf"vq"vcng"vj g" tkım'qh'nqukpi "yi gkt'kpxguvo gpv0'Kpxguvqtu"ctg"cf xkugf "vq"tgcf "yi g'kkım'hcevqtu"ectgimm ("dghqtg"vcnkpi "cp"kpxguvo gpv0'f gekulqp"kp"yi ku'qh'ngtkpi 0'Hqt"vcnkpi "cp"kpxguvo gpv0'f gekulqp"up"yi gkt'qyp p"gzco kpc"vqp"qh"yi g"Kuwgt"cpf "yi g"Kuwgt"kpennf kpi g"ktuwgt"yi g"ktuwgt"yi g'kgwlqtu"o wun'tgn("qp"yi gkt"qyp p"gzco kpc"vqp"qh"yi g"Kuwgt"cpf "yi g"Kuwgt"kpennf kpi "yi g"tkumi"kpxguvqtu"o wun'tgn("qp"yi gkt"qyp p"gzco kpc"vqp"qh"yi g"Kuwgt"cpf "yi g"Kuwgt"kpennf kpi "yi g"tkumi"kpxguvqtgf'0' g"Gs wkk("Uj ctgu"kp"yi g"Kuwg"j cxg"pgki gt"dggp" tgeqo o gpf gf "pqt"crrrtqxgg" 'dl 'Ugewkkkgu"cpf 'Gzej cpi g"Dqctf"qh'Kpf kc"oUGDK6+"pqt" 'qgu"UGDK6 wctcpvgg"yi g"cewtce{"qt"cf gs wce{"qh'yi ku'Ftch/Rtqur gewu0Ur gekhle" cwgpdqp"qli'd g'lpxguqtu'lu'lpxlagf '\q'd g'lugedqp''langf "-ThonHeenftus'dgi lpplpi "qp'r ci g''46'qli'd ku'F teln'Rtqur gewu0'

KUMGTøUCDUQNWG'TGURQPUDINIS/[

Qwt"Eqorcp{."jcxkpi"ocfg"cmtgcuqpcdrg"kpswktkgu"ceegrwtgurqpuklkkk{"hqt"cpf"eqphktou"vjcv'vjku"Ftch/"Rtqurgewu"eqpvckpu"cmtlphqtocvkqp"ykj"tgictf"vq"qwt" Eqorcp{"cpf"vjg"Kuwg"yjkej"ku'ocvetkcn'kp"vjg"eqpvgzv'qh'vjg"kuwg."vjcv'vjg"kphqtocvkqp"eqpvckpgf"kp"yjku'Ftchv'Rtqurgewu'ku'vtwg'cpf"eqttgev'kp'cm'ocvetkcn'curgevu'cpf"ku'pqv'okurgefkpi"kp"cp{"ocvetkcn'tgurgev."vjcv'vjg"qrkpkqpu'cpf"kpvgpvkqpu'gzrtguugf"jgtgkp"ctg"jqpguvn("jgf"cpf"vjcv'vjgtg"ctg"pq"qvjgt"kcevu."vjg"qokunkqp"qh"yjkej"ocngu'vjku'Ftchv'Rtqurgewu'cu'c'yjqrg'qt'cp{"qh'uwej"kphqtocvkqp"qt'vjg"gzrtguudqp"qh'cp{"uwej"qrkqpu'qt'kpvgpvkqpu'okurgefkpi."kp"cp{"ocvetkcn'tgurgev0"

NKUVKPI

Vj g'Gs wkk{ "Uj ctgu'kunwgf ''y tqwi j ''y g'Rtqur gewu'ctg''t tqr qugf ''vq'dg'ikungf ''qp''y g'UO G'Rrcvhqto ''qhi'DUG'Nlo kgf 0'Qwt'Eqo r cp{ 'j cu'tgegkxgf "-kp/r tkpekr ngø'cr r tqxcnu" htqo ''DUG'hqt''y g'hkunkpi ''qhi'y g'Gs wkx{ ''Uj ctgu'r wtuwcpv'vq ''ngwgtu'f cvgf ''] __0Hqt''y g'' kurvqugu'qh''y g''Kurwg. ''y g'F guki pcvgf ''UvqeniGzej cpi g''uj cmidg'DUG'Nlo kgf 0'' \\ \NGCF'O CPCI GT'VQ'VJ G'RUWG'' \\ \TGI RVTCT'VQ'VJ G'RUWG'' \\ \TGI RVTCT'VQ'VJ G'RUWG''

GRE EX.

I TGVGZ'EQTRQTCVG'UGTXIEGUNKO KVGF"

C/623. 'Hnqqt'by'. 'Rnqv'HR/838.'*RV+'P co cp'O kf vqy p. 'Ugpcr cvk'Dcr cv'O cti .'P gct'' Kpfkcdwmu."Fcfct"*y +:"Fgrkurg"Tqcf."Fgrkurg"Tqcf."Owodck"Ocjctcuj vtc."Kpfkc." 6222350'

VgrlPq0<!; 3"; 8754"6; : 85" Gockan≺kphqBitgygzitqwr0eqo" Y gdulsg<'y y y 0 tgvgzeqtrqtcvg0eqo'' Eqpwev'Rgt uqp<0 t0Ctxkpf "J ctrcmc" $\textbf{UGDKT gi kuxt c vkqp'P q < KP} \odot 222234399''$ **EIP**<N96; ; ; O J 422: RNE4: : 34: "



DN UJ CTG'UGTXÆGURTKXCVG'NKO KVGF'''

U8/4."8^{ij} "Rkppcerg"Dwukpguu"Rctm"O cj cmcrk"Ecxgu"Tqcf."pgzv'vq"Cj wtc"Egpvtg." Cpf j gtk'Gcuv."O wo dck'"6222; 5."O cj ctcuj vtc."Kpf kc"

VgdPq0k-; 3"6"44"6"8485": 422**="Hcz"Pq0k**-; 3"6"44"6"8485": 4; ; ""

G/o chrkrqB dki uj ctgqprkpg@qo "

Kpxgunqt'I tlgxcpeg'G/o clrc'lpxgunqtB dki uj ctgqprlpg@qo "Y gdukg-y y y (liki uj ctgqprlpg@qo "

Eqpwev'Rgt uqp<'O t0'Xkpc {cm'O qtdcrg''' **UGDKT gi kmt cvkqp'P q0**5'RP T2222235: 7" **EIP**<W; ; ; ; ; OJ 3; ; 6RVE298756"

KUWG'RTQI TCO O G

KUWG'QRGPU'QP<] _'' KUWG'ENQUGU'QP<] _''



VCDNG'QH'EQP VGP VU''
UCEVIQP'KI GPGTCNUIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII
F GHIP KVKQP U'CP F 'CDDT GXKCVKQP Ummmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmm
EGTVCKP'EQPXGPVKQPU'WUG'QH'HKPCPEKCN'KPHQTOCVKQP'CPF'OCTMGV'FCVC'CPF''
EWTTGPE['QH'HRPCPEKCN'RTGUGPVCVKQP (MMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM
HQTY CTF'NQQMRPI 'UVCVGO GPVU'000000000000000000000000000000000000
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QWT'J KVQT['CPF'EGTVCR'QVJ GT'EQTRQTCVG'O CVVGTU(000000000000000000000000000000000000
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O CPCI GO GPVøUFKÆWUUKQP'CPF'CPCN UKUQH'HKPCPEKCN'EQPFKVKQP'CPF''TGUWNVUQH'
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QWWUVCPF IPI 'NKVH CVKQPU'CPF'O CVGT ICN'F GXGNQRO GP VU'000000000000000000000000000000000000
I QXGTPO GPV'CPF'QVJ GT'UVCVWQT['CRRTQXCNU000000000000000000000000000000000000
QWT'I TQWR'EQO RCPKGU'(IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII
QVJ GT'TGI WNCVQT['CPF'UVCVWQT['FKENQUWTGUUMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM
UGEVKP 'ZK'KUWG'TGNCVGF 'R'HQTO CVKP '000000000000000000000000000000000000
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KUWG'UVT WE VWT G'000000000000000000000000000000000000
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TGUVTÆVKQPUQP'HQTGK P'QY PGTUJ KR'QH'KPFKCP'UGEWTKVKGU'''''''''''''''''''''''''''''''''''
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'UGEVKQP'KKI GPGTCN''

FGHIP KVKQPU'CPF'CDDTGXKCVKQPU'

Vj ku'F tch'Rt qur gewu'wugu'egt vchp'f ghlpkkqpu'cpf 'cddt gxkcvkqpu''y j kej .'\wprguu'\yj g'eqpvgzv'qvj gt y kug'kpf kecvgu'qt 'ko rnkgu."
uj cm'j cxg''yj g''o gcpkpi "cu''rtqxkf gf "dgrqy 0'T ghgt gpegu'\q"cp{"rgi kurcvkqp."cev."t gi wrcvkqp."t wrgu."i wlf grkpgu''qt "rqnkekgu"
uj cm'dg'\q''uwej 'rgi kurcvkqp."cev."t gi wrcvkqp."t wrgu."i wlf grkpgu''qt "rqnkekgu."cu'co gpf gf. "uwr rngo gpvgf "qt "t g/gpcevgf 'ht qo "
vlo g'\q''vlo g''cpf ''cpf ''t ghgt gpeg'\q''c ''ucwwqt { "rtqxkukqp"uj cm'kpenvf g''cpf ''uwdqtf kpcvg''ngi kurcvkqp''o cf g'ht qo ''vko g''\q''vlo g''
wpf gt '\j cv'rtqxkukqp0'

Vj g'y qtf u'cpf "gzrt guukqpu'wugf "kp" ij ku'F tch'Rt qur gewu'dwv'pqv'f ghkpgf "j gt gkp" ij cnt'j cxg. '\q'' ij g"gzvgpv'crrhecdng. '\j g" o gcpkpi "cuet kdgf "vq" uwej "vgt o u" wpf gt "vj g"Eqo r cpkgu" Cev. "vj g" UGDK' *KEFT+"T gi wrc kqpu. "vj g" UETC. "vj g" Nkukpi "T gi wrc kqpu "vj g"F gr qukqt kgu'Cev'qt '\j g"Twngu'cpf "T gi wrc kqpu'o cf g'\j gt gwpf gt 0""

Pqw kj uccpf kpi "vj g"lqt gi qkpi ."vgt o u"wugf "kp"qhl'vj g"ugeskqpu"õ Uccvgo gpv'qhl'Rquukdrg"Vcz "Dgpghkviö."õ Hkpcpekcnl' Uccvgo gpvu'cu'T guocvgf ö."õ O ckp 'Rt qxkulqpu'qhl Ct vkergu'qhl Cuuqekcvkqp ö."õ Dc uku'hqt 'Kuuwg'Rt kegö."õ Qwt 'I kaqt { 'cpf '' Egt vckp ''Eqt r qt cvg''O cwgt uö."õ Qvj gt ''T gi wrc vqt { ''cpf ''Uccwvqt { ''F kuerquwt guö" cpf "õ Qwvuccpf kpi ''Nkki cvkqpu''cpf '' O cvgt kc nF gxgqq o gp vuö"qp"r ci gu'9; ."359."442."96."336."387"cpf "376"t gur gevkxgq!."uj cnlj cxg'vj g"o gcpkpi "cuet kdgf "vq" uwej "vgt o u'kp"vj g't grgxcpv'ugevkqp0'

I GPGTCN'VGTOU'

Vgto "	F guet kr vkqp''
õEqo r cp{ö."õqwt"Eqo r cp{ö."	Cuuqekcygf "Eqcygtu" Nko kygf "*Inqto gtn("mpqy p"cu"Cuuqekcygf "Eqcygtu"Rtkxcyg"
õy g"Eqo r cp { ö. "õy g" Kunngtö."	Nkok ygf +:"c"r wdnke "nkok ygf "eqorcp { "kpeqtrqtc ygf" kp" Kpfkc" wpfgt" yjg" Eqorcpkgu" Cev."
õCuuqekcygf" Eqcygtuö" qt"	4235" j cxkpi "kwu'tgi kungtgf "qhhkeg" cv' Cuj wkk' Mj cpdgtkc" O cj guj vcnc" NR" 421: 5168."
õCENö"	Xkxgmcpcpf cr wt. 'Uqwj '46'Rcti cpcu. 'Vj cmwtr wmvt'O cj guvqrc. 'Mqmcvc'922363. 'Y guv'
	Dgpi cn'Kpf kc0'
Rtqo qvgt*u+"1"Eqtg"Rtqo qvgt"	Lci lk/Ukpi j 'F j kmpp'cpf 'P cxpggv'McwtC '
Rtqo qvgt'I tqwr''	Uwej "r gtuqpu."gpvkkgu"cpf "eqo r cpkgu"eqpuvkwkkpi "qwt"r tqo qvgt"i tqwr "r wtuwcpv"vq"
	Tgi wrcvkqp"4*3+"*rr+"qh"vjg"UGDK"*NEFT+"Tgi wrcvkqpu"cu"fkuenqugf"kp"vjg"Ejcrvgt"
	vkngf "õ <i>Qwt 'Rt qo qvgt u'c pf 'Rt qo qvgt 'I t qwr</i> ö'qp'r ci g'353 'qh'vj ku'F t chv'Rt qur geww0'

EQORCP['TGNCVGF'VGTOU'

Vgto "	Fguet kr vkqp''
CQC" 1" Ctvkergu" 1" Ctvkergu" qh'	Wprguu" yj g" eqpvgzv" qyj gty kug" tgs wktgu." tghgtu" vq" yj g" Ctvkergu" qh" Cuuqekcvkqp" qh"
Cuuqekcvkqp"	Cuuqekcygf "Eqcygtu'Nlo kygf."cu''co gpf gf 'htqo ''vko g''vq ''vko g0'
Cwf k/Eqo o kwgg"	Cwf kv"Eqo o kwgg"qh"qwt"Eqo r cp{"eqpuvkwwgf "kp"ceeqtf cpeg"Ugevkqp"399"qh"vj g"
	Eqorcpkgu"Cev."4235"cpf"cu"f guetkdgf"kp"vjg"ejcrvgt"vkvrgf"õ <i>Qwt'Ocpci gogpv</i> ö"
	dgi kppkpi "qp"r ci g"339"qh'yj ku"F tchy'Rtqur geww0"
Cwf kqt" qh" qwt" Eqo r cp{" 1"	Vjg"Ucwwqt{"Cwfkqtu"qh"qwt"Eqorcp{."dgkpi"Olu0'IOR"Cuuqekcvgu."Ejctvgtgf"
Ucwwqt{'Cwfkqt"	Ceeqwpvcpvu'j qrf kpi "c'xcrkf" r ggt 't gxkgy "egt vkhkecvg" cu'o gpvkqpgf 'kp' vj g'ugevkqp' vkurgf"
	õ l gpgtcdKphqto ckkqp ö'dgi kppkpi ''qp''r ci g''6: ''qh''yi ku'Ftchv'Rtqur gewu0'
Dcpngt 'vq'qwt'Eqo r cp{"	Kpf kcp"Dcpm"cu"f knerqugf "kp" yj g"ugevkqp" vknrgf "õ <i>I gpgt cn Kphqt o cvkqp</i> ö"dgi kppkpi "qp"
	r ci g'6: "qh'\'y ku'F tch\'Rtqur geww0'
Dqctf" 1"Dqctf "qh"F ktgevqtu" 1"	Vj g'Dqctf "qh"Fktgevqtu"qh"qwt"Eqorcp{."kpenwfkpi "cm"fwn("eqpuvkwwgf"Eqookwggu"
Qwt'Dqctf"	yj gtgqh0'Hqt"hwtyj gt"f gvcknu"qh"qwt"f ktgevqtu."r ngcug"tghgt"vq"ej cr vgt"vkungf "õ Q w t''
	O cpci go gpvö'dgi kppkpi "qp"r ci g"339"qh'yj ku"F tchv'Rtqur gewu0"
EIP "1"Eqtrqtcvg"Kfgp\lhecvlqp"	W4: 34; Y D4239RNE446223"
P wo dgt"	
Ej kgh'Hkpcpekcn'Qhhkegt"l'EHQ"	Vjg"Ejkgh"Hkpcpekcn"Qhhkegt"qh"qwt"Eqorcp{"cu"ogpvkqpgf"kp"vjg"ejcrvgt"vkvngf"
	õ l gpgtcnlkphqto cvkqp ö'dgi kppkpi ''qp''r ci g''6: ''qh''yi ku'Ftchv'Rtqur gewu0'
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Eqornlcpeg'Qhhlegt"	yjg" ejcrygt" vkwngf" õ l gpgtcn' Kphqtocwlqp ö" dgikppkpi" qp" rcig" 6: "qh" yjku" Ftchw"
	Rtqur gewu0'
Fktgevqt*u+"1"qwt"Fktgevqtu"	Fktgevqt*u+"qh"qwt"eqorcp{"wpnguu"qyjgtykug"urgekhkgf"
F gr qukqtkgu'Cev'	Vj g'F gr qukqtkgu'Cev.'3; ; 8. "cu"co gpf gf "Itqo "\ko g"\q \\ko g"
F gr qukqt kgu"	Pcvkqpcn"Ugewtkvkgu"Fgrqukvqt{"Nkokgf"*PUFN+"cpf"Egpvtcn"Fgrqukvqt{"Ugtxkegu"
	*Kpf kc+'Nko kgf ''*EF UN+0'
Gs wkv{ "Uj ctgu"1"Uj ctgu"	Vj g"gs wkx{ "uj ctgu"qh"qwt"Eqorcp{"qh"lceg"xcnwg"qh" "32022"gcej "wpnguu"qyj gty kug"
	ur gekhkgf 'kp''yj g'eqpvgzv'yj gtgqh0'



Vgto "	Fguet kr vkqp"
Gs wkv{" Uj ctgj qrf gtu" 1"	Rgtuqpu"l"Gpvkkgu"j qrf kpi "Gs wkv{ "Uj ctgu"qh"vj g"Eqo r cp{ ""
Uj ctgj qrf gtu"	
Hkpcpekcn" Uvcvgo gpvu" cu" Tguvcvgf"	Vjg" hkpcpekcn" kphqtocvkqp" qh" vjg" Eqorcp{" yjkej" eqortkugu" qh" vjg" Tguvcvgf" Ucvgogpv'qh"Cuugvu''cpf" "Nkcdknkkgu''cu''cv'rgtkqf"gpfgf"qp"Ugrygodgt"52."4245"cpf"
	Hoppeken getu gpf gf 'qp'Octej '53.'4245.'4244'cpf '4243.''y g'Tguvcvgf 'Ucvgo gpv'qh'
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	y g"tgrcvgf" pqvgu. "uej gfwrgu"cpf" cppgzwtgu" y gtgvq" kpenwfgf" kp" y ku"Ftch / Rtqur gewuu." y j kej 'j cxg"dggp" rtgrctgf" kp"ceeqtfcpeg" y kaj "y g"Eqorcpkgu" Cev. 'Kpfkcp" I CCR. 'cpf" tguvcvgf" kp"ceeqtfcpeg" y kaj "y g"UGDKKEFT" Tgiwrcvkqpu0'
I tqwr 'Eqo r cpkgu'' l'Gpvkvkgu''	Uwej "eqo r cpkgu" I"gpvkkgu" cu "eqxgtgf" wpfgt "vjg" crrrkecdrg" ceeqwpvkpi "uvcpfctfu" cpf"
	uwej "qvjgt"eqorcpkgu"cu"eqpukfgtgf"ocvgtkcn"d{"vjg"Dqctf0Hqt"fgvcknu"qh"qwt"Itqwr"
	Eqorcpkgu'l'gpvkkkgu.'r ngcug't ghgt 'ö <i>Qwt'l tqwr'Eqorcpkgu</i> ö'qp'r cig'386'qh'vjku'Ftchv' Rtqurgewu0'
Kpf kcp''I CCR'''	I gpgtcm("Ceegr vgf 'Ceeqwp vkpi 'Rt kpekr rgu'kp'Kpf kc0""
Kpf gr gpf gpv'F ktgevqtu'"'	Kpf gr gpf gpvl'f kt gevqtu"qp" yj g"Dqctf. "cpf "grki kdrg" vq"dg"cr r qkpvgf "cu"cp"kpf gr gpf gpv"
	fktgevqt"wpfgt"vjg"rtqxkukqpu"qh"Eqorcpkgu"Cev"cpf"UGDKNkukpi"Tgiwncvkqpu0Hqt"
	f gycknu"qh"vj g"Kpf gr gpf gpv"F ktgevqtu."r ngcug"t ghgt "ej cr ygt "vkyngf " δQ wt ' O c p c i go gp $\psi $ "'
	dgi kppkpi "qp"r ci g"339"qh'\j ku"F tchv'Rtqur gewu0"
KUKP "	Kpvgtpcvkqpcn'Ugewtkskgu'Kfgpvkhlecvkqp'P wo dgt."dgkpi "KPG2TKS23235"
Mg{"O cpci go gpv'Rgtuqppgn'1"	Mg{ 'O cpci gtkcnRgtuqppgn'qh'qwt 'Eqo r cp{ 'lp'\gto u'qh'\j g'Eqo r cpkgu'Cev.'4235'cpf "
MO R"	Tgi wrcvkqp"4*3+"*tdd+"qh''y g"UGDK*NEFT+"Tgi wrcvkqpu"423: "cpf "Ugevkqp"4*73+"qh''y g"
	Eqo r cpkgu" Cev." 42350' Hqt" f gycknı." ugg" ugevkqp" gpykngf " õ <i>Qwt'' O cpci go gp v</i> ö"
O cyntledd "Pade ("	dgi kppkpi "qp"r ci g"339"qh'\j ku"F tchv'Rtqur gewu.0" Vj g"r qrke{ "qp"kf gpvkhecvkqp"qh"I tqwr "Eqo r cpkgu. "O cvgtkcn"Etgf kqtu"cpf "O cvgtkcn"
O cvgt kcrkv{ "Rqrke{"	Nkki cykqp."cf qr vgf "d{"qwt"Dqctf "qp"F gego dgt"44."4245"kp"ceeqtf cpeg"y kyj "vj g"
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OqC" 1" Ogo qtcpf wo "qh'Cuuqekcvkqp'"	Vj g'O go qtcpf wo "qh'Cuuqekc\kqp"qh'qwt"Eqorcp{."cu"cogpf gf 'htqo '\kog'\q'\kog"
P qo kpcvkqp" ("Tgo wpgtcvkqp" Eqo o kwgg"	Vj g"Pqo kpcklqp"cpf"Tgo wpgtcklqp"Eqo o kwgg"qh"qwt"Eqo rcp{"eqpurkwwgf"kp"ceeqtfcpeg'y kjj "Ugeklqp"39: "qh'\j g"Eqo rcpkgu'Cev."4235."cu'f kuerqugf 'kp'\j g"ej cr vgt"
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TqE"I'Tgi kuxtct"qh"Eqo r cpkgu"	Tgi kıntet 'qh'Eqo r epkgu. 'Mqmeve0'
Ugpkqt 'O cpci go gpv'	Vj g"qhhegtu"cpf "r gtuqppgn"qh"vj g"kuwgt"y j q"ctg"o go dgtu"qh"ku"eqtg"o cpci go gpv"
espirate of period Sp.	gco ."gzenwf kpi "yj g"Dqctf "qh"F ktgevqtu."cpf "uj cm'cnnq"eqo r tkug"cm'yj g"o go dgtu"qh"
	y g"o cpci go gpv'qpg"rgxgri'dgrqy "y g"Ej kgh'Gzgewkxg"Qhhkegt "qt"O cpci kpi "F ktgevqt"
	qt" Yjqng" Vkog" Fktgevqt" qt" Ocpcigt" *kpenwfkpi" Ejkgh" Gzgewkxg" Qhhkegt" cpf"
	O cpci gt. "kp"ecug" yi g{ "ctg"pqv'r ctv'qh' yi g"Dqctf "qh'F ktgevqtu+"cpf "uj cm'ur gekkecm{ "
	kpenwfg"vjg"hwpevkqpcn"jgcfu."d{"yjcvgxgt"pcog"ecngf"cpf"vjg"Eqorcp{"Ugetgvct{"cpf"vjg"Ejkgh"Hkpcpekcn"Qhhkegt0"
Uvengj qrf gtuø' Tgrevkqpuj kr''	Vjg" Uvcmgj qnfgtøu" Tgncvkqpuj kr" Eqookvygg" qh" qwt" Eqorcp{" eqpuvkvwyf" kp"
Eqo o kwgg"	ceeqtf cpeg"y kyj "Ugevkqp"39: "qh"Eqo r cpkgu"Cev."4235"cpf "cu"f guetkdgf "wpf gt" yj g"
	ej cr vgt "kurgf "õ <i>Qwt 'O cpci go gp v</i> ö"dgi kppkpi "qp"r ci g"339"qh"vj ku"F tchv"Rtqur gewuu0"
Uvqen'Gzej cpi g"	Wprguu''y g''eqpygzv'tgs wktgu''qyj gty kug. 'tghgtu''vq. ''yj g''UO G''Rrcvhqto ''qhi'DUG''Nko kgf 0'
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RUWG'TGNCVGF'VGTO U''

Vgto "	F guet kr vkqp"
Cdtlf i gf 'Rtqur gewu'"	Cdtkfigf"Rtqurgewu''vq"dg"kuuwgf"wpfgt"Tgiwrcvkqp"477"qh"UGDKKEFT"Tgiwrcvkqpu"cpf"crrgpfgf"vq"vjg"Crrnkecvkqp"Hqto0"
Cenpqy ngf i go gpv'Urkr "	Vj g'unkr ''qt 'Fqewo gpv'kuuwgf ''d { ''yj g'Fguki pcvgf 'Kpvgto gfkct { ''vq''cp''Crrnkecpv'cu'rtqqh''qh'j cxkpi ''ceegrvgf ''yj g''Crrnkecvkqp''Hqto 0'
Cmqecvkqp" 1" Cmqecvkqp" qh" Gs wkv{ "Uj ctgu"	Wprguu''y g''eqpvgzv'qy gty kug'tgs wktgu.''y g''cmqvo gpv'qh''y g''Gs wkv{ ''Uj ctgu''r wtuwcpv''vq'' y g''Kuwg0'
Cmqv'I'Cmqvo gpv'I'Cmqwgf '"'	Wpnguu'yi g'eqpygzy'qyi gty kug'tgs wktgu. "cmqvo gpy'qh'yi g'Gs wkv{ 'Uj ctgu'r wtuwcpy'vq'yi g'' Kuuwg''qh'Gs wkv{ 'Uj ctgu'vq'yi g''uweeguuhwn'Crrnlecpyu0'
Cmqwgg*u+"	C''uweeguuhwn'Crrnkecpv*u+''vq''y j qo ''vj g'Gswkv{ ''Uj ctgu''ctg''dgkpi ''1'j cxg''dggp''cmqwgf ''



Vgto "	Fguet kr vkpp''
Crrnlecpv'l'lfpxguvqt"	Cp{"rtqurgevkxg"kpxguvqt"yjq"ocngu"cp"crrnkecvkqp"rwtuwcpv"vq"yjg"vgtou"qh"yjg"Rtqurgewu"cpf "yjg"Crrnkecvkqp"Hqto0"
Crrnkecvkqp"	Cp"kpf kecklqp"vq"ocng"cp"crrnkecklqp"fwtkpi"vjg"Kuwg"Rgtkqf"d{"cp"Crrnkecpv"rwtuwcpv'vq'uwdokuukqp"qh'Crrnkecklqp"Hqto."vq"uwduetklg"hqt"qt"rwtejcug"qwt"Gswks{"Ujctgu"cv"vjg"Kuwg"Rtkeg"kpenwfkpi"cm"tgxkukqpu"cpf"oqfkhkecklqpu"vjgtgvq."vq"vjg"gzvgpv'rgtokuukdng"wpfgt"vjg"UGDK*KEFT+"Tgiwcvkqpu"
Crrnlecwlqp"Hqto"	Vj g"Hqto "kp" vgto u"qh" y j kej "vj g"crrnkecpv" uj cm"crrn("hqt" vj g"Gs wkw{"Uj ctgu"qh" vj g" Eqorcp{0"
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CUDC" Crrnkecvkqp" 1" Crrnkecvkqp"	Cp"crrnlecvkqp"hqto."yjgyjgt"rj{ukecn'qt"gngevtqpke."wugf"d{"CUDC"Crrnlecpwu"yjkej"ykn'dg"eqpukfgtgf"cu'yjg"crrnlecvkqp"hqt"Cmqvogpvkp"kgtou'qh'yjg"Rtqurgewu0'
Dcpngtu'\q'\j g'Eqo r cp{"	Uwej "dcpmu"y j kej "ctg"f kuenqugf "cu"Dcpmgtu"vq"qwt"Eqorcp{"kp"yjg"ejcrvgt"vkurgf "õll gpgtcnlkphqtocvkqpö"qp"rcig"6: "qh'yjku'Ftchv'Rtqurgeww.0"
Dcpngtu"vq"yj g"Kuwg"1"Tghwpf " Dcpngt"	Vj g"dcpmu"y j kej "ctg"Engctkpi "O go dgtu"cpf "tgi kuxgtgf "y ksj "UGDKcu"Dcpmgt "xq"cp" Kuxwg'y ksj "y j qo "xj g"Guetqy "Ci tggo gpv'ku"gpvgtgf "cpf "kp"yj ku"ecug"dgkpi "] _0""
Depngtu" vj g" Kuwg" Ci tggo gpv"	Dcpm'y j kej "ku"c"engctkpi "o go dgt"cpf"tgi kungtgf"y kaj "UGDK'cu"Dcpngt"vq"vj g"Kuung" cpf "y kaj "y j qo "vj g"Rvdnke"Kuung"Ceeqwpv'y kni'dg"qr gpgf ."kp"vj ku"ecug"dgkpi "] _0"
Dcuku'qh'Cmqvo gpv'''	Vj g"dcuku"qp"y j kej "vj g"Gs wkv{"Uj ctgu"y km'ldg"Cmqwgf "vq"uweeguuhwn'Cr r nkecpvu"wpf gt" vj g"Knuwg."f guetkdgf "kp"õ <i>Knuwg'Rt qegf wt g</i> ö"qp"r ci g"3: 8"qh"vj ku"F tchv'Rt qur gewu"
Dtqngt 'Egpvtgu''	Dtqngt "egpvtgu" pqvkhkgf "d{"y g"UqemGzej cpi gu."y j gtg"y g"Crrnkecpvu" ecp" uwdo kv"y g"Crrnkecvkqp" Hqto u"vq" c"Tgi knvgtgf "Dtqngt0" Vj g"f gvcknu" qh" uwej "dtqngt "egpvtgu. "cmpi "y kyj "y g"pco g"cpf "eqpvcev" f gvcknu" qh" y g"Tgi knvgtgf "Dtqngtu. "ctg" cxckrcdrg" qp" y gdukg" qh" y g"DUG" Nko kgf "qp" y g"hqmqy kpi "hpm" y y 0lugkpf kc0eqo"
DUG'UO G'"	UO G'Rrcvhqto "qh'DUG'Nko kygf"
Dwukpguu'Fc{"	O qpf c{"\q"Htkf c{"\gzegr v'r wdrke"j qrkf c{u+"
ECP" I" Eqphkto cvkqp" qh" Cmqecvkqp"Pqvg"	Eqphto cvkqp"qh"Cmqecvkqp"Pqvg"I"vjg"pqvg"qt"cfxkeg"qt"kpvkocvkqp"qh"Cmqvogpv."ugpv"vq"gcej"uweeguuhwn"Crrnkecpv"yjq"jcu"dggp"qt"ku"vq"dg"Cmqwgf"vjg"Gswkv{"Ujctgu"chvgt"crrtqxcn"qh"vjg"Dcuku"qh"Cmqvogpv"d{"vjg"Fgukipcvgf"Uvqen"Gzejcpig0"
Ektewictøu" qp" Utgco rkpkpi "qh" Rwdrke "Kuwgu"	Ektewrct "*EKT IEHF IRQNKE[EGNN133 H237+"f cvgf "P qxgo dgt"32."4237"co gpf gf "d{" ektewrct" "VGDKI QIEHF IF KN4 IEKT IRH23: 135: +"f cvgf "P qxgo dgt"3."423: ."ektewrct" "VGDKI QIEHF IF KN4 IEKT IRH23; 172+" f cvgf " Cr tkit" 5." 423; ." ektewrct " "VGDKI QIEHF IF KN4 IEKT IRH23; 198+" f cvgf " Lwpg" 4: ." 423; ." ektewrct " "VGDKI QIEHF IF KN4 IEKT IRH23; 155+" f cvgf " Lwn{" 48." 423; " cpf " ektewrct " "VGDKI QIEHF IF ET4 IEKT IRH23; 1355+" f cvgf " P qxgo dgt": ." 423; " cpf " cp{" uvdugs wgpv'ektewrctu'kniwgf "d{"UGDKIp''j ku'tgi ctf 0""
Enlgpv'KF"	Enlgpv'lif gpvlhlecvlqp"pwo dgt"qh'vj g"Crrnlecpv/u"dgpghlekct { "ceeqwpv"
Eqmgeskpi "Fgrqukkqt{"Rctskekrcpv'qt'EFR'''	C'f gr qukqt{"r ctvkekr cpv'cu'f ghkpgf "wpf gt" yj g'F gr qukqtkgu'Cev."3; ; 8. 'tgi knygtgf" y kj " UGDK'cpf" y j q"ku" grki kdrg" vq" r tqewtg"Crrrkecvkqp" Hqto u"cv' yj g"F guki pcvgf "EFR" Nqecvkqpu'kp" gto u'qh'ektewrt 'pq0ITT IEHF IRQNKE[EGNNI3314237 'f cvgf' P qxgo dgt" 32. '4237 'kunwgf' 'd{ 'UGDKO'
Eqpvtqmkpi " Dtcpej gu" 1" Eqpvtqmkpi " Dtcpej gu" qh" yj g" UEUDu0'	Uwej "dtcpej gu"qh" yi g"UEUDu" y j kej "eq/qtf kpcvg"Crrnkecvkqp" Hqto u"d {" yi g"CUDC" Crrnkecpvu" y kaj "yi g"T gi kuntct" vq" yi g"Knuwg" cpf "Uvqem" Czej cpi gu"cpf "c"nkun vqh" y j kej "ku" cxckrcdng" cv" y w dly y y 0ugdk0l qx0up" qt" cv'uwej "qyi gt" y gdukkg" cu" o c {"dg" rtguetkdgf" d {"UGDK htqo" vko g" vq" vko g0""
F go qi tcr j ke'F gvcknı''	Vjg'fgoqitcrjke''fgvcknu''qh''vjg''Crrnkecpvu''uwej''cu''vjgkt''Cfftguu.''RCP.''Qeewrcvkqp''cpf''Dcpm'Ceeqwpv'fgvcknu''cpf''WRKKF'yjgtgxgt''crrnkecdng0'
F gr qukqt { "I"F gr qukqt kgu"	C"f gr quksqt{"tgi kuvgtgf"y kij "UGDKwpf gt"vj g"UGDK*F gr quksqtkgu"cpf "Rctvkekr cpvu+" Tgi wrcvkqpu."3;;8"
Fgrqukqt{"Rctvlekrcpv"1"FR"	C'f gr qukqt { 'r ct vlekr cpv'cu'f ghlpgf 'wpf gt 'vj g'F gr qukqt kgu'Cev'
Fguki pcvgf "EFR"Nqecvkqpu"	Uwej "nqecvlqpu"qh"vj g"EFRu"y j gtg"Crrnlecpvu"ecp"uwdo kv"vj g"Crrnlecvlqp"Hqto u"vq" Eqngevlpi "Fgrqukqt{"Rctvlekrcpvu0"Vj g"fgvckru"qh"uwej "Fguki pcvgf"EFR"Nqecvlqpu."



Vgto "	Fguet kr vkqp"
	cnipi "y kaj "pco gu"cpf "eqpvcev"f gvcknu"qh" yi g"Eqnngevkpi "F gr qukxqt { "Rctvkekr cpvu" grki kdng" vq"ceegr v"Cr r nkecvkqp"Hqto u"ctg"cxckncdng"qp" yi g"y gdukkg"qh" yi g"Uvqeni' Gzej cpi g'*y y y (dlugkpf kc@qo +"
Fguki pcvgf 'Fcvg''	Vj g'f cvg'qp'y j kej 'tgngxcpv'co qwpw'ctg'vtcpuhgttgf 'htqo 'vj g'CUDC'Ceeqwpw'vq'vj g'' Rwdrke'Knuwg'Ceeqwpv'qt'vj g'Tghwpf 'Ceeqwpv'cu'vj g'ecug'o c{ 'dg. 'cpf 'vj g'kpuntwevkqpu'' ctg''knuwgf "vq'vj g''UEUDu''*kp''ecug''qh'TKki''wukpi "WRK'O gej cpkno ."kpuntwevkqp''knuwgf "vj tqwi j 'vj g''Ur qpuqt'Dcpm+'hqt'vj g''tcpuhgt''qh'co qwpw''dqnengf 'd{ 'vj g''UEUDu'kp'vj g'' CUDC'Ceeqwpvu'vq'vj g'Rwdrke'Knuwg'Ceeqwpv'qt'vj g'Tghwpf 'Ceeqwpv''cu'vj g'ecug'o c{ 'dg. 'kp'vgto u'qh'vj g''Rtqur gewu'hqnqy kpi 'vj j kej 'Gswkv{ 'Uj ctgu'y kn'dg'Cmqwgf 'kp'vj g'' KnuwgO'
F guki pcvgf "Kpvgto gfkctkgu" I" Eqnngevkpi "Ci gpv"	Kp"tgrcvkqp"vq"CUDC"Hqto u"uwdo kwgf"d{"TKKu"cwwj qtkukpi "cp"UEUD"vq"drqem'vj g"Crrrkecvkqp"Co qwpv'kp"vj g"CUDC"Ceeqwpv."Fguki pcvgf "Kpvgto gfkctkgu"uj cm'o gcp"UEUDu0""
	Kp'tgrcvkqp'vq'CUDC'Hqto u'uwdo kwgf'd{'TKKu'y j gtg'vj g'Crrrkecvkqp'Co qwpv'y kn'dg'' dnqengf" wrqp" ceegr wpeg" qh'' WRKO cpf cvg" Tgs wguv'd{"uwej "TKK wukpi "vj g" WRK'O gej cpkuo ." F guki pcvgf" Kpvgto gf kctkgu" uj cm' o gcp" u{pf kecvg" o go dgtu." uwd/u{pf kecvg"o go dgtu."Tgi knvgtgf "Dtqngtu."EF Ru'cpf 'TVCu0""
	Kp'tgrcvkqp'vq'CUDC'Hqto u'uwdo kwgf'd{'S KDu'cpf'P KDu.'F guki pcvgf'Kpvgto gf kctkgu' uj cm'o gcp'UEUDu.'u{pf kecvg'o go dgtu.'uwd/u{pf kecvg'o go dgtu.'Tgi kuvgtgf'Dtqngtu.'' EF Ru'cpf'TVCu0'
F guki pcvgf " O ctngv' O cngt" 1" O ctngv'O cngt"	Kp'qwt'ecug.'I tgvgz'Uj ctg'Dtqmkpi 'Nko kxgf'j cxkpi 'kwt'tgi kwytgf'qhhkeg'cv'C/623.'Hmqqt" 6 ^{ij} "Rmqv'HR/838."*RV+."P co cp"O kf vqy p."Ugpcr cvk'Dcr cv'O cti ."P gct"Kpf kcdwm." F cf ct'*y +:"F grkurg'Tqcf.'F grkurg'Tqcf.'O wo dck/622235.'O cj ctcuj vtc.'Kpf kc0'
F guki pevgf "TVC"Nqeevkqpu"	Uwej "nqecvkqpu"qh''y g'TVCu'y j gtg"Crrnkecpvu"ecp"uwdo kv''y g'Crrnkecvkqp"Hqtou''vq" TVCu0Vj g'f gwknu'qh'uwej 'F guki pcvgf "TVC"Nqecvkqpu. "cmpi 'y kaj 'pco gu'cpf 'eqpwcev' f gwknu'qh'y g'TVCu'gnki kdng''q 'ceegr v'Crrnkecvkqp"Hqtou''ctg''cxckncdng''qp''y g'y gdukkg'' qh'y g'Uvqem'Gzej cpi g'*y y y 0dugkpf kc0eqo +0"'
F guki pcvgf "UEUD"Dtcpej gu"	Uwej "dtcpej gu"qh" vjg "UEUDu" vjkej "ujcm" eqmgev' vjg "Crrnkecvkqp" Hqto u. "c"nkuv'qh" vjkej "ku"cxckncdng"qp" vjg" ygduk g"qh" UGDK" cv'j wr⊲ly y 0ugdk0l qx0 op l"qt" cv'uwej "qvjgt" ygduk g"cu"oc{"dg"rtguetkdgf" d{"UGDK htqo" vkog" vq"vkog0'
F guki pcvgf "Uvqem"Gzej cpi g" 1" UvqemGzej cpi g"	DUG'Nko ksgf 0'
Ftchv'Rtqur gewu'"'	Vj ku"Ftch/"Rtqur gewu"fcvgf"Fgego dgt"52."4245"hkrgf"y knj "nj g"DUG"Nko kngf"knj ceeqtfcpeg"y knj "nj g"UGDKKEFT"Tgi wrcvkqpu"
FR"	Fgrqukqt{'Rct\lekrcpv'
FR'KF"	F gr qukqt { "Rct klekr cpv/ut" Kf gpvks { "pwo dgt"
Grki kdrg'PTK	PTKgrki kdrg"\q"kpxguv"wpf gt"\j g"HGO C"Tgi wrc\kqpu. 'htqo "lwtkuf ke\kqpu"qwukf g"Kpf kc" y j gtg'kv'ku'pqv'wprcy hwri\q"o cng"cp"cr r hecvkqp"qt 'kpxkcvkqp"\q"r ctvkekr cvg'kp"\j g"Kurwg" cpf "kp"tgrcvkqp"q"y j qo "\j g"Cr r rhecvkqp"Hqto "cpf "\j g"Rtqur gewui'y krri'eqpuvkwwg"cp" kpxkcvkqp" vq" uwduetkdg" hqt" Gs wkx{" Uj ctgu" cpf "y j q" j cxg" qr gpgf "f go cvgtkcrk gf" ceeqwpui'y ksj "UGDKtgi krvgtgf "s wcrkhkgf" f gr qukxqt {"r ctvkekr cpvu""
Guetqy 'Ceeqwpv*u+'"	Ceeqwpv*u+"qr gpgf "y ky "y g"Dcpmgt *u+"vq"y g"Kuwg"r wtuwcpv'vq"Guetqy "cpf "Ur qpuqt" Dcpm'Ci tggo gpv0"
Guetqy "cpf" Urqpuqt" Dcpm' Citggo gpv'	Ci tggo gpv" f cvgf"]" gpvgtgf" kpvq" co qpi uv" yj g" Eqo r cp{." Ngcf " O cpci gt." yj g" Tgi kuvtct." yj g"Dcpmgt" vq" yj g" Kuvvg" cpf "Ur qpuqt" dcpm' vq" tgegkxg" o qpkgu" htqo " yj g" Crrrkecpvu' yj tqwi j " yj g"UEUDu "Dcpm' Ceeqwpv' qp" yj g" F guki pcvgf "F cvg" kp" yj g" Rwdrke" Kuvvg' Ceeqwpv0"
HKK 1" Hqtgkip" Kowkwklqpen' Koxguvqtu"	Hqtgki p" Kpurkwukqpcn' Kpxgurqt" *cu" f ghkpgf" wpf gt" UGDK *Hqtgki p" Kpurkwukqpcn' Kpxgurqtu+"Tgi wrcvkqpu."3;; 7."cu"co gpf gf +"tgi kurgtgf" y kij "UGDK wpf gt"crrrkecdrg" rcy u'kp"Kpf kc0'
Hktuv'l'Uqrg'Crrrkecpv'	Crrnecov'y j qug"pco g"uj cm'dg"o gpwlqpgf "lp" y g"Crrnecwlqp" Hqto "qt" y g"Tgxkulqp" Hqto "cpf" "lp" ecug" qh" qlpv"Dlf u. "y j qug"pco g"uj cm'cnuq" crrgct "cu" y g"hltuv" j qnf gt" qh" y g"dgpghlelct { "ceeqwpv" j gnf" lp" qlpv'pco gu0'
Higuj "Kuwg"	Hrguj "Kunwg"qh'wr vq"6.38.622 'Gs wkx{ "Uj ctgu'qh'hceg'xcnwg" "32022 'gcej "qh'Cunqekcygf" Eqcygtu'Nko kygf 'hqt'ecuj 'cv'c'r tleg'qh' "] _'r gt 'Gs wkx{ "Uj ctgu'*kpenwf kpi 'r tgo kwo 'qh' "] _'r gt 'Gs wkx{ "Uj ctgu+'ci i tgi cvkpi " "] _'Ncmj u'd{ "qwt 'Eqo r cp{0"
Hwi kukxg'Geqpqo ke'Qhhgpf gt"	Cp"kpf kxkf wcri'y j q"ku"f genctgf "c"hwi kkxg"geqpqo ke"qhhgpf gt"wpf gt"Ugevkqp"34"qh" Hwi kkxg"Geqpqo ke"Qhhgpf gtu'Cev."423: "



Vgto "	Fguet kr vkp"
I gpgtcn'Eqtr qtcvg"	Kpenwf g"uwej "kf gpvkhkgf "r wtr qugu"hqt"y j kej "pq"ur gekhke"co qwpv"ku"cmqecvgf "qt"cp{"
Rwtr qugu"	co qwpv''uq"ur gekhkgf "vqy ctfu"i gpgtcn''eqtrqtcvg"r wtrqug"qt"cp{"uwej "r wtrqug"d{"
	y j cvgxgt" pco g" ecmgf." kp" vj g" qhhgt" f qewo gpv0' Rtqxkf gf " vj cv" cp{" kuuwg" tgncvgf "
	gzrgpugu"ujcm"pqv"dg"eqpukfgtgf"cu"c"rctv"qh"igpgtcn"eqtrqtcvg"rwtrqug"ogtgn("
	dgecwug"pq"urgekhke"coqwpv"jcu"dggp"cmqecvgf"hqt"uwej"gzrgpugu"kp"vjg"qhhgt"
	f qewo gpv0'
I gpgtcn" Kohqto cwlqp"	Vj g"I gpgtcn" Kphqto cvkqp" F qewo gpv" hqt" kpxguvkpi "kp"r wdrke "kuwgu" r tgr ctgf "cpf"
F qewo gpv'	kungf "kp"ceeqtf cpeg"y kj "yj g"ektewrct"*EKT EHF IF KNI3414235+"f cwgf "Qevqdgt"45."
	4235." pqvkhkgf" d{" UGDK' cpf" wrfcvgf" rwtuwcpv' vq" yjg" ektewrct"
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	*UGDKI Q1EHF 1FET41EKT1R423; 1355+"f cvgf "P qxgo dgt": ."423; ."kuuwgf "d{"UGDKV
	Vjg" I gpgtcn" Kphqtocvkqp" Fqewogpv" ku" cxckncdng" qp" vjg" ygdukvgu" qh" vjg" Uvqem"
	Gzej cpi gu'cpf '\j g'NO 0"'
Kuwg"1"Rwdrke"Kuwg"1"Kuwg"uk g"	Rwdrle 'Kuwg''qh'wr vq''6.38.622 'Gs wlw ('Uj ctgu''qh'hceg''xcrwg'' '32022 'gcej ''qh'Cuuqelcvgf''
1" Kokken" Rwdrle" Qhlgt " 1" Kokken"	Eqcvgtu'Nko kgf 'hqt'ecuj 'cv'c'rtkeg'qh' '] _'r gt'Gs wkx{ 'Uj ctgu'*kpenwf kpi 'rtgo kwo ''qh''
Rwdrke''Qhhgtkpi "I'RRQ"I'Rtgugpv'	"]_"rgt"Gswkx{"Ujctgu+"ciitgicwlpi""]_"ncmju"d{"qwt"Eqorcp{0"
Kung" Kung'Ci taga any!	Vi alloi tago anyllfoyrf "E gogo dat" 45 "4245 "anystaf "Inya" dayy gan "ayyt" E go r an ("anf "
Kuwg'Ci tggo gpv'	Vj g"ci tggo gpv"f cvgf "F gego dgt"45."4245."gpvgtgf "kpvq"dgwy ggp"qwt"Eqo r cp{"cpf" yj g"Ngcf "O cpci gt."r wtuwcpv"vq"y j kej "egtvckp"cttcpi go gpvu"ctg"ci tggf "vq"kp"tgrcvkqp"
	vg'y g'Kunwg0'
Kuuwg'Enqukpi 'Fcvg''	Vjg"fcvg"qp"yjkej "vjg"Kuwg"enqugu"hqt"uwduetkrvkqp"
Kuuwg'Qr gpkpi 'F cvg''	Vj g'f cvg'qp'y j kej 'vj g'Kuwg''qr gpu'hqt''uwduetkr vkqp''
Kuwg'Rgtkqf'"	Vj g'r gt kqf ''dgwy ggp''y g''Kunwg''Qr gpkpi 'F cvg''cpf ''y g''Kunwg''Enqukpi 'F cvg.' kpenwukxg''qh''
"	dqyj "fc{u"fwtkpi "y j kej "rtqurgevkxg"Crrnkecpvu"ecp"uwdo kv"yj gkt"Crrnkecvkqpu."
	kpenwf kpi "cp { 'tgxkukqpu'\j gtgqh0'
Kuwg'Rtleg"	Vjg"rtkeg"cv"yjkej"Gswkw{"Ujctgu"ctg"dgkpi"kunwgf"d{"qwt"Eqorcp{"dgkpi" "]_"rgt"
	Gs wkw{ "Uj ctg" *Ippenwfkpi "ugewtkwkgu"rtgo kwo "qh" "]_"rgt"Gs wkw{ "Uj ctg+"
Kuwg'Rtqeggf u"	Vjg"rtqeggfu"qh"yjg"Kuuwg"cu"uwkrwncvgf"d{"yjg"Eqorcp{0'Hqt"hwtyjgt"kphqtocwkqp"
	cdqw/wug'qh'yj g'Kuwg'Rtqeggf u'r rgcug''ugg''yj g''ej cr vgt''vkrgf "õ <i>Qdlgewi'qh'yj g'Kuwg</i> ö''
Nace IIO and a set IIIINTO II	dgi kppkpi "qp"r ci g"8: "qh'y ku'Ftchv'Rtqur gewu0'
Ngcf 'O cpci gt "I"NO " Nkrkpi 'Ci tggo gpv'	Vj g'Ngcf 'O cpci gt'\q'\j g'Kuuwg.'kp'\j ku'ecug'dgkpi 'I tgvgz'Eqtrqtcvg'Ugtxkegu'Nko kvgf0' Wpnguu'\j g''eqpvgzv'\ur gekhkgu''qvj gty kug.''\j ku''o gcpu'\j g''Gs vkv{ ''Nkuvkpi ''Ci tggo gpv'vq''
Tridings Citiggo gpv	dg'uki pgf 'dgw ggp'qwt 'Eqo r cp{ ''cpf 'vj g'DUG''Nko ksgf 0'
Nqv'Uk g''	Vj g"O etngv'nqv'epf "Vtef kpi "nqv'hqt"vj g"Gs wkw("Uj etg"ku"] _"epf "kp"o wnwkr ngu"qh"] _"
1 H V CA B	y gtgchygt="uwdlgev"vq"c"o kpko wo "cmqvo gpv"qh"] _"Gs wkv{ "Uj ctgu"vq"y j g"uweeguuhwn"
	crrkecpvu0'
Octngv'Ocnkpi 'Ci tggo gpv'	O ctngy O cmkpi "Ci tggo gpy f cygf "F gego dgt" 45." 4245" dgy ggp" qwt "Eqo r cp { ." yj g"
	Ngcf 'O cpci gt'cpf 'O ctngv'O cngt0'
Octngv" Ocngt" Tgugtxcvkqp"] _'Gs wkw{ "Uj ctgu'qh" "32022"gcej "cv" "] _'r gt"Gs wkw{ "Uj ctg'*kpenwfkpi 'r tgo kwo "qh" "
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	O ctngv'O cngt0'
Oqdkrg'Crr*u+'"	Vjg" oqdkng" crrnkecvkqpu" nkuvgf" qp" vjg" ygdukkg" qh" UGDK' cv"
	j wrudly y y ûngdlû qxûp lugdly gd lqvj gt lQvj gt Cevlqpû qAf qTgeqi plugf Hrk? { gu(lpv 1/2 1/
	o K?62"qt"uwej "qyi gt"y gdukg"cu"o c{"dg"wrfcvgf"htqo "vko g"vq"vko g."y j kej "o c{"dg"
O kpko wo " Rtqo qvgtuø"	wugf "d{"TKKu"\q"uwdok "Crrnkecvkqpu"\vukpi "\jg"WRKOgejcpkuo"" Ciitgicvg"qh"42' "qh" vjg"hwm{"fknwgf"Rquv'" Knuwg"Gswkx{"Ujctg"ecrkxcn"qh"qwt"
Eqpvtkdwkqp"	Eqorcp{" j grf " d{" qwt" Rtqoqvgtu" y j kej " uj cm' dg" rtqxkf gf " vqy ctf u" o kpko wo "
Ah was wadh	rtqo qvgtu"qh"42' "cpf "nqengf/kp"hqt"c"rgtkqf "qh" y tgg" {gctu"htqo "y g"f cvg"qh"
	Cmqvo gpv0'
O www.cn'Hwpf '"'	C"O www.cn'Hwpf "t gi kuvgt.gf" 'y ky "UGDK'wpf.gt" y g"UGDK'*O www.cn'Hwpf.u+"T gi wrc.vkqpu."
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P gv'Kuwg''	Vj g''Knuwg''gzenwf kpi ''vj g''O ctngv''O cngt''T gugtxcvkqp''Rqtvkqp''qh''] _''Gs wkw{ ''Uj ctgu''qh''
-	hceg"xcnwg"qh" "32022"gcej "hwm("rckf"wr'hqt"ecuj "cv'c"rtkeg"qh" "] _"rgt"Gs wkk("Ujctg"
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	Eqorcp{0'



Vgto "	Fguet kr vkgp''
P gv'Rtqeggf u"	Rtqeggfu'qh'vjg'Kuwg'vjcv'ykm'dg'cxckrcdrg'vq'qwt'Eqorcp{.'yjkej'ujcm'dg'vjg'itquu'rtqeggfu'qh'vjg'Kuwg'rguu'vjg'Kuwg'gzrgpugu0'
P qp/Kpukwwkqpcn" Kpxguvqtu" 1" P KKu"	Cm'Crrnlecpvu."kpenwfkpi "Ecvgi qt{"KKKHRKu"vj cv'ctg"pqv'S kDu"qt"Tgvckn'Kpfkxkf wcn'Kpxguvqtu"y j q"j cxg"o cfg'Crrnlecvkqp"hqt"Gsvkw{"Uj ctgu'hqt"cp"co qwpv'qh'o qtg'vj cp"
Day/Tark and	"402'Ncnj "*dw"pqv'kpenvf kpi "PTKi'qvj gt "vj cp"Grki kdrg"PTKi+"
P qp/T guld gpv' P qp/T guld gpv' Kpf kcp" I P T K'	C'r gtuqp't gulf gpv'qwulf g'Kpf kc. 'cu'f ghkpgf 'wpf gt 'HGO C'T gi wrcvkqpu' C'r gtuqp't gulf gpv'qwulf g'Kpf kc. 'y j q'ku'c'ekkl; gp''qh'Kpf kc''qt 'c'Rgtuqp''qh'Kpf kcp''Qt ki kp'' cu'f ghkpgf 'wpf gt 'HGO C'T gi wrcvkqpu. 'cu''co gpf gf ''
QED" 1" Qxgtugcu" Eqtrqtcvg" Dqf { ""	C'eqorcp{.'rctvpgtujkr.'\u00e4gv{'qt"qvjgt"eqtrqtcvg'dqf{"qypgf"fktgevn{"qt"kpfgevn{"qt"kpf
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Rtqur gewu"	Vj g"Rtqur gewul'q "dg'hkrgf "y kij "\j g"TqE kp"ceeqtf cpeg'y kij "\j g"r tqxkukqpu'qh'Ugevkqp" 48"("54"qh'\j g'Eqo r cpkgu'Cev."42350'
Rwdrke 'Knuwg' Ceeqwpv'	Vj g"ceeqwpv"vq"dg"qrgpgf "y kij "y g"Dcpngt"vq"yj g"Knuwg"wpf gt"Ugevkqp"62"qh'yj g" Eqo r cpkgu'Cev."4235"vq"tgegkxg"o qpkgu'htqo "yj g'CUDC 'Ceeqwpvu'qp"yj g'F guki pcvgf " F cvg0'
S workhigf "Kpunkwukqpori Dw{ gtu" qt 'S KDu"	C"s werkhlef "kpurkwrkqperi'dw{ gt "cu"f ghkpgf "wpf gt "Tgi wrerkqp"4*3+"*uu+"qh"yj g"UGDK KEFT"Tgi wrerkqpu.'423: 0"
Tghwpf 'Ceeqwpv'	Ceeqwpv'\q'y j kej ''Crrnkecvkqp''o qpkgu'\q''dg'tghwpf gf ''\q'\y j g''Crrnkecpvu0'''
Tgi kuvgtgf "Dtqngtu"	Uqendtqngtu'tgi kngtgf 'y kj ''j g'uqenlgzej cpi gu'j cxkpi 'pckqpy kf g'\gto kpcn0"
Tgi kıvtct 'Ci tggo gpv'	Vj g"Ci tggo gpv'dgwy ggp" yj g"Tgi kıntct" vq" yj g"Kınıng" cpf "yj g"Kınıngt "Eqor cp{"f cvgf" F gego dgt "45."4245" kp" tgrcvkqp" vq" yj g"tgur qpukdkıkıkgu" cpf "qdıki cvkqpu" qhi'yj g"Kınıng' rgtvckpkpi "vq" yj g"Kınıng'"
Tgi kıxtct" cpf "Uj ctg" Vtcpuhgt" Ci gpvu"qt"TVCu"	Tgi kıxtct"cpf "uj ctg" vtcpuhgt"ci gpvu"tgi kıxgtgf "y kıj "UGDK'cpf "grki kdrg"vq"rtqewtg" Crrrkecvkqpu" cv" yj g" Fguki pcvgf " TVC" Nqecvkqpu" kp" vgto u" qh" ektewrct" pq0' EKTIEHF IRQNKE[EGNN13314237'f cvgf "Pqxgo dgt"32."4237'kuwygf "d{"UGDKO"
Tgi kıntct'\q'\jg'Knıng"	Tgi kıntet"\q"\jg"Kunvg"dgkpi "Dki uj etg"Ugtxkegu"Rtkxevg"Nko ksgf 0'
Tgyckil' Kof kxkf wen' Koxguvqtu'' 1" TKKu''	Crrnlecpvu" *kpenwf kpi " J WHu." kp" yj g" pco g" qh" Mctvc" cpf " Gnki kdng" P TKi" y j qug" Crrnlecvkqp 'Co qwpv'hqt 'Gs wkw{ "Uj ctgu'kp" yj g"Kuuwg'ku'pqv'o qtg' yj cp" '4022 'Ncnij 0'
Tgxkukqp"Hqto"	Hqto "wugf"d{"yjg"Crrnkecpvu"vq"oqfkh{"yjg"swcpvkx{"qh"yjg"Gswkx{"Ujctgu"qt"yjg"Crrnkecpv'Coqwpv'kp"cp{"qh'yjgkt'CUDC"Hqto*u+"qt"cp{"rtgxkqwu'Tgxkukqp"Hqto*u+0'"
	S kD"Crrnkecpu"cpf "Pqp/Kpukwwkqpcn"Crrnkecpu"ctg"pqv"cmqy gf "vq"y kyi ftcy "qt" my gt"vj gkt"crrnkecvkqpu"*kp"vgto u"qh"s wcpvkv{ "qh"Gs wkv{ "Uj ctgu"qt"vj g"Crrnkecvkqp" Coqwpv+"cv"cp{ "uvci g0'Tgvckn" kpf kxkf wcn"Crrnkecvkqpu"ecp"tgxkug" vj gkt"Crrnkecvkqp" fwtkpi "vj g"Knuwg"Rgtkqf"cpf "y kyi ftcy "vj gkt"Crrnkecvkqpu"wpvkn"Knuwg"Emukpi "Fcvg0'
Ur qpuqt 'Depm'	Vj g"Dcpngt"q"yj g"Kuwg"tgi kuygtgf "y kyj "UGDKy j kej "ku"crrqkpygf "d{ "yj g"kuuwgt "vq"cev" cu"c"eqpf wku"dgwy ggp"yj g"Uvqem"Gzej cpi gu"cpf "yj g"P cvkqpcn"Rc {o gpvu"Eqtrqtcvkqp" qh"Kpf kc"kp"qtfgt"vq"rwuj "yj g"o cpf cvg"eqmgev"tgs wguvu"cpf "I"qt"rc {o gpv"kpuwtwevkqpu" qh"yj g"T KKu"kpvq"yj g"WRK'yj g"Ur qpuqt "Dcpm"kp"yj ku"ecug"dgkpi "] _0"
Wpf gty tkgt"	I tgygz 'Eqtrqtcyg'Ugtxlegu'Nlo kgf 'cpf 'I tgygz'Uj ctg'Dtqnlpi 'Nlo kgf 0'
Wpf gty tkkpi 'Ci tggo gpv'	Vj g'ci tggo gpvf cvgf 'F gego dgt '45.'4245 'gpvgtgf 'kpvq'dgw ggp'vj g'Wpf gty tkvgtu.'qwt'' Eqo r cp{ ''cpf ''yj g'Ngcf 'O cpci gt0''
WRK	Wpkhkgf "Rc{o gpvu" Kpvgthceg" *WRKi-ku"cp" kpuvcpv" rc{o gpv" u{ uvgo "f gxgrqr gf" d{"vj g" P REKO" Ki" gpcdrgu" o gti kpi " ugxgtcri" dcpnkpi " hgcwtgu." ugco rguu" hwpf " tqwkpi " (" o gtej cpv" rc{o gpv" kpvq" qpg" j qqf OWRKcrrqy u"kpuvcpv" tcpuhgt "qh" o pg{"dgw ggp" cp{" w q" r gtuqpu" dcpm" ceeqwpvu" wukpi "c" rc{o gpv" cfftguu" y j kej "wpks wgn(" kfgpvkhkgu" c" r gtuqp) u"dcpm" cko"
WR'IF "	KF "etgcvgf "qp" Wpkhlgf "Rc{o gpv" Kpvgthceg" *WRK+"hqt" ukpi rg/y kpf qy "o qdkrg" r c{o gpv" u{ugo "f gxgrqr gf "d{" vj g" P cvkqpcriRc{o gpv" Eqtr qtcvkqp"qh" Kpf kc" *P REK+"
WRKO cpf cvg'T gs wguv'"	C'tgs wguv*kpvko cvkpi 'vj g'TKK'd{'y c{"qh'c'pqvkhecvkqp"qp"vj g"WRK'crrnkecvkqp"cpf 'd{" y c{"qh'c'"UO U'f ktgevkpi "vj g"TKK'vq"uwej "WRK'crrnkecvkqp+"vq"vj g"TKK'pkkevgf "d{"vj g" Urqpuqt"Dcpm'vq"cwoj qtkug"dmpenkpi "qh'hwpfu'qp"vj g"WRK'crrnkecvkqp"gs wkxcngpv'vq" Crrnkecvkqp"Co qwpv'cpf 'uwdugs wgpv'f gdkv'qh'hwpfu'lp"ecug"qh'Cmqvo gpv0'



Vgto "	Fguet kr vkqp''
WRK'o gej cpkuo '"'	Vj g"dlaf f kpi "o gej cpkuo "vj cv"o c{"dg"wugf "d{"cp"T KKvq"o cmg"cp"Crrnlecvkqp"kp"vj g"
	Kuuwg" kp" ceeqtf cpeg" y ksj " UGDK ektewrct" *UGDKI QIEHF IF KN4 IEKT IR 1423: 135: +"
	f cvgf" Pqxgo dgt" 23." 423:" tgcf" y kjj" UGDK ektewrct"
	*UGDKI QIEHF IF KN4 IEKT IR1423; 172+" f cvgf " Crtkn" 5." 423; " cpf " UGDK' ektewnct"
	*UGDKIJ QIEHF IF KN4 IEKT IR1423; 198+" fcvgf" Lvvpg" 4:." 423; "ektewrct" pq0"
	UGDKU Q1EHF 1FKN41EKT1RH23; 1: 7" fcvgf" Lvn(" 48." 423; " cpf" ektewrct" pq0
	UGDKU Q1EHF 1FET41EKT 1R1423; 1355"f cvgf "P qxgo dgt"2: ."423; 0"
WRK'RKP "	Rcuuy qtf "vq"cwj gpvkecvg"WRKvtcpucevkqp"
WWWUgewtkkgu'Cev'"	WUUUgewtkkgu'Cev'qh'3; 55."cu'co gpf gf ""
Yqtmkpi "Fc{u"	Cmi'f c{u"qp"y j kej "eqo o gtekeni'depmu"kp"O wo deki'etg"qr gp"hqt"dwukpguu="r tqxkf gf "
	j qy gxgt."y kj "tghgtgpeg" q"*c+"cppqwpego gpv"qh"Rtkeg"Dcpf ="cpf "*d+"Dkf "1"Kuwg"
	Rgtkqf."õY qtmkpi "Fc{ö"uj cm'o gcp"cm'fc{u."gzenxfkpi "cm''Ucwtfc{u."Uxpfc{u"cpf"
	r wdrke"j qrkf c{u."qp"y j kej "eqo o gtekcri'dcpmu"kp"O wo dck'ctg"qr gp"hqt"dwukpguu="*e+"
	y g"vko g"r gtkqf "dgwy ggp" y g"Dkf "1"Kuuwg"Empukpi "F cvg"cpf "y g"rkuvkpi "qhl'y g"Gs wkx{"
	Uj ctgu'qp''y g''Uqen'lGzej cpi gu. 'ŏY qtnkpi 'Fc{ö'uj cm'o gcp'cm'\tcfkpi 'fc{u'qh'Uqen'l
	Gzej cpi gu. "gzenwf kpi "Uwpf c { u"cpf "dcpm" j qnkf c { u. "cu"r gt " y g"ektewrctu" kuuwgf "d { "
	UGDKI"

EQPXGPVKQPCN'CPF'I GPGTCN'VGTOU'

Vgto "	Fguet kr vkqp''
CKH*u+"	Cn g t p c v k g "K p x g u v o g p v "H w p f u " c u " f g h k p g f " k p " c p f " t g i k u v g t g f " y k j " U G D K w p f g t " U G D K
	CKHTgi wekqpu"
	Vj g"Clt"*Rtgxgpvkqp"cpf "Eqpvtqrl'qh"Rqmwkqp+"Cev."3; : 3"
	Crrnlecklapu'Uwrqtvgf 'd{ 'Dmengf 'Coqwpv'
	$Cwj\ qt \not k\ gf\ "F\ gcrgtu"tgi\ knygtgf\ "y\ kj\ "TDKwpf\ gt"'j\ g"Hqtgki\ p"Gzej\ cpi\ g"O\ cpci\ go\ gpv'$
	*Hqtgki p'Ewttgpe{'Ceeqwpvu+'Tgi wrcvkqpu.'4222''
	$HRKi"tgi\ knygtgf\ "cu"Ecvgi\ qt\{"K'Hqtgki\ p"Rqtvhqrkq"\ Kpxguvqtu"\ wpf\ gt"\ yj\ g"UGDK'HRK'$
	Tgi wrcvkqpu0'
	Cp"HRKtgi kngtgf"cu"c"Ecvgi qt{"KKHqtgki p"Rqtvhqrkq"Kpxguvqt"wpfgt"vjg"UGDKHRK
	Tgi wcvkqpu"
	HRKi"tgi kırgtgf "cu"ecvgi qt{"KKKHRKi"wpfgt"vjg"UGDKHRKTgi wırckqpu."yjkej "ujcm"
	kpenwf g"cmlqvj gt"HRKu"pqv'grki kdrg"wpf gt"ecvgi qt { "Kcpf" "Kklnttgki p"r qtvlnqrkq"kpxguvqtu."
	uwej "cu"gpf qy o gpw."ej ctkcdrg"uqekgvkgu."ej ctkcdrg"vtww."hqwpf cvkqpu."eqtr qtcvg"
	dqf kgu. "kt www. "kpf kxkf wcni"cpf "hoo kn("qhhkegu"
	Egpytch'I UV"
	Vj g'Eqpuwo gt 'Rtqygevlqp'Cev.''3; : 8"
Eqo r cplgu'Cev'	Eqo r cpkgu'Cev."3; 78"*y kij qw'tghgtgpeg"\q"\j g"r tqxkıkqpu"\j gtgqh'\j cv'j cxg"egcugf "
	vq"j cxg"ghhgev"wr qp"pq\khlec\kqp"qh"yj g"P q\khlef "Uge\kqpu+"cpf "yj g"Eqo r cpkgu"Cev."
	4235. "\q"yi g"gz vgpv'kp"hqteg"r wtuwcpv'\q"yi g"pq\khlec\kqp"qh'\yi g"P q\khlef" "Uge\kqpu."tgcf"
	y kj "yj g"twgu."tgi wrckqpu."erctkheckqpu"cpf "o qf khleckqpu"yj gtgwpf gt"
	Eqo r cpkgu"Cev."4235."vq" yi g"gzvgpv"kp"hqteg"r wtuwcpv"vq" yi g"pqvkhkevkqp"qh" yi g"
	P qvkhlef "Ugevkqpu."tgcf "y kij "vj g"twrgu."tgi wrcvkqpu."erctkhlecvkqpu"cpf "o qf khlecvkqpu"
	y gtgwpf gt"
	Vj g"ewttgpv"eqpuqrkf cvgf "HF KRqrke { ."ghlgevkxg"ltqo "C wi wuv"4: ."4239."kuwgf "d { "vj g"
	F gr ct vo gpv'qh''kof wnt kcn'Rqnke { "cpf 'Rtqo qvkqp. 'O kpknt { "qh'Eqo o gteg"cpf 'kof wnt { ." Layet no gpv''gh''kof la "cpf "cpf "cpf "cpf kpknyllapy"; gt gyb "hydrallypy"; gt gyb "hydrallypy
	$I\ qxgtpo\ gpv'qh'' \ fic."cpf\ "cp{"o\ qf\ khlecvkqpu''yj\ gtgvq''qt''uwduvkwwkqpu''yj\ gtgqh''kuwgf"}\ htqo\ "ko\ g'' \ q'' \ kuwgf''$
	Vjg"Kpf kcp"Eqpvtcev'Cev."3: 94"
	Eqtr qtcvg'Uqekcn'Tgur qpukdkrkv{ "
	Vj g"F gr qukqt kgu"Cev."3; ; 8"
	C'f gr qukqt { 'tgi kungtgf 'y kj ''y g''UGDK'wpf gt ''y g''Ugewtkkgu''cpf ''Gzej cpi g''Dqctf ''qh''
	Kpf kc "F gr qukqttkgu"cpf "Ret wekr cpvu+"Tgi wre kqpu."3;; 8"
	Fktgevqt"Ktgpvkhkecvkqp"P wo dgt"
	F gr ct vo gpv'qh' Kpf wuxtkcn' Rqnke { "cpf 'Rtqo qvkqp. "O kpkmt { "qh' Eqoo gteg" cpf 'Kpf wuxt { ."
	I QK
	F gr qukqt { 'Rct \kekr cpv'
	F gr qukqt { 'Rct vkekr cp vøu'kf gp vkv{ 'pwo dgt''
	Fkgev'Vcz'Eqf g.'4235"
	Gctpkpi u'Dghqtg'Kpvgtguv.''Vcz.'Fgrtgekcvkqp''cpf''Coqtvk cvkqp''



Vgto "	Fguet kr vkgp''
ŒU'	Grgevtqpke'Ergctkpi 'U{uvgo "
GIO"	Gzvtcqtfkpct{"I gpgtcn'O ggvkpi ""
Grgevtlekv{ 'Cev'	Vj g'Grgevtkek{ "Cev."4225"
Gpxktqpo gpv'Rtqvgevkqp'Cev'	Vj g'Gpxktqpo gpv'™Rtqvgevkqp+'Cev.''3;:8"
GRC"	Vj g'Gpxktqpo gpv'Rtqvgevkqp'Cev.'3;:8"
GRH'Cev'	Vj g'Go r nq{gguø/Rtqxkf gpv/Hwpf u'cpf 'O kuegmcpgqwu'Rtqxkukqpu'Cev.'3; 74"
GRU'	Gctpkpi u'r gt'uj ctg"
g/TWRK	Rtko g"O kpknygt"P ctgpf tc"O qf k"ncwpej gf "c"eqpvcevnguu."r tgr ckf."gngevtqpke"r tgr ckf "
givilli	u(ugo "
GT'Cev'	Vj g'Gs wcn'Tgo wpgtcwqp'Cev.''3; 98"
GUKCev'	Vj g'Go r nq{gguø'Uxcvg'Kpuwtcpeg'Cev.'3; 6: ""
HEP T'Ceeqwpv'	Hqtgki p"Ewttgpe{"Pqp/Tgukfgpv"*Dcpm+"ceeqwpv"guvcdrkuj gf "kp"ceeqtfcpeg"y kj "vj g"
	HGO C"
HF K	Hqtgki p'f ktgev'kpxguvo gpv'
HGO C"	Vj g"Hqtgki p"Gzej cpi g"O cpci go gpv"Cev."3; ; ; "tgcf "y kyj "twrgu"cpf "tgi wrcwlqpu"vj gtg"
1200 0	wpf gt"
HGO C"4222"	Vjg"Hqtgkip"Gzejcpig"Ocpcigogpv"*Vtcpuhgt"qt"Knuwg"qh"Ugewtkx{"d{"c"Rgtuqp"
	Tgukf gpv'Qwukf g'Kpf kc+'Tgi wrc-kqpu.''4222''
HK&u+"	Hqtgki p"Koukwkqpcn"Koxguvqtu'cu'f ghkogf "vpf gt"UGDKHRKT gi wrcvkqpu"
Hkpcpekcn''[gct"1"Hkuecn''[gct"1"	Vj g"r gtkqf "qh"34"o qpvj u"eqo o gpekpi "qp"Crtkf"3"qh"vj g"ko o gf kcvgn{"r tgegf kpi "
H "	ecropf ct"{ gct "cpf "gpf kpi "qp"O ctej "53"qh"yj cv'r ct wewnet "ecropf ct" { gct "
HRD"	Hqtgki p'Kpxguvo gpv'Rtqo qvkqp'Dqctf"
Hqtgki p" Rqtvhqrkq" Kpxguvqt" qt"	C" hqtgki p"r qtshqrkq" kpxgusqt." cu" f ghkpgf" wpf gt" yj g" UGDK HRK Tgi wrcskqpu" cpf"
HRKI"	tgi kuygtgf 'y kij 'UGDKwpf gt 'cr r necdng'icy u'lop' Kof kc0'
HXEK"'	Hqtgki p"Xgpwtg"Ecrkxcn"Kpxguvqtu"*cu"f ghkpgf "wpf gt"vj g"Ugewtkkgu"cpf "Gzej cpi g"
121211	Dqctf "qh" Kpf kc "*Hqtgki p"Xgpwtg" Ecr kxcn" Kpxguvqtu+"Tgi wrcvkqpu. "4222+"tgi knygtgf"
	y kij "UGDK"
I CCR"	I gpgtcm('Ceegr vgf 'Ceeqwpvkpi 'Rtkpekr ngu''
I KT'P wo dgt"	I gpgtcn'/Kpf gz 'Tgi knt{ "P wo dgt"
I qKI'I qxgtpo gpv'"	I qxgtpo gpv'qh'Kpf kc'''
I tcwkv{'Cev'	Vj g'Rc{o gpv'qh'I tcwkv{ 'Cev.'3; 94"
I UV'Cev'	Vj g'Egpvtcn'I qqf u'cpf "Ugtxlegu'Vcz 'Cev.'4239"
J c ctf qwu''Y cuvgu'Twrgu''	J c ctf qwu'Y cuvgu'*O cpci go gpv."J cpf rkpi "cpf "Vtcpu'dqwpf ct { "O qxgo gpv+"Twrgu."
s of cer qwa r caya r vaga	422: ""
ÆСК	Vj g'Toukwwg''qh'Ej ctvgtgf 'Ceeqwpvcpvu''qh'Tof kc''
KEUK	Vj g'lfpurkswg''qh'Eqo r cp{ "Uget gvct lgu''qh'lfpf lc''
KF 'Cev'	Vj g'Kpf wuxtkcn'F kur wgu'Cev.'3; 69"
KFTC"	Vj g"Kpf w.nt.kcrl\"F gxgnqr o gpv\cpf "Tgi wrc\kqp+\"Cev."3; 73"
KG'Cev'	Vj g'Kpf kcp''Gcugo gpwi'Cev.'3:: 4"
KGO"	Kpf wuxkcn'Gpvtgr tgpgwtu'O go qtcpf wo "
KHTU"	Kpygtpcvkqpcn'Hkpcpekcn'Tgrqtvkpi "Uvcpfctfu"
KHUE"	Kpf kcp'Hkpcpekcn'U{ uvgo 'Eqf g'''
K UV"	Kygi tcygf 'I UV'
KV'Cev'	Kpeqo g"Vcz 'Cev.'3; 83"
Kpf kcp"I CCR"	I gpgtcm('Ceegr vgf 'Ceeqwpvkpi 'Rtkpekr ngu'kp' Kpf kc''
RPT"qt"Twrgg"qt" "qt"Tu0"	Kpf kcp'Twr gg. "yj g'qhhkekcn'ewt tgpe{ "qh' yj g'Tgr wdrke "qh' Kpf kc"
Kpukf gt "Vtcf kpi "Tgi wrcvkqpu""	Vj g" Ugewtkkgu" cpf " Gzej cpi g" Dqctf" qh" Kpf kc" *Rtqj kdkkqp" qh" Kpukf gt" Vtcf kpi +"
-Lord St. 161 151 AND MATCH	Tgi wreskqpu."4237."cu"co gpf gf 0'
IRQ"	Kpkkcrl/Rwdrhe "Qhhgtkpi"
KJP"	Kpvgtpcvkqpcn"Ugewtkvkgu"KfgpvkHecvkqp"P wo dgt"
MO R"	Mg{ 'O cpci gtlcril'Rgtuqppgri'
Nvf 0'	No kgf"
O cygtpk/{ 'Dgpghk/'Cev'	O cygtpky{ 'Dgpghky'Cev.''3; 83"
O OC"	O cuyet "qh"Ct vu"
000000000000000000000000000000000000000	O curgt "qh"Dwukpguu "Cf o kpkinteskqp"
OEC"	Vj g'O kpknt{"qh"Eqtr qtcvg"Chcktu."I qK
OŒqo "	O cuyet "qh"Eqo o gteg"
ОЕК	O kpkint { "qh" Eqo o gteg "cpf "Kpf wint { ."I q K"
OLK	Orphani gridge opi ipi mani. i gis



Vgto "	Fguet kr vkqp"
Okni'('Hkni'	Tgo qxkpi ''j g'gzknkpi 'lıwthceg'hc{gt'y kj 'c'o knkpi 'o cej kpg'cpf ''j gp''tcpur qt kpi ''j g'
	o cygtken'yq"c"uyqtei g"heekrkv{"
O UO G"	O ketq. "Uo cm'cpf "O gf kwo "Gpvgtr tkug"
O UO GF 'Cev'	Vj g'O ketq.''Uo cm'cpf 'O gf kwo 'Gpvgtr tkugu'F gxgmqr o gpv'Cev.''4228''
OYC"	Olpko wo "Y ci gu'Cev."3; 6: ""
O qGH'	O kpkirt { "qh"Gpxktqpo gpv"cpf "Hqtguvu"
OqH'	O kpkint { "qh"Hipcpeg." I qxgtpo gpv"qh"Kof kc"
O QW'	O go qtcpf wo "qh"Wpf gtuvcpf kpi "
O www.cn'Hwpf u''	O www.nlhwpf u'tgi knytgf "y kj "'y g"UGDK'wpf gt"'y g"Ugewtkkgu"cpf "Gzej cpi g"Dqctf "qh"
P KCev'	Kpf kc'*O wwcn'Hwpf u+'Tgi wrc\kqpu.'3;; 8" Vj g'P gi q√kcdrg'Kpuxtwo gpw'Cev.'3:: 3"
P qkug'Tgi wrcvkqp'Twrgu"	Vjg"Pqkug"Rqmwkqp"*Tgi wcxkqp"("Eqpxtqn+"Twrgu"4222"
P qvkhkgf "Ugevkqpu"	Vj g"ugevkqpu"qh"vj g"Eqo r cpkgu"Cev."4235"vj cv"j cxg"dggp"pqvkhkgf "d{"vj g"O EC"cpf"
1 d81 ose rdb	ctg"ewttgpwl("kp"ghhgev"
PRX"	P gv'Rt gugpv'Xcnwg"
PT"IPqp/tgukfgpv"	C"r gtuqp"tgukf gpv'qwukf g"Kpf kc."cu"f ghkpgf "wpf gt"vj g"HGO C"cpf "kpenwf gu"c"P qp/
11 0 01	tgukf gpv'Kpf kcp"
PTG'Ceeqwpv'	P qp/T gukf gpv'Gzvgtpcn'Ceeqwpv'guvcdrkuj gf "cpf "qr gtcvgf "kp"ceeqtf cpeg"y kj "vj g"
	HGO C"
PTKı"	Pqp/Tgukfgpv'kfpfkcpu"
PTQ'Ceeqwpv'	Pqp/Tgulf gpv"Qtf kpct { "Ceeqwpv"guvcdrkuj gf "cpf "qr gtcvgf "kp"ceeqtf cpeg"y kyj "vj g" HGO C"
PUFN"	Pcvkqpcn'Ugewtkxkgu'Fgrqukxqt{'Nkokxgf"
QED"	Qxgtugcu'Eqtr qtcvg'Dqf kgu"
Reu"	Rigegu"
RIG'Tcvkq"	Rtleg"l"Gctplpi u"Tcvlq"
RCP"	Rgto cpgpv'ceeqwpv'pwo dgt"
Rgvtqrgwo 'Cev'	Rgtqrgwo "Cev."3; 56"
Rgvtqrgwo "Twrgu" RCV"	Rgytqrgwo "Twrgu."3; 98"
RKV"	Rtqlkv'chygt "Vcz" Pudde "Kout gn !'Nlaki cykop"
RQD'Cev'	Rvdrke"Kpvgtguv'Nkski cvkqp" Rc{o gpv'qh'Dqpwu'Cev."3; 87"
RRR"	Rwdrle "Rtkxcy "Rctypgtuj kr"
Rwdrke 'Nkcdkrkv{ 'Cev'1'RNKCev'	Vj g"Rwdrke 'Nkcdktk{ "Kpuwtcpeg'Cev."3; ; 3""
Rxv0'T'*R+"	Rtkxcy"
RY F "	Rwdrle "Y qtmu"F gr ctvo gpv"qh"uvcvg"i qxgtpo gpvu""
S HKtu+"	S workhligf "Hatgki p"Kpxgurqt*u+"ou"f ghlipgf "wpf gt"yj g"UGDKHRKT gi wrovkapu"
S KE"	S wct vgtn("Kpeqo g"Egt vkhecvg"
TDK'	Vj g'Tgugtxg'Dcpni'qh' K pf kc''
T(F"	Tgugctej "("Fgxgnqr o gpv"
Tgi kıntcıkqp'Cev'	Vj g"Kpf kcp"Tgi kutcvkqp"Cev."3; 2: "
TqE"	Vjg'Tgikuntct''qh'Eqorcpkgu'™Mqmncvc+"
TQG"	Tgwtp"qp"Gs wkv{"
TQPY"	Tgwtp"qp"P gv"Y qtyj "
TVI U'	Tgcri'Vko g'I tquu'Ugwrgo gpv'
Twg'366C"	Twg"366C'wpf gt'yj g"WUUUgewtkkgu'Cev"3; 55"
UETC"	Ugewtkskgu'Eqpvtcevu'*Tgi wrcskqp+'Cev.'3; 78. "cu'co gpf gf 'htqo '\ko g'\q'\ko g"
UETT"	Ugewtkkgu'Eqpvtcewi*Tgi wrwqp+'Twgu.''3; 79. 'cu'co gpf gf 'ltqo ''do g''d ''do g0'
UGDK'	Vj g"Ugewtkkgu"cpf "Gzej cpi g"Dqctf "qh"kfof kc"eqpurkswgf "vpf gt" yj g"UGDKCev" Vi g" Lleavtlakgu" cpf "Gzej cpi g" Dqctf "qh"kfof kc" *Kuyug" qh" For ken" cpf "Flanguytg"
UGDK*KEFT+Tgi wcvkqpu"	Vj g" Ugewtkkgu" cpf "Gzej cpi g" Dqctf "qh" kpf kc" *Kuwg" qh" Ecr kcn" cpf "F kuenquwtg" Tgs wktgo gpvu+" Tgi wrcvkqpu." 423: ." cu" co gpf gf ." kpenwf kpi " kputwevkqpu" cpf"
UGDK*NQFT+'Tgi wrcvkqpu"	enctkhlecvkqpu"kuuwgf "d{ "UGDKhtqo "vko g"vq"vko g" Ugewtkskgu" cpf " Gzej cpi g" Dqctf " qh" Kpf kc" *Nkuvkpi " Qdrki cvkqpu" cpf " F kuenquwtg"
	Tgs wktgo gpvu+" Tgi wrcvkqpu." 4237." cu" co gpf gf." kpenwf kpi "kpuvt wevkqpu" cpf "
LCDVC or!!	entithlectiqpu'kumgf "d{ "UGDKitqo "vko g" q"vko g"
UGDKCev"	Vj g"Ugewkkkgu"cpf "Gzej cpi g"Dqctf "qh"kfof kc"Cev."3; ; 4" Lbauthkm"cnf "Gzej cpi g"Dqctf "qh"kfof kc"%Crust peyr"kygnyo gpy"Hynf yu"Tgi yrgykgnyu "
UGDKCKHTgi wcvkqpu"	Ugewtkskgu"cpf "Gzej cpi g"Dqctf "qh"kfof kc"*Cnxgtpcvg"kfoxguvo gpv'Hwpf u+"Tgi wrcvkqpu." 4234"



Vgto "	Fguet kr vkgp''
UGDKHRKT gi wrc kqpu"	Ugewtkskgu"cpf "Gzej cpi g"Dqctf "qh"Kpf kc"*Hqtgki p"Rqtshqrkq"Kpxguvqtu+"Tgi wrcskqpu." 4236"
UGDKHXEKT gi wrc kqpu'"'	Ugewtkskgu" cpf " Gzej cpi g" Dqctf " qh" Kpf kc" *Hqtgki p" Xgpwstg" Ecr kcn" Kpxguvqtu+" Tgi wrcvkqpu."4222"
Uge0'	Ugevkqp"
UI UV"	Ucvg'I UV"
U Y Y "I'U Y Y 'Cev'	Vj g" Ugzwcn' J ctcuuo gpv' qh" Y qo gp" cv" Y qtmrnceg" *Rtgxgpvkqp." Rtqj kdkkqp" cpf " Tgf tguucn+'Cev.'4235"
UKEC"	UkemiKpf wuxtkcniEqo r cpkgu'™Ur gekcniRtqxkukqpu+"Cev."3; : 7"
UO G"	Uo cm'cpf 'O gf kwo 'Gpvgtr tkug''
UVV"	Ugewtkskgu"Vtcpuceskqp"Vcz"
UGDKVengqxgt"Tgi wrevkqpu"	Vj g''Ugewtkkgu''cpf ''Gzej cpi g''Dqctf ''qh''Kpf kc''*Uwduvcpvkcn''Ces wkukkqp''qh''Uj ctgu''cpf '' Vcngqxgtu+''Tgi wrcvkqpu.''4233.''cu''co gpf gf 'htqo ''vko g''vq''vko g0'
VO 'Cev'	Vj g"Vtcf go ctmr"Cev."3; ; ; "
WUUI CCR"	I gpgtcm("Ceegr vgf "Ceeqwpvkpi "Rtkpekr rgu"kp"vj g"Wpksgf "Uvcvgu"qh"Co gtkec"
WU0'Ugewtkklgu'Cev'	Vj g"Wpkgf "Uccygu"Ugewtkkgu"Cev."3; 55"
WU&'qt''WUF ''qt''WU'F qnctu''	Wpkgf "Ucvgu'Fqmct." yj g"qhhlekcn'ewttgpe{"qh" yj g"Wpkgf "Ucvgu"qh"Co gtlec"
WUC''qt''WU0'qt''WU''	Wpkgf "Ucvgu"qh"Co gtkec"
XCV"	Xcnwg'Cffgf"Vcz"
Y ci gu'Cev'	Rc{o gpv'qh'Y ci gu'Cev.'3; 58"
Y cvgt 'Cev'	Vj g"Y cvgt"*Rtgxgpvkqp"cpf "Eqpvtqn"qh"Rqmwkqp+"Cev."3; 96"
YEC"	Vj g"Y qtno gpøu"Eqo r gpucylqp"Cev."3; 45"
Y kthwi'F ghcwngt"	C" y krhwn' f ghownigt." cu" f ghkpgf "wpf gt" Tgi wrovkqp" 4*3+*KKK+" qh" yj g" UGDK KEFT"
	Tgi wrc kqpu."o gcpu"c"r gtuqp"qt"cp"knuwgt"y j q"qt"y j kej "ku"ec vgi qt kl gf "cu"c"y krhwri
	f ghcwngt "d{"cp{"dcpm'qt 'hkpcpekcn'kpurkwrkqp"*cu'f ghkpgf 'wpf gt 'vj g'Eqo r cpkgu'Cev."
	4235+"qt"eqpuqt kwo "vj gtgqh"kp"ceeqtf cpeg"y kej "vj g"i wkf grkpgu"qp"y krhwri'f ghcwnwgtu" kuuwgf "d{ "vj g"Tgugtxg"Dcpm"qh"kpf kc"

VGEJ PKECN'TKPF WUVT['TGNCVGF'VGTO U'

Vgt o ''	HwniHqto ''
CTVKV"	Cukep 'T gugetej 'epf 'Vtekplpi 'Koukwy'hqt 'unkm'Vtepuhgt''
СК	Ctvkhelcn'Kpygnki gpeg''
DQV"	Dwkrf/Qr gtcvg/Vtcpuhgt"
ECI T"	Eqo r qwpf gf "Cppwcn'I tqy yj "Tcvg"
ECF"	Ewttgpv'Ceeqwpv'Fghlekv'
EC∖ TK	Egpvtcn'Ctkf '\ qpg'Tgugctej 'Kpurkwwg''
EE"	Eqo o gpego gpv'Egtvkhlecvg''
EHC"	Egt vkhkgf "Hkpcpekcn'Cpcn(uv'"
FC"	F gxgmr o gpv'Ci tggo gpv'
FRC"	F ggpf c{cri'Rqtv'Cwj qtk{"
HUK	Ki'ku''y g'tevkq''qh''y g''Kpvgtpen'Hnqqt''Ctgc''epf''Uengedng''Ctge0'
I FR"	I tquu'Fqo guvke 'Rtqf wev'
IHE"	I nqdcn'hkpcpekcn'Etkugu"
ÆCT"	Kpf kcp"Eqwpekn'qh"Ci tkewnwtcn'Tgugctej "
KQC"	Kpvko cvkqp"qh"Crrtqxcn"
0(0"	O gti gtu'cpf 'Ces wkukkqpu"
RG"	Rt kx c vg "Gs vkx{ "

CDDTGXKCVKQPU'

Cddt gxlc vlqp''	HwniHqto ''
CU'I'Ceeqwpvkpi 'Uvcpf ctf'	Ceeqwpvkpi "Ucpfctfu"cu'kuuwgf"d{"vjg"Kpuvkwwg"qh"Ejctvgtgf"Ceeqwpvcpvu"qh"Kpfkc"
C le"	Ceeqwpv''
CI O "	Cppwcn'I gpgtcn'O ggwpi ''
CUDC"	Crrnlecvlqpu"Uwrrqtvgf "d{"Dnqengf"Coqwpv"
Co v'	Co qwpv''
CKH'	Cnigtpcvkxg"Kpxguvo gpv"Hwpfu"tgi knigtgf "wpfgt" y g"Ugewtkikgu"cpf "Gzejcpig"Dqctf"
	qh'Knofkc'™Cnogtpcvkxg'Knoxguvogpv'Hwpfu+"Tgiwrcvkqpu."4234."cu"cogpfgf0'



C["	Cuuguuo gpv"[gct"
CQC"	Ctvkergu'qh'Cuuqekcvkqp''
Crrtqz"	Crrtqzko cygn("
D0C"	Dcej gmt"qh"Ctwi"
DDC"	Dcej grqt"qh"Dwukpguu"Cf o kpkıntcıkqp"
D0'Eqo "	Dcej gmt"qh"Eqo o gteg"
D0G"	Dcej grqt"qh'Gpi kpggtkpi ''
D0'Ue"	Dcej gmt "qh" (Lekspeg"
D0'Vgej "	Dcej gmt "qh"Vgej pqmi {''
Dp"	Dknkqp"
DI "I'NE"	Depmil wetepygg'l'Ngwgt'qh'Etgf kv'
DKHT"	Dqctf'hqt'Kpf wwt.kcni'cpf'Hkpcpekcni'Tgeqpuvt.wevkqp''
DUG"	DUG"Nko ksgf "*hqto gtn{ "mpqy p"cu"\j g"Dqo dc{ "U\qeniGzej cpi g"Nko ksgf +\"
DUG"UGP UGZ "	Ugpugz "kp"cp"kpf gz="o ctmgv"kpf kecvqt "qh"vj g"r qukkkqp"qh"uvqem"vj cv"ku "rkuvgf "kp"vj g" DUG"
DUG"UO G"	UO G'Rrcvhqto "qh' DUG"Nko kgf ''
EFUN"	Egpvtcn'Fgrqukqt{"Ugtxkegu" Kkpfkc+"Nkokgf"
ECI T"	Eqo r qwpf gf "Cppwcn'I tqy vj "Tcvg"
ECP"	Eqphkto cvkqp'qh'Cmqecvkqp'Pqvg''
EC"	Ej ctvgtgf 'Ceeqwpvcpv'
ED"	Eqpvtqmkpi "Dtcpej ''
EE"	Ecuj 'Etgf k'
EEK'	Vjg'Eqorgkkqp'Eqookuukqp''qh''Kpfkc''
EHQ'"'	Ej kgh'Hkpcpekcn'Qhhkegt''
EI UV"	Egptch'I UV''
Е К Р "	Eqtrqtcvg'Kfgpvkhlecvkqp'P wo dgt''
E K /"	Eqo o kuukqpgt"qh"Koeqo g"Vcz"
EU'	Eqorcp{'Ugetgxct{''
ЕИГ"	Eqtrqtcvg'uqekcn'tgurqpukdkkx{0'
EU'('EQ"	Eqorcp{"Ugetgvct{"("Eqornkcpeg"Qhhkegt"
EGPXCV"	Egpvtcnl'Xcnwg'Cffgf"Vcz"
EUV"	Egpyterl'Uergu''Vez''
EY C"I'KEY C"	Equv'cpf 'Y qtmu'Ceeqwpvcpv'
EOF"	Ej ckto cp"cpf "O cpci kpi "F ktgevqt"
Fgrqukxqt{"qt"Fgrqukxqtkgu"	P UF N'cpf 'EF UNO'
F R P"	Fktgevqt"Ktgpvkhkecvkqp"Pwodgt"
F KRR"	F gr ct vo gpv" qh" Kof wuxtkcn" Rqnke{" cpf "Rtqo qvkqp." O kpkuxt{" qh" Eqo o gteg." I qxgtpo gpv"qh"Kof kc''
FR"	Fgrqukxqt{"Rctxlekrcpv"
FR'KF"	Fgrqukkqt{"Rctvkekrcpvøu"Kfgpvkhkecvkqp"Pwodgt"
GDKVFC"	Gctpkpi u'Dghqtg''Kpvgtguv.''Vczgu.'Fgrtgekcvkqp'('Coqtvkucvkqp''
ŒU"	Grgevtqpke 'Ergctkpi 'U{ uvgo ''
GUKE"	Gorma{ggøul"Ucvg"Kpuwtcpeg"Eqtrqtcvkqp"
GRU'	Gctpkpi u'Rgt'Uj ctg''
GIO"I'GQIO"	Gzvtcqtfkpct{'I_gpgtcn'Oggvkpi''
GUQR"	Gorm[gg"Uqem'Qrvkqp"Rn:p"
GZ KO "I'GZ KO "Rqrke{"	Gzr qtv'ó'Kor qtv'Rqnke{''
HEPT'Ceeqwpv'	Hqtgki p'Ewttgpe{ "Pqp/Tgukfgpv'Ceeqwpv''
HRD"	Hqtgki p'Kpxguvo gpv'Rtqo qvkqp'Dqctf''
H["I"Hkuecri"I"Hkpcpekcri[gct"	Rgtkqf "qh"yy grxg"o qpyj u"gpf gf "O ctej "53"qh"yj cv"r ctvkewrct" { gct. "wprguu"qyj gty kug" uvcygf ''
HGO C"	Hqtgki p'Czej cpi g'O cpci go gpv'Cev.'3; ; ; "cu'co gpf gf 'htqo ''klo g''vq''klo g."cpf ''vj g'' tgi wxcklqpu'htco gf ''vj gtg''wpf gt0'
HEPT'Ceeqwpv'	Hqtgki p'Ewttgpe{ 'Pqp/Tgukfgpv'Ceeqwpv''
HDV"	Htkpi g'Dgpghk'Vcz''
HF K	Hqtgki p'Fktgev'Kpxguvo gpv'
HKi"	Hipopelicn'i Kpurki wikiqpu''
HKKi"	Hqtgki p"Kpurkwukqpcn"Kpxguvqtu"*cu"f ghkpgf "wpf gt"Hqtgki p"Gzej cpi g"O cpci go gpv"
	*Vtcpuhgt"qt"Knuwg"qh"Ugewtkx{"d{"c"Rgtuqp"Tgukfgpv'qwvukfg"Kpfkc+"Tgiwrckqpu."
	4222+"tgi kuvgtgf" y kyj "UGDK wpfgt" crrnlecd ng" ncy u"kp" Kpfkc"



HRKi"	õHqtgki p"Rqtvhqrkq"Kfoxguvqtö"o gepu"c"r gtuqp"y j q"ucvkuhkgu"vj g"grki kdkrkv{ "etksgtkc"
	rtguetkdgf "wpf gt" tgi wrc\kqp" 6" cpf " j cu" dggp" tgi kuygtgf "wpf gt" Ej cr \kt qh"
	Ugewtkkgu" Cpf " Gzej cpi g" Dqctf " qh" Kpf kc" *Hqtgki p" Rqt\rqrkq" Kpxguvqtu+"
	Tgi wrc\kqpu."4236."y j kej "uj cm"dg"f ggo gf "vq"dg"cp"kpvgto gf kct { "kp"vgto u"qh"y g"
	rtqxkdqpu'qh'y g'UGDKCev.'3; ; 40'
HVC"	Hqtgki p"Vtcf g"Ci tggo gpv0"
HXEK	Hqtgki p "Xgpwtg"Ecr kcrl'Kpxguvqtu"tgi kuvgtgf "y kyj "UGDK'wpf gt" yj g"Ugewtkkgu"cpf "
TEXE	Gzej cpi g'Dqctf 'qh'Kpf kc'*Hqtgki p'Xgpwtg'Ecr kcn'Kpxguvqtu+Tgi wrxlqpu.'42220'
HX"	Heeg "Xenwg"
I qKl'I qxgtpo gpv'	I qxgtpo gpv'qh'Kpf kc''
I FR"	
I CCR"	I tquu'F qo guvle "Rtqf wev" Langton "Coognant "Coognantsi "Dthrology" "Kffp!"
	I gpgtcm('Ceegr vgf 'Ceeqwpvkpi 'Rtkpekr rgu'kp'Kpf kc''
I UV"	I qqf u'cpf "Ugtxleg"Vcz"
I XC"	I tquu'Xcnwg'Cffgf''
J WH'	J kpf w'Wpf kxkf gf 'Hco kn{ ''
KECK'	Vj g"Kpukwwg"qh"Ej ctvgtgf "Ceeqwpvcpvu"qh"Kpf kc''
КЕОСК "	Vj g'Kpurkswg'qh'Equv'Ceeqwpvcpvu'qh'Kpf kc''
ЮН'	Kpvgtpcvkqpcn'Oqpgvct{"Hwpf"
KP T"I"b"I"T wr ggu"I"Tu0"	Kpf kcp'Twr ggu.'yj g'hgi cn'ewttgpe{ ''qh'yj g'Tgr wdrke ''qh'Kpf kc''
KKR"	Kof gz "qhi Kof wuxt keri Rtqf wexkqp"
IRQ"	Koksken'Rwdnke 'Qhhgt''
KEUK'	Vjg"Kpurkswg"qh"Eqorcp{"Ugetgsctkgu"qh"Kpfkc"
КНГ U'	Kovetpevkapen'Hopeken'Ter qtvkpi "Uvepf etf u"
ЈРК	J ki j "P gv"Y qtyj "Kof kxkf wcn"
kQr"	Vj cv'ku''
KW0Cev'	Kpeqo g"Vcz 'Cev.'3; 83.''cu'co gpf gf 'htqo ''\ko g'\q'\ko g''
KV'Cwj qtkkgu"	Kpeqo g'Vcz'Cwj qtkkgu'
KV'Twgu"	Kpeqo g'Vcz'Twrgu.'3; 84.'cu'co gpf gf.'gzegr v'cu'uvcvgf 'qyj gty kug''
Kpf kcp"I CCR"	I gpgtcm('Ceegr vgf 'Ceeqwpvkpi 'Rtkpekr ngu'kp'Kpf kc''
KTFC"	
MOR"	Kouwtcpeg'Tgi wrcvqt { "cpf "F gxgrqr o gpv'Cwj qtkv{ "
NO "	Mg{ 'O cpci gtk:n'Rgtuqppgn'
	Ngcf "O cpci gt"
Nvf 0'	No kgf "
OCV"	O kpko wo "Cngtpcyg"Vcz"
O qH'	O kpkint { "qh"Hkpcpeg." I qxgtpo gpv"qh"Kpf kc"
O/q/O"	O qpyj /Qp/O qpyj ''
O QW'	O go qtcpf wo 'qh'Wpf gtuvcpf kpi ''
0.000"	O cuygt "qh"Ct vu"
O 0D0C"	O curgt "qh"Dwukpguu"Cf o kpkıntcıkqp"
O 0Eqo "	O cuygt "qh"Eqo o gteg"
Op"	O krikqp"
O 0'G"	O curgt "qh'Gpi kpggtkpi "
OTR"	O czko wo 'Tgyckt'Rtkeg''
O 0Vgej "	O cuvgtu"qh"Vgej pqrqi { ''
O gtej cpv'Dcpngt"	O gtej cpv"Dcpmgt"cu"f ghkpgf "wpf gt"vj g"Ugewtkkgu"cpf "Gzej cpi g"Dqctf "qh"Kpf kc"
	*O gtej cpv'Dcpngtu+'Tgi wrcvkqpu.'3; ; 4''
OCRIP"	Octngv'Rct wekr cpwi'cpf 'Kpxgwqtu'F cwdcug'
O UO Gu"	O ketq. "Uo cm'cpf "o gf kwo "Gpvgtr tkugu"
OqC"	O go qtcpf wo 'qh'Cuuqekcvkqp''
OTR"	O czko wo "TgwkilRtkeg"
PC"	Pqv'Crrikecdig''
P gw qt yj "	Vj g"ci i tgi cvg"qhlr ckf/wr 'Uj ctg'Ecr kxcn'cpf 'Uj ctg'Rtgo kwo 'ceeqwpv'cpf 'Tgugtxgu''
טיף עס -	cpf" Uwtr nwu*Gzenwf kpi " tgxcnwcwkqp" tgugtxgu+" cu" tgf wegf " d{" ci i tgi cvg" qh"
	O kuegmcpgqwu"Gzr gpf kwtg*\q"\yi g"gz\gp\'pq\'y tk\gp"\qh+"cpf "f gdk\'dcicpeg"\qh"
	Rtqlk/ 'Nquu'Ceeqwpv'
P GHV"	
PGEU"	P cykaped/Great aple "Hypf u"Vtepuligt" P cykaped/Great aple "F methai "T (unco !!
PGEU*	P cykapcn'Grgevtapke'Engctkpi 'U{ uvgo ''
	P gv'Cungv'Xcnwg'' D or !Dt grown !'V ow o'!
PRX" PTKı"	P gv/Rt gugpv/Xcnwg''
	P qp/T guld gpv'Kpf kcpu''



PTG'Ceeqwpv'	P qp/T gulf gpv'Gz vgt pcn'C eeq wpv''
PTQ'Ceeqwpv'	Pqp/Tgukf gpv'Qtf kpct { 'Ceeqwpv'
PUG"	P cvkqpcn'Uqem'Gzej cpi g"qh'Ifpf kc"Nko kgf "
PQE"	Pq'Qdlgevkqp'Egtvkhkecvg''
PUFN"	P cvkqpcn"Ugewtkvkgu"F gr qukqt { "Nko kvgf" "
QED"	Qxgtugcu'Eqtr qtcvg''Dqf kgu''
R0C0'	Rgt 'Cppwo ''
RH"	RtqxkfgpvlHwpf''
RI "	Rqu/I tcf wcyg''
RCE"	Rgtuqpu'Cevkpi 'kp'Eqpegtv'
R"TGTcvkg"	Rtleg"l'Gctpkpi u'Tcvkq"
RCP"	Rgto cpgpv'Ceeqwpv'P wo dgt''
RCV"	Rtqhk/Chygt''Vcz''
RDV"	Rtqhk/Dghqtg"Vcz"
RNK'	Rqucn'Nkg'Kpuwtcpeg''
RQC"	Rqy gt"qh"Cwqtpg{"
RUW'	Rwdnle"Ugevqt"Wpf gtvcnlapi *u+"
Rxv0'	Rtkcg"
TDK	Vj g'Tgugtxg'Dcpnfqh'Kpf kc''
TQG"	Tgwtp"qp"Gs wkv{ ''
T(F"	Tgugctej "("Fgxgmrogpv"
TQPY"	Tgwtp"qp"Pgv"Yqtyj ''
TVI U'	Tgcn'Vko g'I tquu'Ugwgo gpv''
UETC"	Ugewtkklgu 'Eqpytcew' *Tgi wrcklqp+'Cev.'3; 78. "cu"co gpf gf 'htqo "kho g" kq "kho g"
UETT"	Ugewtkkgu"Eqpvtcevu"*Tgi wrcvkqp+"Twrgu."3; 79."cu"co gpf gf "Itqo "vko g"vq"vko g"
UEUD"	Ugnh/Egt vkhkgf "U{ pf kecvg"Dcpmu"
UGDK	Ugewtkkgu"cpf "Gzej cpi g"Dqctf "qh"Kpf kc"
UNEC"	Ukem'lkpf wunt ken'Eqor cpkgu'**Ur geken'r tqxkukqpu+"Cev."3; : 7. "cu'cogpf gf "htqo" \kog" \q "\kog"
UO G"	Uo cmi'cpf 'O gf kwo 'Gpvgtr tkugu''
UVV"	Ugewtkkgu"Vtcpucekqp"Vcz"
Uge0'	Ugevlqp''
VCP"	Vcz 'F gf wewlqp 'Ceeqwpv'P wo dgt''
VTU'	Vtcpucevkqp"Tgi kurtcvkqp"Urkr"
VKP"	Vczrc{gtu'Krgpvkhkecvkqp'Pwodgt''
WU'1"Wpkgf "Ucvgu"	Wpkgf "Ucygu"qh"Co gtlec"
WRK	Wpkłakgf "Rc{ogpwu"Kpwgthceg"cu"c"rc{ogpw'ogejcpkwo" wjtqwij"Pcwkqpcn"Rc{ogpwu"
	Eqtrqtcvkqp" qh" Kofkc" y kyj "Crrnkecvkqp" Uwrrqtvgf" d{"Dmqem' Coqwpv'hqt"
	crrnlecvkqpu'lp'rwdnle'kuuwgu'd{'tgvcknllpfkxknfwcnlkpxguvqtu'vjtqwij''UEUDu''
WUF "I"WU&'I"&"	Wpkgf "Ucvgu"F qmct. "vj g"qlhlek:niewttgpe{ "qh'vj g"Wpkgu"Ucvgu"qh'Co gtlec''
XEH' 1" Xgpwtg" Ecrkcn'	Hqtgki p"Xgpwtg"Ecr kcn"Hwpf u"*cu"f ghkpgf "wpf gt"vj g"Ugewt kkgu"cpf "Gzej cpi g"
Hwpf"	Dqctf "qh"Kpf kc"*Xgpwtg"Ecr kcn"Hwpf u+"Tgi wrcylqpu."3;; 8+"tgi kuygtgf "y kj "UGDK
Y/CY III	wpf gt "cr r rlecdrg" rcy u'l p "Kpf kc0"
XCV"	Xcmy'Cffgf''Vcz''
y (g(h()'	Y kj "ghgevhtqo "
[q["	[gct"qxgt"[gct"

38"



EGT VCIP 'EQP XGP VKQP U'WUG'QH'HIP CP EKCN'IP HQTO CVKQP 'CPF 'O CTMGV'F CVC'CPF'' EWITGPE['OH'HIP CPEKCN'RTGUGP VCVKQP''

Kp" y ku"F tchv'Rtqur gewu." y g"vgto u"**õy gö.'öwnö.'öqwt ö.'öy g'Eqo rcp{ö.'öqwt 'Eqo rcp{ö.'öCunqekvgf 'Eqcvgt uö'' õCunqekvgf 'Eqcvgt u'Nho kgf ö'cpf 'ŏCENö.**" wprguu" y g"eqpvgzv'q y gty kug"kpf kecvgu"qt"ko r nkgu." tghgtu" vq"Cunqekcvgf "Eqcvgtu'Nko kgf 0'

EGTVCIP'EQPXGPVIQP"

Cmitghgtgpegu'hp'iy ku'Ftchv'Rtqur gewu'vq''ōKpf kcö''ctg''vq''iy g'Tgr wdrke''qh'Kpf kc0'Kp''iy ku'Ftchv'Rtqur gewuu''qwt'Eqorcp{'j cu'' rtgugpvgf ''pwo gtkecnikphqto cvkqp'kp''ōrcmj uö''wpkxu0Qpg''rcmj ''tgr tgugpvu''3.22.2220'

HIP CPEICN'F CVC"

Wprguu"ucvgf "qvj gty kug." vj g"hlpcpekcni'f cvc"kp" vj kn"F tchv"Rtqur gewu"kn"f gtkxgf "htqo "qwt"Cwf kxgf "Tgurcvgf "Hlpcpekcni' Ucvgo gpwi"hqt" vj g"r gtkqf "gpf gf "qp"Ugr wo dgt"52."4245"cpf "hlpcpekcni'{ gctu"gpf gf "qp"O ctej "53."4245=4244="cpf "4243" r tgr ctgf "kp"ceeqtf cpeg" y kyj "kpf kcp" I CCR." vj g"Eqo r cpkgu"Cev"cpf "tgurcvgf "kp"ceeqtf cpeg" y kyj "vj g"UGDK*KEFT+" Tgi wrcvkqpu." I wkf cpeg"P qvg"qp"õ**T gr qt wi lp"Eqo r cp{ 'Rt qur gewwi *T gxkgf '423; +ö**"kuwgf "d{ "KECK'cpf "vj g"Kpf kcp" I CCR" vj j kej "ctg"kpenwf gf "kp" vj ku"F tchv'Rtqur gewu." cpf "ugv'qwv"kp"*ōHlpcpekcnUw vgo gpwi'cu'T gwc vgf ö*"qp"r ci g"359"qh" vj ku"F tchv'Rtqur geww.0'

 $\label{thm:condition} \begin{tabular}{l} $K_0''y'' ku''Ftchv''Rtqur gewu."cp{"f kuetgr cpekgu''lp"cp{"vcdrg"dgwy ggp"'y g"vqvri'cpf "y g"uwo "qhi'y g"co qwpuu''nkuvgf "ctg"f wg"vq" tqwpf kpi "qhh'\Cmihki wtgu'kp'f geko cnu''y cxg''dggp''tqwpf gf "qhh'\q''y q''f geko cni'r ncegu'cpf "ceeqtf kpi n{ 'v'y gtg''o c{ 'dg''eqpugs wgp\kcn'ej cpi gu'kp''y ku''Ftchv''Rtqur gewu0'' tqwpf gf "qhh'\q''y q''f geko cni'r ncegu'cpf "ceeqtf kpi n{ 'v'y gtg''o c{ 'dg''eqpugs wgp\kcn'ej cpi gu'kp''y ku''Ftchv''Rtqur gewu0''} tqwpf gf "qhh'\q''y q''f geko cni'r ncegu'cpf "ceeqtf kpi n{ 'v'y gtg''o c{ 'dg''eqpugs wgp\kcn'ej cpi gu'kp''y ku''Ftchv''Rtqur gewu0''} tqwpf gf "qhh'\q''y q''f geko cni'r ncegu'cpf "ceeqtf kpi n{ 'v'y gtg''o c{ 'dg''eqpugs wgp\kcn'ej cpi gu'kp''y ku''Ftchv''Rtqur gewu0''} tqwpf gf "qhh'\q''y q''f geko cni'r ncegu'cpf "ceeqtf kpi n{ 'v'y gtg''o c{ 'dg''eqpugs wgp\kcn'ej cpi gu'kp''y ku''Ftchv''Rtqur gewu0''} tqwpf gf "qhh'\q''y q''f geko cni'r ncegu'cpf "ceeqtf kpi n{ 'v'y gtg''o c{ 'dg''eqpugs wgp\kcn'ej cpi gu'kp''y ku''Ftchv''Rtqur gewu0''} tqwpf gf "qhh'\q''y q''f geko cni'r ncegu'cpf "ceeqtf kpi n{ 'v'y gtg''o c{ 'dg''eqpugs wgp\kcn'ej cpi gu'kp''y ku''Ftchv''Rtqur gewu0''} tqwpf gf "qhh'\q''y q''f geko cni'r ncegu'cpf "ceeqtf kpi n{ 'v'y gtg''o c{ 'dg''eqpugs wgp\kcn'ej cpi gu'kp''y ku''Ftchv''Rtqur gewu0''} tqwpf gf "qhh'\q''y q'''y q''' tgwpf gf "qh'' tqwpf gf "qh'$

 $Qwt"Eqo\ r\ cp{\aligned} wu'hpcpekcn'{\gct"eqo\ o\ gpegu"qp"Cr\ tkn'3"qh'yi\ g'ko\ o\ gf\ kcyn{\normaligned} rt\ gegf\ kpi\ "ecngpf\ ct"{\gct"cpf\ "gpf\ u'qp"O\ ctej\ "53" qh'yi\ g''ko\ o\ gf\ kcyn{\normaligned} rt\ gegf\ kpi\ "ecngpf\ ct"{\gct."uq"cm'tghgtgpegu"vq"c"r\ ct\ kewct"hpcpekcn''{\gct"ctg"vq"yi\ g''34/o\ qpyi\ "r\ gtkqf\ "eqo\ o\ gpekpi\ "qp"\ Cr\ tkn'3"qh'yi\ g'ko\ o\ gf\ kcyn{\normaligned} rt\ gegf\ kpi\ "ecngpf\ ct"{\gct"cpf\ "gpf\ kpi\ "qp"O\ ctej\ "53"qh'yi\ cv'r\ ct\ kewct"ecngpf\ ct"{\gctO'\ }}$

Vj gtg"ctg"uki pkhecpv"f kthgtgpegu"dgy ggp"Kpf kcp"I CCR"cpf "RPF" "CUHO"Ceeqtf kpi n(. "vj g"f gi tgg"vq"y j kej "vj g"Tgucvgf" Hpcpekch"Ucvgo gpvu"kpenvf gf "kp"vj ku"Ftchv"Rtqur gewu"y kni'r tqxkf g"o gcpkpi hwiliphqto cvkqp"ku"gpvktgn("f gr gpf gpv'qp"vj g" tgcf gtøu"gxgniqhlbco krketky kyj "Kpf kcp"ceeqwpvkpi "r tcevkegu. "Kpf kcp"I CCR. "RPF" "CU+"vj g"Eqo r cpkgu"Cev"cpf "vj g"UCDK" KEFT+"Tgi wcvkqpu. "qp"vj g"Tgucvgf "Hkpcpekch" Ucvgo gpvu"r tgugpvgf "kp"vj ku"Ftchv"Rtqur gewu"uj qwf "ceeqtf kpi n("dg"nko ksgf 0'Cn j qwi j "y g"j cxg"kpenwf gf "c"uwo o ct {"qh" s wcrkscvkxg"cpf "s wcpvkcvkxg"f kthgtgpegu"dgy ggp"Kpf kcp"I CCR"cpf "RPF" "CU+"qwt "hkpcpekch"ucvgo gpvu"tgr qtvgf "wpf gt" RPF" "CU+"kp"hwwtg"ceeqwpvkpi "r gtkqf u'o c { "pqv'dg"f ktgevn("eqo r ctcdng"y kj "qwt "hkpcpekchlucvgo gpvu"j knqtkecm("r tgr ctgf" kp"ceeqtf cpeg"y kj "Kpf kcp"I CCR. "kpenwf kpi "f knenqugf" "kp"yj ku"Ftchv"Rtqur gewu0"[qw'uj qwrf "eqpuwnv" qwt "qy p"cf xkuqtu" tgi ctf kpi "uwej "f kthgtgpegu"cpf "vj gkt "ko r cev'qp"qwt "hkpcpekch" cvc0'

Cp{"r gtegpvci g"co qwpvu."cu"ugv"hqtyj "lp" 5TkmHcevqtuö."5Qwt 'Dwulpguuö."5O cpci go gpvvu'Fkwwulqp"tpf 'Cpcn(ululqht' HlpcpelcnHqukkqp"tpf 'Tguwnu'qhlQrgtcvkqpuö"cpf "gnugy j gtg"lp"vj ku"Ftchv"Rtqur gewu"wprguu"qyj gty kug"lpf lecvgf."j cxg" dggp"ecrewrcygf "qp"vj g"dcuku"qh"vj g"Eqo r cp{øu"tgurcygf "hpcpelcn"urcygo gpvu"r tgrctgf "kp"ceeqtf cpeg"y kyj "vj g"crrnlecdrg" r tqxkulqpu"qh"vj g"Eqo r cplgu"Cev."Kpf kcp"I CCR"cpf "tgurcygf "lp"ceeqtf cpeg"y kyj "UGDK*KEFT+"Tgi wrckqpu."cu"urcygf "lp" vj g"tgrqtv"qh"qvt"Uccwqt {"Cwf kqt."ugv"qw"lp"vj g"ugevkqp"kwrgf "+HlpcpelcnUccwgo gpvu"cu"Tgurcvgf ø"dgi kppkpi "qp"rci g" 359'qh"vj ku"Ftchv'Rtqur gewu"

EWITGPE['CPF'WPKVU'QHRTGUGPVCVKQP"

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Kp'y ku'F tchv'Rtqur gewwu.'wprguu'y g'eqpvgzv'qy gty kug'tgs wktgu.'cm'tghgtgpegu'vq'''

- $c+ \quad \div T wr \ gguø'qt" \div \ \emptyset'qt" \div Tu0b'qt" \div RP \ T ø'ctg" \lor q" Kpf \ kcp" twr \ ggu. " \ i g" qlhhekcn'ewttgpe \{ \ ''qh' \ i g' T gr \ wdnke ''qh' Kpf \ kc=''' \ \ i' \ \ \ i' \ \ \ i' \$
- d+ ÷WU'F qmctuø'qt"÷WUF ø'qt"÷&ø'ctg"vq"Wpksgf "Uvcvgu"F qmctu."vj g"qhhkekcn'ewttgpe{ "qh'vj g"Wpksgf "Uvcvgu"qh" Co gtkec0"

Cm'tghgtgpegu''vq''yj g''y qtf ":Ncnj wa'':Nceø'qt'':Ncewa''o gcpu'':Qpg''j wpf tgf "yj qwwcpf ø'cpf "yj g''y qtf ":O kmkqpø'' o gcpu'':Vgp''ncnj ø'cpf "yj g''y qtf ":Etqtgø'o gcpu'':Vgp''O kmkqpø'cpf "yj g''y qtf ":Etqtgø'o gcpu'':Vgp''O kmkqpø''

Cp{"r gtegpvci g"co qwpvu."cu"ugv"hqtyj "kp"õ*TkunlHcevqtu*ö."6*Qwt 'Dwulpguu*ö."6*O cpci go gpv)u'F kwwulqp"cpf 'Cpc q uku'qhl' Hlpcpelc nEqpf kkqp'cpf 'Tguwnu'qhQr gt c dqp uö* "cpf "gnugy j gtg'kp"tj ku'F tchv'Rtqur gewvu. "wprguu'qyj gty kug'kpf kecvgf ."j cxg" dggp"ecrewrcygf "dcugf "qp"qwt"hkpcpelcn'iwcvgo gpwi'cu"tguvcvgf "r tgr ctgf "kp"ceeqtf cpeg"y kuj "Kpf kcp"I CCRO"



FGHIP KVKOPU"

Hqt"f ghlpkklqpu."r rgcug"ugg"yj g"Ej cr vgt"\kngf 'ōFghlpkhlqpu'cpf 'Cddt gxkcvlqpuö'\qp"r ci g"6'\qh"yj ku"F tchv'Rtqur gewu0'\qp"yj g"
Ugevlqp"\kngf "ōO chp'Rt qxhllqpu'qh'Ct vlengu'qh'Cuuqekcvlqpö'\dgi kppkpi "qp"r ci g"442"qh"yj ku'F tchv'Rtqur gewuu 'f ghlpgf "\gto u"
j cxg'yj g"o gcpkpi 'i kxgp"\q"uwej "\gto u"kp"yj g"Ctvlengu'qh'Cuuqekcvlqp0'

KPFWUVT['CPF'O CTMGV'FCVC"

Wprguu''ucvgf "qvj gty kug. "kpf wuxt {"cpf "o ctmgv'f cvc"wugf "vj tqwi j qw"vj ku"F tchv'Rtqur gewu"j cu''dggp"qdvckpgf "qt"f gtkxgf "htqo "KpvgtpcnEqo r cp {"tgr qtwi'cpf "kpf wuxt {"cpf "I qxgtpo gpv'r wdrkeckqpu."r wdrken{"cxckrcdrg"kphqto cvkqp."cpf "uqwtegu0' kpf wuxt {"cpf "I qxgtpo gpv'r wdrkeckqpu"i gpgtcm("uvcvg"vj cv''vj g"kphqto cvkqp"eqpvckpgf "kp"vj qug"r wdrkeckqpu"j cu''dggp" qdvckpgf "htqo "uqwtegu''dgrkgxgf "vq"dg"tgrkcdrg"dw"vj cv''vj gkt"ceewtce {"cpf "eqo r rgvgpguu"ctg"pqv'i wctcpvggf ."cpf "vj gkt" tgrkcdkxk{"ecppqv'dg"cuuwtgf OCnij qwi j ."qwt"Eqo r cp {"dgrkgxgu"vj cv'kpf wuxt {"f cvc''wugf "kp"vj ku'F tchv'Rtqur gewwi'ku'tgrkcdrg." kv'j cu''pqv'dggp'kpf gr gpf gpvn{"xgtkklyf "gkvj gt"d {"vj g"Eqo r cp {"qt"vj g"Ngcf "O cpci gt"qt"cp {"qh''vj gkt"tgur gevkxg"chhkrkcyu'qt" cf xkuqtu0'

 $\label{thm:linear} Hwt j gt. "ij g"gz vgpv'vq" j kej "ij g"kpf wwt { "cpf "o ctngv" f cvc" r tgugp vgf "kp" ij ku" F tchv'Rt qur gewu'ku" o gcpkpi hwnf gr gpf u'qp" ij g" tgcf gt)u'hco krkctk\{ "y kaj "cpf "wpf gtuvcpf kpi "qh "ij g"o gvj qf qnqi kgu"wugf "kp"eqo r krkpi "uwej "f cvc0Vj gt g"ctg"pq"uvcpf ctf "f cvc" i cvj gt kpi "o gvj qf qnqi kgu"kp" ij g"kpf wwt { "kp"y j kej "y g"eqpf wev'qwt "dwukpguu. "cpf "o gvj qf qnqi kgu"cpf "cuuwo r kqpu"o c { "xct { "y kf gn(" co qpi "f khhgtgpv" kpf wwt { "uqwtegu0' Ceeqtf kpi n(." kpxguvo gpv' f gekukqpu" uj qwrf "pqv" dg" dcugf "uqngn("qp" uwej "kphqto cvkqp0") }$

Ko"ceeqtf cpeg"y kij "vj g"UGDK*KEFT+Tgi wcvkqpu."õ*Dc ukullqt 'Kuwg'Rt legö' (*qp"r ci g"96'qhl'vj ku"F tchv'Rtqur gewu"kpenwf gu" kphqto cvkqp"tgrcvkpi "vq"qwt"r ggt"i tqwr "gpvkkgu0'Uwej "kphqto cvkqp"j cu"dggp"f gtkxgf "ltqo "r wdrlen("cxckrcdrg"uqwtegu."cpf" pgkj gt"y g."pqt" vj g"NO" j cxg"kpf gr gpf gpvn("xgtkhlgf"uwej "kphqto cvkqp0'Uwej "f cvc"kpxqrxgu"tkumu."wpegtvckpvkgu"cpf" pwo gtqwu"cuuwo r vkqpu"cpf "ku'uwdlgev'vq"ej cpi g'dcugf "qp"xctkqwu'hcevqtu."kpenwf kpi "vj qug"f knewungf "kp"õ*T kunlHcevqt uö*"qp" r ci g"46"qh'vj ku'F tchv'Rtqur gewu0'

GZEJ CPI G'TCVGU''

Vj g'hqmqy kpi "vcdng'ugvu'hqtyj .'hqt'\j g'r gtkqf u'kpf kecvgf .'kphqto cvkqp''y kyj 'tgur gev'\q''\j g''gzej cpi g'tcvg''dgwy ggp''\j g''Kpf kcp'' Twr gg''cpf ''qvj gt'hqtgki p''ewttgpekgu<''

Ewttgpe{''	Cu'qp'F gego dgt '52.'4245''
3"Ej kpgug"[wcp"	33098"

Uqwteg<'y y y OddkOqti Op'"

Cmilki wtgu'ctg'tqwpf gf 'wr ''vq''w q''f geko cnu''



HQTY CTF'NQQMRPI 'UVCVGO GPVU''

Cm'uvcyo gpwl'eqpvckpgf "kp"y ku''F tchv''Rtqur gewu''y cv'ctg"pqv'uvcyo gpwl'qh"j knqtkecn'hcev'eqpukwwg''hqty ctf/mqmkpi "uvcyo gpwl''Cm'uvcyo gpwl'tgi ctf kpi "qwt"gzr gevgf "hkpcpekcn'eqpf kkqp"cpf "tguwnu''qh''qr gtcvkqpu. "dwukpguu."r ncpu''cpf "rtqur gewl''ctg"'hqty ctf/mqmkpi "uvcyo gpwl''Vj gug''hqty ctf/mqmkpi "uvcyo gpwl'kpenwf g"uvcyo gpwl'y kyj "tgur gev''vq''qwt'' dwukpguu''urtcygi {.'qwt'tgxgpwg''cpf 'rtqhkcdkrk/.'qwt''rtqlgewl''cpf ''qyj gt''o cwgtu'f knewnugf 'kp''y ku'F tchv'Rtqur gewu'tgi ctf kpi "o cwgtu'y cv'ctg'pqv'y knqtkecn'hcewl'Kpxguvqtu''ecp'i gpgtcm('kf gpvkh('hqty ctf/mqmkpi 'ivcyo gpwl'd{ ''y g'wug'qh'ygto kpqmi {"uwej ''cu'ŏcko ö.'öcpvkekr cvgö.'ödgrkgxgö.'ögzr gevö.'öguvko cvgö.'ökpvgpf ö.'öqdlgevkxgö.'ör ncpö.'ör tqlgevö.'öo c{ö.'öy kmö.'öy kmi' eqpvkpwgö.'öy kmi' wtuwgö.'öeqpvgo r ncygö.'öi qcnö.'ör tqr qugö.'öy kmi'kngn('tguwnö.'öy kmi'uggn'yqö'qt''qyj gt'y qtf u''qt'' rj tcugu'qh'uko knct'ko r qtvOCmlhqty ctf 'mqmkpi 'uvcyo gpwl'*y j gyj gt'o cf g'd{ ''wu''qt''cp{ ''y ktf 'r ctv(+'ctg'' tgf kevkqpu''cpf ''ctg'' uwdlgev''q''tkumu. "wpegtvckpvkgu''cpf ''cuuwo r vkqpu''cdqw''wu''y cv''eqwrf ''ecwug''cewcn''tguwnu''vq''f kthgt''o cvgtkcm(''htqo ''y qug'' eqpvgo r ncvgf ''d{ ''y g'tgngxcpv'hqty ctf/mqmkpi 'uvcyo gpv0'

Hqty ctf/mqmhpi "uwcyo gpvu"tghrgev"qwt"ewttgpv"xkgy u"y kj "tgur gev"vq"hwwtg"gxgpvu"cpf "ctg"pqv"c"i wctcpvgg"qh"hwwtg" r gthqto cpeg0'Vj gug"uwcyo gpvu"ctg"dcugf "qp"qwt"o cpci go gpvyu"dgrkghu"cpf "cunwo r klqpu."y j kej "kp"wtp"ctg"dcugf "qp" ewttgpvn("cxckrcdrg"kphqto cvkqp0'Cnj qwi j "y g"dgrkgxg"vj g"cunwo r klqpu"wr qp"y j kej "vj gug"hqty ctf/mqmkpi "uwcyo gpvu"ctg" dcugf "ctg"tgcuqpcdrg."cp{"qh"vj gug"cunwo r klqpu"eqwrf "r tqxg"vq"dg"kpceewtcvg. "cpf "vj g"hqty ctf/mqmkpi "uwcyo gpvu"dcugf "qp"vj gug"cunwo r klqpu"eqwrf "dg"kpcqttgev0'

Hwt j gt. "j g"cewcnit guwnu" o c { "f khipt" o cvgtkcm("htqo "j qug"uwi i guvgf "d { "ij g"hqty ctf /mqmhpi "uvcvgo gpvu" yu" i kumu"qt" wpegtvckpvkgu"cuuqekcvgf "y kij "qwt"gzr gevckqpu"y kij "tgur gev'vq."dwbpqv'hko kogf "vq."tgi wrcvqt { "ej cpi gu"r gtvckpkpi "vq" j g"qwt" Ugevqt "kp"Kpf kc"y j gtg"y g"j cxg"qwt "dwukpguugu"cpf "qwt"cdktk/ "vq"tgur qpf "vq" j go ."qwt"cdktk/ "vq"uweeguuhwn("ko r ngo gpv" qwt"uwtcvgi { ."qwt" i tqy yj "cpf "gzr cpukqp." wej pqmi kecn" ej cpi gu "qwt" gzr quwtg" vq" o ctngv"tkumu. "i gpgtcn" geqpqo ke "cpf" r qrkkecnieqpf kkqpu"kp"Kpf kc"cpf "qxgtugcu"y j kej "j cxg"cp"ko r cev'qp"qwt"dwukpguu"cevkxkkgu"qt "kpxguvo gpvu." yj g"o qpgvct { "cpf "hkuecnir qrkekgu"qh"Kpf kc"cpf "qvj gt"lwtkuf kevkqpu"kp"y j kej "y g"qr gtcvg. "kphrcvkqp." fghrcvkqp. "wpcpvkekr cvgf "xqrcvktk/ "kp" kpytguv"tcvgu. "lntgki p"gzej cpi g"tcvgu." gs wk/ "r tkegu"qt"qvj gt"tcvgu"qt"r tkegu." yj g"r gthqto cpeg"qh"yj g"hpcpekcn'o ctngwt"p" Kpf kc"cpf "i ndcm(."ej cpi gu'kp"f qo guvke"ncy u. "tgi wrcvkqpu"cpf "czgu." ej cpi gu'kp"eqo r gvkkqp"kp"qwt "kpf wut { "cpf "hpekf gpeg" qh"cp{ "pcwtcn"ecroo kkgu"cpf" I"qt"cewt"qh"xkqngpegg'Qvj gt"ko r qtvcpv"hcevqtu" yj cv"eqwf "ecwug"cewcn"tguwnu" q"f khipt" o cvgtkcm("htqo "qwt"gzr gevcvkqpu"kpenvf g."dw'ctg"pqv'nko kgf" "q."yj g"hqmy kpi <"

- Korcev'qh'vjg'EQXKF/3; "r cpf go ke"qp"qwt"dwukpguu'cpf "qr gtc-kqpu="
- I gqi tcrj kecn'eqpegpvtcvkqp"qh'dwukpguu'vq'ng{ "ekkkgu'''
 - Uki pkhlecpv'kpet gcugu'kp''r tkegu''qh ''qt''uj qt vci gu''qh ''qt''f kut wr vkqp''kp''uwr r n{ ''qh''ncdqwt ''cpf ''ng{ ''dwkrf kpi ''o cygt kcn="
- Qwt "cdkrkv{ "vq"cwtcev."tgvckp"cpf "o cpci g"s wcrkhkgf "r gtuqppgn="
- I gpgtcn'geqpqo ke"cpf "dwukpguu"eqpf kkkqpu"kp"Kpf kc"cpf "qyj gt"eqwpvtkgu="
 - Qwt "cdkrkx{ "\q"uweeguuhwm{ 'korngo gpv'qwt" i tqy yi "uvtcvgi { "cpf "gzrcpukqp" rncpu. "vgej pqnqi kecn'ej cpi gu="
 - Ej cpi gu'kp'hkuecn'geqpqo ke''qt'r qrkkecrleqpf kkqpu'kp'Kpf kc="
 - Kohncukap. "If ghrcukap." wpcpukekr cvgf "wwt.dwrgpeg" kp" kpvgt guv't cvgu. "gs wks{"r t kegu" qt "qvj gt "t cvgu" qt "r t kegu="
- Vj g"qeewttgpeg"qh"pcwtcn"f kucungtu "qt"ecmo kukgu=""
 - Heknutg'\q'cf cr v'\q'\j g'ej cpi kpi 'luegpetkqu'kp'qwt'kpf wuxt { 'qh'qr gtevkqp'o c { 'cf x gtugn('chhgev'qwt 'dwukpguu'cpf 'hkpepeken' eqpf kukqp="
- Hcknwtg'\q'qdvckp'cp{ "crrtqxcnı."rkegpugu."tgi kuvtcvkqpu'cpf "rgto kwu'kp"c'\kogn("ocppgt="
- Eqphrlev'qh'Kpvgtguv'y kij 'i tqwr 'eqo r cpkgu. 'vj g'r tqo qvgt'i tqwr 'cpf 'qvj gt'tgrcvgf 'r ctvkgu''
- Ej cpi gu'kp''yj g''xcnwg''qh''yj g''Twr gg''cpf ''qyj gt''ewttgpekgu=''
- Qyj gt 'hcevqtu'dg{ qpf 'qwt 'eqpvtqn=cpf "

"

Qwt 'cdkrkx{ 'vq'o cpci g'tkumu'vj cv'ctkug'htqo 'vj gug'hcevqtu0'



Hqt'hwt y gt'f kwewukqpu'qh'heevqtu''y cv'eqwrf 'ecwug'qvt 'cewcrit guwwu'\q'f khhgt. 'r ngcug'ugg''y g'ugevkqp''kargf 'õ**TkurlHcevqtuö**." ej cr vgtu''vkargf "õ**Qwt'Dwukpguuö'bpf'ōO cpci go gpww'Fkwewukqp'bpf'Cpcn(uku'qh'HkpcpekcnlEqpfkkqp'bpf'Tguwwu'qh'' Qr gt cvkqpuö''dgi kppkpi "qp'r ci gu''46."; 5"cpf '362"qh''y ku''F tchv'Rtqur gewu.''tgur gevkxgn(0'**

 $P\ gksj\ gt"qwt"Eqo\ r\ cp{."qwt"F\ ktgevqtu."qwt"Rtqo\ qvgtu."yj\ g"Ngcf"O\ cpci\ gt"pqt"cp{"qh''yj\ gkt"tgur\ gevkxg"chhkkvgu"j\ cxg"cp{"qdrki\ cvkqp"\q'wrf\ cvg"qt"qyj\ gty\ ktg"tgxktg"cp{"twcvgo\ gpwt"tghrgevkpi\ "ektewo\ uvcpegu"ctkukpi\ "chtgt"'yj\ g"f\ cvg"j\ gtgqh'qt"\q'tghrgev'\ yj\ g'qeewttgpeg"qh'wpf\ gtn{kpi\ "gxgpvu."gxgp'kh'yj\ g"wpf\ gtn{kpi\ "cutwo\ r\ vkqpu"f\ q'pqv'eqo\ g'vq'htwkkqp0%p'ceeqtf\ cpeg'y\ kyj\ 'UGDK'\ tgs\ wktgo\ gpvu."qwt"Eqo\ r\ cp{"y\ kn''gpuwtg"yj\ cv'kpxguvqtu"kp"kf\ kc"ctg"kphqto\ gf\ "qh''o\ cvgtkcn'f\ gxgnqr\ o\ gpvu''htqo\ "yj\ g"f\ cvg"qh''\ yj\ ku'F\ tchv'Rtqur\ gewu''wpvkn'yj\ ku''ko\ g''qh''y\ g''t\ tcpv'qh''ktwkpi\ "cpf\ "vtcf\ kpi\ "r\ gto\ kuukqp''d{"'yj\ g"Uqen'Gzej\ cpi\ g0''}$



UGEVKQP'KKZUWO O CT['QH'KUWG'FQEWO GPV''

QXGTXKGY 'QH'RPFWUVT["

Vj g"tghqto u"qh"vj g"3;; 2u"j cxg"dggp"cuuqekcvgf "y kj "vj g"gzr cpukqp"qh"vj g"ugtxkeg"ugevqt"kp"Kpf kc0'O kf y c{ "vj tqwi j "vj g" 3; : 2u."vj g"ugtxkeg"ugevqt"dgi cp"vq"gzr cpf ."dw'kk'vqqm'qhh'kp"vj g"3; ; 2u"y j gp"Kpf kc"uvctvgf "c"ugtkgu"qh"geqpqo ke'tghqto u"kp" tgur qpug"vq"c"ugtkqwu"dcrcpeg"qh'r c{o gpwu'kuuwg0'

Vj g'ugtxlegu'ugevqt'ku'pqv'qpn(''yj g'f qo kpcpv'ugevqt'kp''Kpf kcøu''I F R'dw'j cu'cnuq''cwtcevgf ''uki pkhlecpv'hqtgki p''kpxguvo gpv.'' j cu''eqpvtkdwgf ''uki pkhlecpv(''qr'gzr qtw''cpf ''j cu''r tqxkf gf ''rcti g/uecrg''go r m{o gpv0'Kpf kcøu''ugtxlegu''ugevqt''eqxgtu''c''y kf g'' xctkgv(''qh''cevkxkkgu''uwej ''cu''vtcf g.''j qygn'cpf ''tguvcwtcpw.''tcpur qtv.''uvqtci g''cpf ''eqo o wpkeckqp.''hpcpekpi .''kpuwtcpeg.''tgcn' guvcyg.''dwukpguu''ugtxkegu ''eqo o wpkk{.''uqekcn'cpf 'r gtuqpcn'ugtxkegu ''cpf ''tgtxkegu'cuuqekcvgf 'y kj ''eqpuvtwekqp0'Vq''gpj cpeg'' Kpf kc)u''eqo o gtekcn'ugtxkegu''gzr qtvu.''uj ctg'kp''yj g''i mqdcn'ugtxkegu''o ctmgv'htqo ''505' ''cpf 'r gto kv'c''o wnk/hqnf ''gzr cpukqp''kp'' yj g''I F R.''yj g''i qxgtpo gpv'ku''cnuq''o cmkpi ''uki pkhlecpv'ghhqtvu''kp''yj ku'f ktgevkqp0'

Hqt 'hwt y gt 'f gyckru. 'r ngcug't ghgt '\q' y g''ej cr ygt '\knrgf '\operatorname kopf wwt { 'Qxgt xkgy \operatorname o''dgi kppkpi ''qp 'Rci g'': 4 ''qh'\y ku'F tchv'Rtqur gewu0''

QXGTXKGY 'QH'DWURPGUU'

Qwt'Eqo r cp{ 'kı'gpi ci gf 'kp'ij g'dwıkpguu'qhi'r tqxkf kpi 'lugtxkegu'd{ 'y c{ 'qhi'r tg/vtgcvo gpv'cpf 'r qy f gt 'eqc vkpi 'qhi'cnwo kpkwo "gz vtwıkqpu''kp''Ctej kgev'cpf 'Tgcn'Gucvg''Kpf wuxt{0'Vj g''r tqeguu'dgi kpu'y kj "c''eqo r tgj gpukxg''engcpkpi .''y j gtg''j g''vcti gvgf "uwthceg"qhi'cnwo kpkwo "gz vtwıkqpu''ku''y qtqwi j n("engcpugf "qh''cp{ "f ktv."i tgcug."qt "eqpvco kpcpvu''y cv'o ki j v'ko r gf g''y g'' uwdugs wgpv'eqcvkpi 'r tqeguu'0Hqmqy kpi ''y ku. 'c'intcvgi ke'ej go kecnluqnwkqp'ku''cr r kgf ''q'gpj cpeg''y g''cf j gulqp'qh''y g'r qy f gt'' eqcvkpi 0'Vj ku''kpxqnxgu''y g''cr r necvkqp''qh''cp''cekf ke''uqnwkqp''hqt 'uwthceg''gvej kpi ''qt''y g''wug''qh''c''ur gekcnk gf ''r tgvtgcvo gpv'' ci gpv''qq''qr vko k g''uwthceg''y gwcdknk{0'

 $\label{eq:continuity} \textit{Hqt'hwty' gt'f' gvcknu.''r ngcug'tghgt''q''ej~cr~vgt''kwrgf'' \"{o}\textit{Qwt''}\textit{Dwwlpguu\"{o}''} dgi~kppkpi~'qp''Rci~g''; 5''qh''yj~ku'F~tchv''Rtqur~gewww0''}$

QWT'RTQO QVGTU'

Rtqo qvgtu"qh"Qvt"Eqo r cp{"ctg"O t0'Ici lkv"Upi j "F j kmpp"cpf "O tu0'P cxpggv"Mcwt0'Hqt "hvtvj gt"f gvcknu"r ngcug"tghgt "vq"vj g" ej cr vgt "kxrgf "ö*Qwt 'Rtqo qvgtu'cpf 'Rtqo qvgt' I tqwr* "ö"dgi kppkpi "qp"Rci g"353"qh"vj ku"F tchv'Rtqur gewu0'

FGVCKNU'QH'VJ G'KUWG''

Gs wks{ 'Uj ct gu'Qhtgt gf '*3+"	Kuuwg"qh"wr vq"6.38.622"Gs wkw{ "Uj ctgu"qh" 32022"gcej "
Rtgugpv'Knuwg''qh'Gs wkv{ 'Uj ctgu''d{ ''qwt'Eqorcp{ ''*4+''	hqt"ecuj "cv"c"rtkeg"qh" "] _'rgt"Gswkw{"Ujctg"%kpenwfkpi"
	rtgokwo "qh" "] _"rgt"Gswkw{"Ujctg+"ciitgicwkpi"vq" "
] _''Ncnj 0'
Qwv'qHý j kej <'	
Oct ngv'O engt 'T gugt xevlqp'Rqt vlqp'''] _'Gs wkv{ ''Uj ctgu'qh' ''32022''gcej 'hwm{ 'r ckf/wr ''qh'qwt''
"	Eqorcp{"hqt"ecuj "cv"c"rtkeg"qh" "] _"rgt"Gswkw{"Ujctg"
	*kpenwfkpi "rtgokwo "qh" "] _"rgt"Gswkw{"Ujctg+"
	ciitgickloi'kq"] _'Ncnj0'
Pgv'Kung'tq'tj g'Rwdrle"] _'Gs wkx{ "Uj ctgu'qh" '32022'gcej 'hqt'ecuj 'cv'c'r tkeg'qh"
"	'] _'r gt 'Gs wkw{ 'Uj ctg'*kpenwf kpi 'r tgo kwo 'qh' '] _'r gt'
	Gs wkw{ "Uj ctg+"ci i tgi cvkpi "vq" "] _Ncmj 0"'
Qwv'qh'y j kej <'	
Cmqecvlqp''vq'Tgvcld'Kpf lxlf wcd'Kpxguvqt u'lqt''wr vq'' 4022''] _'Gs wkx{ "Uj ctgu'qh" 32022"gcej 'hqt"ecuj 'cv'c'r tkeg'qh'
Nenj ''	'"]_"rgt"Gswkw{"Ujctg"*kpenwfkpi"rtgokwo"qh""]_"rgt"
	Gs wkx{ "Uj ctg+"ci i tgi cvkpi "vq"] _"Ncmj 0"
Cmqecvkqp'vq'Pqp/KpuskvvvkqpcnKpxgusqtu'hqt'cdqxg'' 4022''] _'Gs wkx{ "Uj ctgu'qh" 32022"gcej 'hqt'ecuj 'cv'c'r tkeg'qh"
Nenj "	"] _'r gt 'Gs wkw{ 'Uj ctg'*kpenwf kpi 'r tgo kwo 'qh' '] _'r gt '
	Gs wkw{"Uj ctg+"ci i tgi cvkpi "vq"] _'Ncnj 0'

QDLGEV'QH'VJ G'KUWG''

Vj g'P gv'Rtqeggf u'qh'vj g'Kuuwg'ctg'r tqr qugf 'vq'dg'wugf 'kp'ceeqtf cpeg'y kij 'vj g'f gvckru'r tqxkf gf 'kp'vj g'hqmqy kpi 'vcdng<'

43"



* 'kp'Nc mj u+''

Rct vlewret u'	Co qwpv''
Hwpf kpi "Ecr kx:n'Gzr gpf kwtg"\qy ctf u"kpuvcmx\qp"qh"Rrcpv"("O cej kpgt { "kp"qwt "gzkuvkpi "r tgo kugu"	36: 087"
Y qtmkpi "Ecr kxcn'T gs wktgo gpvu"	422@2"
I gpgtcriEqtr qtcvg''Rwtr qug'''] _"
Vqveri'] _''

RTG'6'KUWG'UJ CTGJ QNFIPI 'QH'QWT'RTQO QVGTU'CPF'RTQO QVGT'I TQWR'CU'C'RGTEGPVCI G' QH'VJ G'RCIF/WR'UJ CTG'ECRIVCN'QH'VJ G'EQO RCP["

Form at ('bWDt ac armt''	Rt g'b'Kang''		
Ecvgi qt{'qh'Rt qo qvgt''	Pq0\qhlUj ct gu' Cu'\c'' '\qhlf c\f /wr 'Gs w 'E		
30 Rtqo qvgtu"	; .4; .: 36"	;;0:"	
40 Rtqo qygt"I tqwr"	3: 8"	2@4"	

UWO O CT['QH'TGUVCVGF'HRPCPEKCN'KPHQTO CVKQP''

* 'kp'Nc mj u+"

Rct viewct u'	Hqt '\j g'l gt kqf '' Hqt '\j g'llpcpekcn{ gct 'gpf gf '\qp'' gpf gf '\qp''		of gf 'qp''	
	Ugr vgo dgt '52.'' 4245"	O ctej '53.'' 4245''	O ctej '53.'' 4244''	O ctej '53.'' 4243''
Uj etg'Eer ken'	5@2"	5@2"	5022"	5@2"
Tgugtxgu'cpf 'uwtr nwu''	322079"	89056"	35027"	*2084+"
P gv'Y qtyj "	325079"	92056"	38027"	405: "
Vqvcn'l Kpeqo g"	4540, 8"	57: 0, 6"	35; 063"	/"
Rtqhk/'chgt''Vcz''	55044"	76052"	35089"	*2036+"
Vqvcn'Dqttqy kpi u"	560, 2"	; 0, 2"	32032"	2042"
Qvj gt 'Hlpcpek:rlKphqto cvkqp''	"	"	"	"
Dcuke" ('Fknwgf 'GRU'* +'*Rquv'Dqpwu+"	5079"	70 6"	3069"	*2023+"
Tgwtp"qp"Pgv"yqtyj "* +"	5402: "	99 ® ; "	: 7039"	*7@3+"
P gv'Cuugv'Xcnwg'Rgt 'Uj ctg'* +'*Rtg/Dqpwu+'"	567045"	45606: "	75072"	90, 5"
P gv'Cuugv'Xcnwg'Rgt''Uj ctg'* +'*Rquv'Dqpwu+'"		9078"	3095"	2048"

S WCNIHIE CVIQP 'QH'VJ G'CWF IVQTU'

Vj g'Cwf kqtøu'Tgr qtv'qh'Cwf kgf 'Tgurcygf 'Hlpcpekcri'Ucvgo gpwi'hqt''y g'r gtkqf 'gpf gf 'qp''Ugr vgo dgt'52.'4245'cpf 'Hlpcpekcri' [gctu'gpf gf 'qp''O ctej "53.'4245.'4244''cpf ''4243''f qgu''pqv''eqpvckp''cp{ "s wcrkhlecvkqp''y j kej "j cxg''pqv''dggp''i kxgp''ghlgev''vq'' kp''Tgurcygf ''Hlpcpekcri'Ucvgo gpw0'

UWO O CT['QH'QWUVCPFIPI 'NKVK CVKQP'CTG'CUHQNNQY U'

Cu''qp''f cvg''qh''y ku''F tchv'Rtqur gewu. ''qwt ''eqo r cp{ ''j cu''pq''qwuvcpf kpi ''Nkki cvkqp0'

Hqt" yi g" f gycku" qh" rkki cylqp" r tqeggf kpi u." r rgcug" tghgt" yi g" ej cr ygt" vkærgf "õ**Qwuwc pf kpi ''Nkki cylqpu''cpf ''O cygt kcn''** Fgxgnqro gpvuö"dgi kppkpi "qp"r ci g"376"qh''yi ku'F tchy'Rtqur gewu0'

TKUMHCEVQTU"

Kpxguvqtu'uj qwrf 'tgcf 'ej cr vgt'\kngf 'ŏ*TkunHcevqt u*ö'dgi kppkpi 'qp'r ci g'46'qh'vj ku'F tchv'Rtqur gewu0'

UWO O CT['QHEQP VIPI GP V'NICDININVIGU'

Qwt 'Eqo r cp{ 'f qgu'pqv'j cxg'cp{ 'Eqpvkpi gpv'Nkcdkrkkgu'cu'qp'f cvg'qh'vj ku'F tchv'Rtqur gewuu0'

Hqt'lhwtyj gt'lphqto cvlqp. 'r ngcug'ugg'ö Hlp c pelc d Unc vgo gp w/c u'T guwc vgf ö'dgi lpplpi 'qp'r ci g'359'qh'yj ku'F tchv'Rtqur geww.0'

UWO O CT['QH'TGNCVGF'RCTV['VTCPUCEVKQPU'

 $Qwt"Eqo\ r\ cp{"ij\ cu"gpvgtgf" lipvq"egtvclip" vtcpucevlqpu"y\ kij\ "qwt"tgrcvgf" r\ ctvligu" lipenvf lipi\ "qwt"Rtqo\ qvgtu."Rtqo\ qvgt" I\ tqwr." F\ ktgevqtu"cpf "ij\ gkt"tgrcvlxgu"cu"o\ gpvlqpgf\ "dgrqy<""$



				* 'kp'Nc nj u+''
Rct vlewrct u'	Hqt '\j g'l gt kqf '' gpf gf '\qp''	Hqt 'vj g'hlpcpelcn{ gct 'gpf gf 'qp"		
	Ugr vgo dgt '52.'4245"	Octej '53.'4245''	Octej '53.'4244''	Octej '53.'4243"
Tgo wpgtcwqp"	5082"	38022"	205; "	/"
Tgpv'Rckf"	4062"	5082"	3072"	/"
O ckpvgpcpeg"ej cti gu'r ckf "	608: "	/"	/"	/"
Rwtej cugu'"	7508; "	: 5044"	4604; "	/"
Gzr gpugu''Rckf "	/"	3306; "	9076"	/"
Vqven'	8605: ''	336054"	5: 0, 3"	/''

Hqt"f gvckni"qh'vj g'Tgncvgf "Rctv{ "Vtcpucevkqpu"cu"tgrqtvgf "kp"vj g'Tguvcvgf "Hkpcpekcnı."r ngcug"tghgt "\$*HkpcpekcnUvcvgo gpvu" cu"tguvcvgf o'Tgncvgf 'Rctv{ 'Vtcpucevkqp* ö"dgi kppkpi "qp"r ci g"359'qh'vj ku"F tchv'Rtqur gewu0'

HIP CPEIPI 'CTTCPI GO GPVU'

Vj gtg"ctg"pq"hlpcpekpi "cttcpi go gpwi'y j gtgd{"qwt"Rtqo qvgtu."o go dgtu"qh"Rtqo qvgt"I tqwr."ij g"Fktgevqtu"qh"qwt"Eqo rcp{"cpf" vj gkt"tgrcvkxgu"cpf "hlpcpegf" vj g"r wtej cug"d{"cpf" qvj gt"r gtuqp"qh"ugewtkkgu"qh"qwt"Eqo rcp{"qvj gt"vj cp"kp" vj g"pqto cn" eqwtug"qh" vj g"dwukpguu"qh" vj g"hkpcpekpi "gpvkx{"f wtkpi "vj g"r gtkqf "qh"8"o qpvj u"ko o gfkcvgn{"rtgegfkpi "vj g"fcvg"qh"hktpi "qh" vj ku"Ftch/Rtqur gewu0'

Y GM J VGF 'CXGTCI G'RTHEG'QH'VJ G'GS WAV['UJ CTGU'CES WATGF'D['QWT'RTQO QVGTU'HP'VJ G' NCUV'QPG'[GCT'RTGEGFHPI 'VJ G'F CVG'QH'VJ HU'FTCHV'RTQURGEVWU'

 $\label{thm:condition} Vj\ g"y\ gki\ j\ wf\ "cxgtci\ g"r\ tkeg"qh"Gs\ wkw{ "Uj\ ctgu"ces\ wktgf\ "d{ "qwt"Rtqo\ qvgtu"kp"yj\ g"ncuv"qpg"{gct"r\ tgegf\ kpi\ "'yj\ g"f\ cvg"qh"yj\ ku"}} F\ tchv'Rtqur\ gewwu'ku'cu''dgnqy<''$

Pco g'qhiyj g'Rtqo qygt''	Y gli j vgf 'Cxgt ci g'Rt leg'* +''
Ici lk/'Upi j 'F j knqp''	P KN"
P cxpggv'Mcwt"	P KN"

Qwt"r tqo qvgtu"j cu"ces wktgf "Gs wkx{ "Uj ctgu"kp"yi g"rcuv"qpg" ¾3+"{ gct"r tgegf kpi "yi g"f cvg"qh"yi ku"F tchv"Rtqur gewu. "wpf gt"yi g" dqpwu"kuuwg. "yi wu"yi g"y gki j vgf "cxgtci g"r tkeg"qh"gs wkx{ "uj ctg"ku"P KN0"

CXGTCI G'EQUV'QH'CES WKUKVKQP''

Vj g"cxgtci g"equv'qh"ces wkukkqp"r gt "Gs wkv{ "Uj ctg"vq"qwt "Rtqo qvgtu"cu"cv'vj g"f cvg"qh'vj ku"F tchv'Rtqur gewuu'ku<"

Pco g'qhiyj g'Rt qo qygt''	Cxgt ci g'Equv'qh'Ces wkukslqp'* +''
Ici lk/Upi j "Fj kmp"	208"
P cxpggv'Mcwt"	2054"

RTG/KRQ'RNCEGO GP V'F GVCKNU''

Qwt 'Eqo r cp{ 'j cu'pqv'r tqr qugf 'cp{ 'Rtg/KRQ 'Rrcego gpv'kp' 'y ku' Kuuwg0'

KUUWG'QH'GS WKV['UJ CTGU'HQT'EQPUNFGTCVKQP'QVJGT'VJCP'ECUJ 'RP'VJG'NCUV'QPG'[GCT'''

Qý gt "ý cp"cu'f kænqugf "kp"õ*Ecr kænlUt wewt g*ö"dgi kppkpi "qp"r ci g"78"qh'ý ku'F tchv'Rtqur gewu."pq'Gs wkv{ "Új ctgu'j cxg"dggp" kuwgf "d{ "qwt "Eqo r cp{ 'hqt "eqpukf gtcvkqp"qý gt "ý cp"ecuj "cu'qp"ý g"f cvg"qh'ý ku'F tchv'Rtqur gewu.")

URNKY'TE QP UQNKF CVKQP 'QH'GS WKY['UJ CTGU'KP 'VJ G'NCUV'QP G'[GCT''

Qvj gt"vj cp"cu"f kuenqugf "kp"õEcrkvcd*Utwewtgö"dgi kppkpi "qp"r ci g"78"qh"vj ku"F tchv"Rtqur gewu."qwt"Eqo r cp{"j cu"pqv" wpf gtvcngp"c"ur rkv'qt"eqpuqrkf cvqp"qh"vj g"Gsvkvv4"Uj ctgu"kp"vj g"qpg"{gct"r tgegf kpi "vj g"f vg"f vg"h"vj ku"F tchv'Rtqur gewu.0""

UGDKGZGO RVKQP'''

Qwt'Eqorcp{'j cu'pqv'crrnlgf'qt'tgeglxgf'cp{"gzgorvlqp'ltqo"eqorn(lpi "y kyj"cp{'rtqxkulqpu'qh'Ugewtklgu'Ncy"d{"UGDKI"



UGEVKQP'KKK'TKLM'HCEVQTU'

Cp'hpxguo gpv'hp'Gs who{'Uj ctgu'hpxqnxgu'c'j ki j 'f gi tgg'hhtkun0[qw'tij qwrf 'ectghwnt' eqpulf gt 'cntij g'hpto cwlap 'hp'tj ku''
Ftch'Rtqur gewu.' hpewrf hpi 'tj g't kunu'cpf 'wpegt who ygu'f guet ldgf 'dgny.' idglat g'o cmlpi 'cp'hpxguo gpv'hp'qwt'Gs who{''
Uj ctgu0 Kp'o cmlpi 'cp'hpxguo gpv'f gekulap.' htqur gewxg'hpxguoqtu'o wuw't gnt'hp'tj gkt'yy p'gz co hpcwlap 'qh'dywt' Eqo r cp{''
cpf'tj g'igto u'qh'tj ku'Kuwg'hpenwf hpi 'tj g'o gt ku'cpf't kunu'hpxqnxgf 0 Cp{'hqxgp wchlpxguoqt'hp.' cpf'towduet ldgt'qh'tj g''
Gs who{'Uj ctgu'tj qwrf'bnq'rc{'hctvlewwrt'bwgp wlap'iq'tj g'hcev'tj cv'y g'btg'l qxgt pgf'hp'Kpf kc'll{'b' lgi cnlcpf'tgi wrc wqt{''
gpxkt qpo gpv'hp'y j kej 'luqo g'o cvgt kcht gur gewt'o c{'ldg'f khtgt gpv'ht qo 'tj cv'y j kej 'ht gxckut'hp'qy gt'eqwp vkgu0 Vj g't kunu''
cpf'wpegt who ygu'f guet ldgf'hp'tj ku'tige wlap'btg'p qv'tj g'qpn{'tkunu'bpf'wpegt who ygu'y g'ewt tgp wt'hceg0 Cff khlqpc cht kunu''
cpf'wpegt who ygu'f pqv'npqy p'wq'wu'qt'tj cv'y g'ewt tgp wt'f ggo 'loo c cytkch'o c{'cnuq'j cxg'cp'cf xgt ug'ghtgev'qp'qwt''
dwulopguu0 Khlcp{'qh'tj g'hqny kpi 'tkunu'qt'yi gt'tkunu'tj cv'ctg'pqv'ewt tgp wt'hpqy p'qt'ctg'pqy'f ggo gf'hoo c cytkch''
cewwcnt 'qeewt.' qwt'dwulopguu.' tguwnut'qh'qr gt c kqp u'cpf'hpc pekcheqpf khqp'eqwrf'luwlog.' tj g't tkeg'qhlywt'Gs who{'Uj ctgu''
eqwrf 'f genlopg.' cpf''qw'o c{'nqug'cnlqt'rctv'qh'|qwt''hpxguo gpv0 Cff khqpcnt.' lqwt'dwulopguu'qr gt c kqp u'eqwrf''cnuq'dg''
chtgevgf'd{'cff khqpcnhcevqtu'tj cv'ctg'pqv'rt gugp wt'npqy p'\q'wu'qt''tj cv'y g'ewt tgp wt'eqpulf gt'cu'hoo c cytlcn'u'qr gt c kqp u'b'qwt''
qr gt c kqpul0''

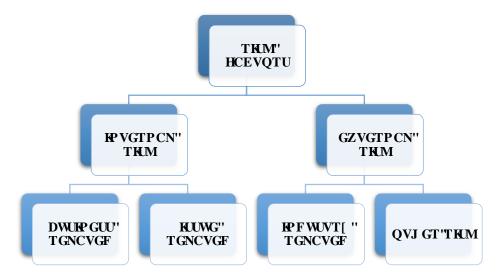
Wprguu''qyi gty kug''uvcygf "kp"yi g''tgrgxcpv''tkum'hcevqtu''ugv'hqtyi "dgrqy ."y g''ctg"pqv''kp"c"r qukkqp"'q''ur gekh{"qt"s wcpvkh{"yi g" hkpcpekcn'qt''qyi gt"ko r necvkqpu'qh''cp{"qh''yi g''tkumu''o gpvkqpgf"j gtgkp0Wprguu''qyi gty kug''uvcygf ."yi g''hkpcpekcn'lphqto cvkqp"qh'' qwt "Eqo r cp{"wugf "kp"yi ku''ugevkqp"ku''f gtkxgf "htqo "qwt "tguxcygf "hkpcpekcn'uvcygo gpvu''r tgr ctgf "kp"ceeqtf cpeg"y kyi "Kpf kcp" I CCR" cpf "yi g" Eqo r cpkgu'' Cev' cpf "tguxcygf "kp" ceeqtf cpeg"y kyi "yi g" UGDK' ÆFT" Tgi wrxdqpu0' Vq" qdvckp" c" dgwgt" wpf gtuvcpf kpi ."{qw'uj qwrf 'tgcf "yi ku''ugevkqp"kp"eqplwpevkqp"y kyi "yi g"ej cr vgtu''kwrgf "õ*Qwt 'Dwrdp gun*ö''dgi kppkpi "qp"r ci g"; 5" õ*Qwt 'Kpf wunt {*ö''dgi kppkpi "qp"r ci g": 4"cpf "õ*O cpci go gp wul'F kuewundqp 'cpf 'Cpcn uhu'qhHHpcpekcnEqpf kkqp'cpf 'Tguwnu'' qh''Qrgt cvkqpu*ö''dgi kppkpi "qp"r ci g"362"tgur gevkxgn{."qh"yi ku"Ftchv''Rtqur gewu"cu"y gm'cu"qyi gt"hkpcpekcn'kphqto cvkqp" eqpvckpgf "j gtgkp0'

Vj g'hqmqy kpi 'hcevqtu'j cxg'dggp'eqpukf gtgf 'hqt'f gvgto kpkpi 'vj g'o cvgtkcrkv{ 'qh'Tkum'Hcevqtu<'

- Uqo g"gxgpvu"o c{"pqv"dg"o cvgtkcnlkpf kxkf wcm("dww"o c{"dg"hqwpf "o cvgtkcnleqnrgevkxgn(="
- Uqo g"gxgpvu"o c{"j cxg"o cvgtkcn"ko r cev"s wcrkscvkxgn("kpuvgcf "qh"s wcpvkscvkxgn(="
- Uqo gʻgxgpui'o c{ "pqv'dgʻo cygtkcri'cv'r tgugpv'dwi'o c{ "j cxg"o cygtkcriko r cev'kp'hwwtg0"

Vj g"hoppekni'cpf "qvj gt"tgrevgf "ko r necvkqpu"qh"tkumu"eqpegtpgf."y j gtgxgt"s wcpwhkcdrg."j cxg"dggp"f kuenqugf "hp"vj g"tkumi hcevqtu"o gpwlqpgf "dgmy 0'J qy gxgt."vj gtg"ctg"tkumihcevqtu"y j gtg"vj g"ko r cev'o c{"pqv'dg"s wcpwhkcdrg"cpf "j gpeg"vj g"uco g" j cu"pqv'dggp"f kuenqugf "hp"uvej "tkumihcevqtu'0'Wprguu"qvj gty kug"uvcygf."vj g"hoppekcnihphqto cwlqp"qh"vj g"Eqo r cp{"wugf "hp"vj ku" ugewlqp"ku"f gtkxgf "htqo "qwt"hkpcpekcniuvcyo gpvu"wpf gt "Kpf kcp"I CCR."cu"tguvcygf "kp"vj ku"F tchv'Rtqur gewu0Wprguu"qvj gty kug" uvcygf."y g"ctg"pqv'hp"c"r qukklqp"vq"ur gekh{"qt"s wcpwkh{"y i g"hoppekcniqt"qvj gt"tkumu"o gpvlqpgf "j gtglp0'Hqt"ecr kcnk; gf "vgto u" wugf "dw"pqv'f ghlygf "kp"vj ku"ej cr vgt."tghgt"vq"vj g"ej cr vgt"vkngf "õ*Fghpkhqpu'cpf 'Cddt gxkcvhqpv*ö"dgi kppkpi "qp"r ci g"6"qh" vj ku"F tchv'Rtqur gewu0'Vj g"pwo dgtkpi "qh"vj g'tkumihcevqtu'j cu'dggp'f qpg'vq'hcekkcvg'gcug'qh'tgcf kpi "cpf 'tghgtgpeg'cpf 'f qgu" pqv'kp"cp{"o cppgt "kpf kecvg"vj g"ko r qtvcpeg"qh'qpg'tkumihcevqt"qxgt"cpqvj gt0'

Vj g"tkım'hcevqtu"ctg"ercuukhkgf "cu'wpf gt "hqt" vj g"ucng"qh'dgwgt "erctkx{"cpf "kpetgcugf "wpf gtuvcpf kpi <"





KPVGTPCN'TKLMU'

CO DWURP GUUTGNCVGF 'TKUMU'

30' Qwt 'Tgi kwgt gf 'Qllleg'ht qo 'y j gt g'y g'yr gt c vg'hu'p qv'yy p gf 'll{'ww0'

 $Qwt"Tgi~kuytgf"Qhhkeg"ttqo~"y~j~gtg"y~g"qr~gtcvg"ku"pqv"qy~pgf~"d{~"wu0"Qwt"Tgi~kuytgf~"Qhhkeg"rtgo~kug"ukwcvgf~"cv"Cuj~wk"~Mj~cpdgtkc"O~cj~guj~vcc"~NR"~421:~5168."Mqmcvc."Xkxgncpcpf~cr~wt."Uqwj~"46"~Rcti~cpcu."~Vj~cmxtr~wmxt~"O~cj~guvqic."~Y~guv"~Dypi~cn~"Kpf~kc"922363"ku"pqv"qy~pgf~"d{~"wu~kwku"cngp"qp"c"tgpv'dcuku"htqo~"qwt"rtqo~qvgt~"cpf~"O~cpci~kpi~"F~ktgevqt."O~t0Ici~lkw~Upi~j~F~j~kmqp."dgkpi~"yj~g"qy~pgt~qh"yj~g"rtqr~gtv{0Vj~gtg~ku"c~"gcxg~"cpf~"hkegpug~ci~tggo~gpv"f~cvgf~"3uv"Cr~tkn'4245."uvcvkpi~"qww~yj~g"vgto~u"cpf~eqpf~kkqpu~"r~gtvckpkpi~"vq"yj~g"ctg~"tgs~wktgf~"vq"xcecvg"yj~g"ewttgpv"rtgo~kugu."y~g"y~qwf~"dg"tgs~wktgf~~q"o~cng"cngtpcvkxg~"cttcpi~go~gpvu"~qy~gt"hkeg~cpf~"qy~gt~"kphtcuvtwewtg."cpf~"y~g"ecppqv"cuuntg~"yj~cv"yj~g"pgy~"cttcpi~go~gpvu"~y~kn''dg"qp~eqo~o~gtekcm{~"ceegr~vcdrg~lbcxqwtcdrg~vgto~u0"Ki'y~g~ctg"tgs~wktgf~"q~tgmqecvg~qwt~"dwukpguu~"qr~gtcvkqpu"f~wtkpi~"yj~ku"~r~gtkqf~."y~g"o~c{~"uvhhgt~"c~"f~kutw~vkqp~"kp~qwt~qr~gtcvkqpu"qt~"j~cxg~"qr~c~"j~ki~j~gt~ej~cti~gu~"y~j~kej~"eqwrf~"j~cxg~"cp~"cf~xgtug~"ghhgev~qp~qwt~"dwukpguu~"r~tqur~gevu~"tguwxuu~"qh"qr~gtcvkqpu"cpf~"hkpcpekcn'eqpf~kkqp0""$

Hqt'hwtyi gt'f gvckru'qhi'qwt'Dwukpguu."r ngcug'tghgt'ej cr vgt''kkngf "õQwt'Dwukpguuö''dgi kppkpi "qp''Rci g''; 5"qhi'F tchv'Rtqur gewuU'

40' Cndij g'hcevqt { 'ht qo 'y j gtg'y g'qrgt cvg'qwt 'dwulpguu'qrgt cvlqpu'ctg'pqv'qy pgf 'd { 'wu0"

 $Hqt "hwt y gt" f gvckru" qh" qwt "Dwukpguu." r rgcug" t ghgt "ej cr vgt "vkrgf" \tilde{\textit{o}Qwt 'Dwukpguu"} "dgi kppkpi" qp" Rci g"; 5" qh" F t chv'Rt qur gewu.0" "$

50' Qwt'bqo rcp{'j cf'dqwi j v'cuugut'ht qo 'qwt'Rt qo qvgt'O t O Lci llw'Ulpi j 'F j knqp'bpf' j cf'pqv'kcngp'ij g'xcnwcwlqp'' tgrqtv'iq'f gvgt o kpg'ij g't tkeg'qh'ij g'cuugut'bpf'bnq'ij g't tkeg'hqt'lwej 'buugut' cu'pqv'{gv'dggp'rckf0"}

Qwt"eqo r cp{"ces wktgf" 'y g"cuugwi'htqo "qwt"r tqo qyt"O t0'Lci lk/'Ukpi j "F j kmqp0'C v'y g"vko g"qh'uwej "ces wktklqp." 'y g"cuugwi' y gtg"pqv'xcnwgf "cpf "pq"Xcnwcvkqp"Tgr qtv'y cu"qdvckpgf 'htqo "c"Tgi knytgf "Xcnwgt "cpf "y g"cuugwi'y gtg"ces wktgf "qp"cp"cu'ku' dcuku0'Kp" y g"cdugpeg"qh"c"Xcnwcvkqp"Tgr qtv." y g"ecppqv'cuuwtg"{qw'yj cv'y g'y knidg"cdng"vq"eqpvkpwg"yj g"cdqxg"cttcpi go gpv' qp"eqo o gtekcm("ceegr wcdng"Thcxqtcdng"vgto u'lkp"hwwtg0'Kp"ecug"qh"cp{"f ku/ci tggo gpwu"qt"f kur wgu'lkp"yj g"hwwtg." y g"uj cm' dg"hcdng"vq"nqnilnqt"pgy "cttcpi go gpvu"r gtvckpkpi "vq"y g"Cuugwi"cpf "Rtqr gtvkgu"ces wktgf"cpf"y g"o c{"uwhligt"c"f kutwr vkqp"kp" qwt "qr gtcvkqpu"qt"j cxg"vq"r c{"j ki j gt"ej cti gu." y j kej "eqwrf"j cxg"cp"cf xgtug"ghlgev'qp"qwt "dwukpguu." r tqur gew. "tguwnu"qh" qr gtcvkqpu"qt"j cxg"vqf kkqp0'

60' Qwt 'cdkilo{ 'lq'l tqy 'lqwt 'dwulpguu'f gr gpf u'lp 'lqwt 't grc skqp uj kr u'y kj 'lqwt 'f gc rgt u'cpf 'ewunqo gt u 'cpf 'cp { 'cp xgt ug'' ej cpi gu'lp 'vj gug't grc skqp uj kr u 'lqt 'lqwt 'lpcdkilo{ 'vq 'gp vgt 'lp vq 'pgy 't grc skqp uj kr u 'eqwrf 'pgi c skxgr('chtgev'qwt'' dwulpguu'cpf 't guwru'lqt'dr gt c skqp u'l''

Qwt'dwwkpguu'ku'f gr gpf gpv'qp''y g''f gekukqpu'cpf ''cevkqpu'qh'qwt''f gcrgtu''y j kej ''ku'f gvgto kpgf ''d{ "qwt'cdkrk{ "vq"o ckpvckp"cpf" untgpi y gp"qwt"tgrevkqpuj kr u''cpf "cttcpi go gpvu''y kj "gzkrrkpi "f gcrgtu''cu''y gml'cu''qwt''cdkrk{ "vq"guvcdrkuj "cpf "o ckpvckp" tgrevkqpuj kr u''y kj "pgy "f gcrgtu''CQwt''tgrevkqpuj kr "y kj "qwt''ewurqo gtu''ku''f gr gpf gpv''vq''c''reti g''gz vgpv''qp''qwt''cdkrk{ "vq'' tgi wrctn{ "o ggv''y gkt''tgs wktgo gpvu."kpenwf kpi "d{ "kpvtqf wekpi "f khrgtgpvkcvgf" r tqf wev''y kj "i tgcvgt''o ctngvcdkrk{ ."r tkeg'' eqo r gvkkxgpguu."ghhekgpv'cpf "vko gn{ "r tqf wev'f grkxgtkgu."cpf "eqpukrvgpv'r tqf wev's wcrkx{ 0'Kp''y g''gxgpv'kh'y g''ctg''wpcdrg''vq'' o ggv''uwej ''tgs wktgo gpvu''kp''y g''hwwtg. 'kv'o c{ "tguwrv'kp''f getgcug'kp''qtf gtu''qt''eguucvkqp''qh''dwwkpguu''htqo "chrgevgf "ewurqo gtu'' Cf xgtug''ej cpi gu''kp''qwt''tgrevkqpuj kr u''y kj "qwt''ewurqo gtu''t "q''uweeguuhwm{ "guvcdrkuj "tgrevkqpuj kr u''y kj "pgy "ewurqo gtu." eqwf "yj gtghqtg'ho kv''qwt''dwukpguu''r tqur gevu."y j kej "eqwrf "cf xgtugn{ "chrgev'qwt''hkpcpekcn'ir gthqto cpeg0'

70' Qwt'iqr'hkxg'ewuqo gtu'eqpxtkdwvg'b clqths{'qhiqwt'tgxgpwgu'htqo 'qrgtcskqpu0Cp{'hquu'qhidwukpguu'htqo 'qpg'qt''
o qtg'qhiij go 'b c{'tfxgtugn{'thgev'qwt'tgxgpwgu'tpf'rtqhscdhis{0'

Qwt"vqr "hkxg"ewvqo gtu"j cxg"eqpvtkdwgf ": 6097" "qh"qwt"tgxgpwgu"hqt"vj g"r gtkqf "gpf gf "Ugr vgo dgt "52."4245"dcugf "qp"



Tguccyf "Hlpcpekcn'Uccyo gpw0J qy gxgt."qwt"qr "ewnqo gtu"o c{"xct{"htqo "r gtkqf "vq"r gtkqf "f gr gpf kpi "qp"y g"f go cpf "cpf "y wu'y g"eqo r qukkqp"cpf 'tgxgpwg'i gpgtccyf 'htqo "y gug'ewnqo gtu"o ki j v'ej cpi g'cu'y g'eqpvkpwg'vq'cf f 'pgy 'ewnqo gtu" kp"pqto cn'eqwtug"qh'dwukpguuOUkpeg"qwt "dwukpguu"ku"eqpegpvtccyf "co qpi "tgrcvkxgn{ "hgy "uki pkhecpv'ewnqo gtu."y g"eqwf" gzr gtkgpeg"c 'tgf wevkqp"kp"qwt 'tguwnu"qh'qr gtcvkqpu."ecuj 'hnqy u'cpf "hk wkf kk{ "kh'y g"nqug"qpg"qt "o qtg"qh'yj gug"ewnqo gtu"qt" y g"co qwpv'qh'dwukpguu."y g"qdvckp"htqo "vj go "ku"tgf wegf "hqt"cp{ "tgcuqp."kpenwf kpi "dwt'pqv'nko kgf "qp"ceeqwpv'qh'cp{ "f kur wg"qt "f kus wcnkhecvkqp0Y j krg"y g"dgrkgxg"y g"j cxg"o ckpckpgf "i qqf "cpf "nqpi /vgto "tgrcvkqpuj kr u'y kj "qwt"ewnqo gtu." y gtg"ecp"dg"pq"cuuntcpeg"yj cv'y g"y knileqpvkpwg"q"j cxg"uwej "nqpi /vgto "tgrcvkqpuj kr 'y kj "y go OY g"ecppqv'cuuntg"yj cvy g" uj cmli gpgtcvg"yj g"uco g"s wcpwo "qh'dwukpguu"qt"cp{"dwukpguu"cv'cm "htqo "yj gug"ewnqo gtu."cpf "nquu'qh'dwukpguu"htqo "qpg" qt"o qtg"qh'yj go "o c{"cf xgtugn{"chhgev'qwt 'tgxgpwgu"cpf "rtqhkxcdkrk{0"}

80' Y g'j cxg'crrhgf 'hqt'Tgi kust cvlqp'cpf 'I tcpv'qt'Tgpgy chlqh'lhegpug'cpf 'pqvleg'qh'qeewr cvlqp'lr gelldigf 'lp'Ugevlqp'' 8'('9'qh'lj g'Hcevqt lgu'Cev.'3; 6: 'dlwv'lj g'luco g'j cu'pqv'dlggp'l tcpvgf 'lq'wu'cu'qp'f cvg0''

 $Y g''j \ cxg''crrr ftgf''hqt''T gi kntcvkqp''cpf''I \ tcpv'qt''T gpgy \ criqhi'nlegpug''cpf''pqvleg''qhi'qeewr cvkqp''ur gelkhgf''kp''Ugevkqp''8''('9'qhi' yi g''Hcevqtkgu''Cev.''3; 6: ''hqt''qyk''K'dgctkpi ''crrrhecvkqp''pwo dgt''ECH424598875; ''f cvgf''F gego dgt''45. ''4245''dwv''yi g'' uco g''j cu''pqv''dggp''i tcpvgf''q''wu''cu''qp''f cvg0'Vj g''Crrrhecvkqp''hqt''tgi kntcvkqp''hqt''Wpkv'KK'(''KKK'ku''{gv''q'dg''o cf g''d{''yi g''} Eqo rcp{0Y g''ecppqv'cuuxtg''{qw''yi cv''cp{''crrhecvkqp''hqt''T gi kntcvkqp''qh''cpf''I tcpv'qt''T gpgy criqhi'nlegpeg''cpf ''pqvleg''qh'' qeewr cvkqp''hp''hwwtg''d{''qw''Eqo rcp{''ykn''dg''i tcpvgf''d{''yi g''tgngxcpv'cwj qtkkgu''hp''c''vko gn{''o cppgt''qt''cv'cm''Qw''ghl'qtu'' q''rtqyev'qwt''hcevqtkgu''o c{''pqv'dg''cf gs wcvg''cpf''o c{''ngcf''vq''gtqukqp''qh''qwt''dwukpguu.''gzeguu'qwwhqy ''qh'qwt''hpcpegu''cpf'' qwt''qr gtcvkqpu''eqwrf''dg''cf xgtugn{''chigevgf 0'Cp{''nkki cvkqp''eqwrf''dg''vko g''eqpuwo kpi ''cpf''equvn{''cpf''yj g''qweqo g''ecppqv'' dg''i wctcpvggf 0'Y g''o c{''pqv'dg''cdng''vq''cnng''crrtqrtkcvg''cpf''vko gn{''uvgru''kp''yj ku''tgi ctf 0'}$

90' Vj gtg'ò c{'dg't qvgp vhc dèqp hhev'qhlhp vgt gunu'dgvy ggp 'qwt 'Eqo rcp{'cpf 'qvj gt 'xgp vwt g'qt 'gp vgtrt hugu't tqo qvgf 'd{'' qwt 't tqo qvgt 0''

Qwt"Rtqo qvgt"O t0'Ici lk/'Upi j "F j knqp"twpu"c"uqng"Rtqr tkgvqtuj kr "pco gf "Cuuqekcvgf "Hcdtkecvqtu0'Vj g"o ckp"dwukpguu" qdlgev'1'cevkxkkgu"qh'htto "r gto kv'kv'vq"wpf gtvcng'uko krct"dwukpguu"q"j cv'qh"qwt"dwukpguu."y j kej "o c{"etgcvg"c"r qvgpvkcn' eqphrkev'qh'kpvgtguv'cpf "y j kej "kp"wtp."o c{"j cxg"cp"ko r nkecvkqp"qp"qwt"qr gtcvkqpu"cpf "r tqhku0Eqphrkevu"qh'kpvgtguvu"o c{" ctkug"kp"cmqecvkpi "dwukpguu"qr r qtwpkxkgu'dgw ggp"qwt "Eqo r cp{"kp"ektewo uvcpegu'y j gtg"qwt "tgur gevkxg"kpvgtguvu"f kxgti g0' kp"ecugu"qh"eqphrkev."qwt "Rtqo qvgt"o c{"hcxqwt"qvj gt"eqo r cpkgu'kp'y j kej "qwt"Rtqo qvgt"j cxg"kpvgtguv0'

:0' Qwt'lchwtg'\q'rgthqto '\p'beeqtfcpeg'\y kj '\j g'locpfctfu'rtguethdgf'\p'\y qtm\qtfgt'\qht\qwt'\engpv'\eqwnf'tguwn'\p''
nqua'\qht'dwulpguu'\qt'rc{o gpv'qht'hs whf cvgf 'f co ci gu'cpf 'cp{'f gnc{'\p'\y g'\ueg gf wng'qht'qwt'\wpfgt/eqpuotwevlqp''
rtqlgevu'o c{'dg'lowdlgev'\q'\equo'\qxgttwpu'\cpf'\ecp'\wo rcev'\qwt'tgrwxv\qp'\cpf'\hwwtg'\rtqlgevu'0''

 $Cu''qp''y g''f cwg''qh''y ku''F tch''Rtqur gewu."y g''j cxg''Qpi qkpi "Rtqlgewi'y cv'ctg''wpf gt''eqpurtwevkqp''cpf "f gxgrqr o gpv'lVj g'' f gxgrqr o gpv'qh'uwej 'r tqlgewi'ku'iwdlgev'vq''uwdurcpvkcntkumu. 'kpenwf kpi 'xctkqwu'r rcppkpi ''cpf 'eqpurtwevkqp''tkumuO'Hwty gt'y g'' hqmqy 'c''f gwkrgf ''uej gf wrg. 'tgi wrctn{ 'o qpkqtkpi 'r tqi tguu. ''wr f cvkpi 'r tqlgev'uxcwu. ''cpf 'kf gpvkh{ kpi ''ej cpi gu. ''vq''gpuwtg''y cv' yi g''r tqlgev'uxc{u''qp''txcentO' Kh''cp{ "f kur wxgu''ctkug''qxgt''rcpf "tki j vu. "gpxktqpo gpvcn''ko r cev''cuuguuo gpwu''cpf "o kki cvkqp'' o gcuwtgu. 'kv'ecp''rgef ''vq''r tqlgev'f grc{u''cpf ''cf f gf ''equvuO'Cp{ ''f grc{u''kp''y g''eqo r rgvkqp''qh''qwt''r tqlgewi'o c{ ''cf xgtugn{ ''chhgev'' qwt'' cdkrk{ "'vq'' i gpytcyg'' gzr gevgf "tgwtpu'' cu'' eqpvtcewi'' cy ctf gf ''d{ '' i qxgtpo gpvcn'' cwj qtkkgu'' qt'' gpykkgu'' hwpf gf ''d{ '' i qxgtpo gpvcn'' cyj qtkkgu'' qt'' gpykkgu'' hwpf gf ''d{ '' i qxgtpo gpvcn'' cyj qtkkgu'' qt'' gpykkgu'' hwpf gf '' d{ '' i qxgtpo gpvcn'' gyr gyr gevgf ''gpenwf g'' o qpyct{ "rkcdkrk{ (O'Hqt'' hwty gt''f gycknu''qh''qwt'' Dwwkpguu. "r rgcug''tghgt'' ej cr vgt''kxrgf ''ô<math>Q$ wt'' Dwwlpguuo'' dgi kppkpi ''qp''Rci g'', 5''qh'Ftch''Rtqur gewuo'

; 0 Qwt'lckwtg'iq't gthqto 'lp'teeqtf cpeg'y kj 'ij g'locpf ctf u't tguet kdgf 'lp'y qt nllqtf gt 'lpliqwt 'enkgpv'eqwnf 't guwnv'kp''
nquu'qh'dwukpguu'qt'rc {o gpv'qh'hks wlf cvgf 'f co ci gu'cpf 'cp{'lp 'lj g'loej gf wrg'qh'qwt 'wpf gt/eqp uut wevlqp''
rt qlgevu'o c{'dg'lowdlgev'iq'equo'qxgtt wp u'cpf 'ecp 'ko r cev'qwt 't gr wwxlqp 'cpf 'lwwnt g'rt qlgevu'0''

Cu"qp"y g"f cvg"qh"y ku"F tchr'Rtqur gewu."y g"j cxg"Qpi qkpi "Rtqlgew"y cv'ctg"wpf gt "eqpurtwevkqp"cpf "f gxgrqr o gpv0'Vj g" f gxgrqr o gpv0'q'lwwej 'r tqlgewi'ku'wdlgev'q'uwduvcpvkcritkımı. 'kpenwf kpi "xctkqwu'r reppkpi "cpf "eqpurtwevkqp"tkımı0'Hxty gt"y g" hqmy "c'f gvckrgf 'tej gf wrg. 'tgi wrctn("o qpkqtkpi "r tqi tguu."wr f cvkpi "r tqlgev'uvcwu."cpf 'kf gpvkh{ kpi "ej cpi gu."vq"gpuxtg"y cv' y g"r tqlgev'uvc{u"qp"vtcen0' Kh"cp{"f kur wxgu"ctkug"qxgt"repf "tki j vu."gpxktqpo gpvcn'ko r cev'cuuguuo gpvu"cpf "o kki cvkqp" o gcuvtgu. 'kv'ecp'rgcf 'vq'r tqlgev'f grc {u'cpf 'cf f gf 'equvu0Cp{ 'f grc {u'kp'y g'eqo r rgvkqp"qh'qwt"r tqlgew'o c{ 'cf xgtugn("chłgev' qwt" cdkrkv{" vq" i gpgtcvg" gzr gevgf "tgwtpu" cu" eqpvtcewi" cy ctf gf "d{" i qxgtpo gpvcn' cwj qtkkgu" qt" gpvkkgu" lwpf gf "d{" i qxgtpo gpvcn' gyr gpcn'ercwug'y j kej 'kpenwf g'o qpgvct { 'rkcdkkx{0'}

320 Qwt'eqo rcp{'rwtej cugu'tcy 'b cvgthcnu'htqo 'rtqrthgvqtuj kr'hhto 'qh'dwt'rtqo qvgt0'

Qwt"eqo r cp{"r wtej cugu"tcy "o cvgtkcmi"htqo "c"uwr r hgt"y j kej "ku"qy pgf "d{"qwt"r tqo qvgt0'C"r tqr tkgvqtuj kr "hkto "qhl'qwt" r tqo qvgt"pco gf "Cuuqekcvgf "Hcdtkecvqtu"ku"gpi ci gf "kp"yj g"uko krct "rkpg"qh'dwukpguu"rkng"qwtu"cpf "o quv'qwt"tcy "o cvgtkcni" r wtej cugu"ku"htqo "yj g"uco g"gpvkx{0'Cu"r gt "hkpcpekcni"hqt"yj g"r gtkqf "gpf gf "qp"Ugr vgo dgt"52."4245"cpf "hqt"yj g"hkpcpekcni gct"gpf gf "qp"O ctej "53."4245"cpf "O ctej "53."4244"yj g"r wtej cugu"htqo "yj g"tgrcvgf "r ctv'y cu"Tu07508; "Ncnj ."Tu0": 5044" cpf "Tu04604; "Ncnj u'tgur gevkxgn{0'Ukpeg"rcti g"s wcpwo "qh'qwt "Rwtej cugu"ku'htqo "qwt"tgrcvgf "r ctv' "yj gtg"ecp"dg"kpuvcpegu"



330' Vj gtg'ctg'pq'hqpi/vgto 'lwrrn('ci tggo gp ul'y kj 'qwt'kgpf qtu'l'llwrrn\gtu0''

 $Qwt''Dwulpguu''o c \{''dg''cf xgtugn\{''chhgevgf''kh''y gtg''ku''cp\} \{''f kutwr kqp''hp''y g''tcf kpi ''o cvgtkcn'luwrrn \{'qt''f wg''q''pqp/'' cxckrcdktkv\{''qh''vtcf kpi ''o cvgtkcn'lY g''f q''pqv''j cxg''y tkwgp''ci tggo gpwi''y kj ''qwt''xgpf qtu''l''uwrrnkgtu''cpf ''y g''qr gtcvg''qp''c'' r wtej cug''qtf gt''u\{uvgo 0'Vj gtg''ctg''pq''nqpi /vgto ''uwrrn{''ci tggo gpwi''hqt''y g''tcf kpi ''o cvgtkcn'lYp''cdugpeg''qh''cp{''uwej ''hqto cn'' eqpvtcev'y kj ''qwt''xgpf qtu''l''uwrrnkgtu.''y g''ctg''gzr qugf ''vq''y g''tkumu''qh''ktgi wrct''uwrrnkgu''qt''pq''uwrrnkgu''cv''cmi'qt''f grc{gf''uwrrnkgu''qt''r tkeg''xctkcvkqp''y j kej ''y qwnf''o cvgtkcm{''chhgev'qwt''tguwnu''qh''qr gtcvkqpu0'Yp''y g''gxgpv''qh''cp{''f kutwrvkqp''kp''y g''uwrrn{''q''y g''pqp/cxckrcdkrkv{''qh''o cvgtkcn'lkp''y g''tgswktgf''s wcrkv{''ttgownu''qh''qr c''ngtpcvg''uqwteg.''y g''uwrrn{''uej g'wg''q''qwt''enkgpwi'o c{''dg''cf xgtugn{''dg''chhgevgf''korcevkpi ''y g''ucngu''cpf''r tqhkcdktkv{''qh''y g''Eqorce{0}'}u$

340 Qwt'lpfkxlf wcd'Rt qo qvgtu'r nc {u'mg{'tqng'lp'qwt'hwpeslqpkpi'cpf'y g'j gcxkn{'tgn{'qp''y gkt'mpqy ngfig'cpf'' gzrgtkgpeg'lp''qrgtcskpi''qwt''dwnlpguu'cpf''y gtglqtg.'kv'ku'etkskecd'hqt''qwt''dwnlpguu''y cv''qwt''Rt qo qvgt''cpf'' Gzgewskxg'Fktgewqtu'tgo ckp'cunqekcvgf'y ky 'wuO''

Qwt"uweeguu"cnuq"f gr gpf u"wr qp" i g"ugtxlegu"qh"qwt"ng{ "o cpci gtlcn'r gtuqppgn'cpf "qwt"cdkrk\{ "vq"cwtcev'cpf "tgvclp"ng{ " o cpci gtkcn'r gtuqppgn'cpf "qwt "kpcdkdx{ "vq"cwtcev'vj go "o c{ "chhgev'qwt "qr gtcxkqpu0'Y g"dgpghx'htqo "qwt "tgrcxkqpuj kr "y kj " qwt 'kpf kxkf wcn'Rtqo qvgtu'cpf 'qwt 'hweeguu'f gr gpf u'wr qp''y g'eqpvkpwkpi 'ugtxkegu'qh'qwt 'Rtqo qvgtu'cpf 'Czgewkxg'F ktgevqtu'' $y\ j\ q"j\ cxg"dggp"tgur\ qpukdrg"hqt" \ i\ tqy\ \ y'\ "qh'qwt"dwukpguu''cpf\ "ku''enqugn("kpxqnxgf\ "kp" \ i\ g"qxgtcm'uvtcvgi\ \{.''f\ ktgevkqp''cpf\ ''\ ktgevkqp'' \ cyf\ '$ $o\;cpci\;go\;gpv"qh"qwt"dwulpguu0'Qwt"Rtqo\;qvgtu"cpf\;"Gzgewkxg"F\;ktgevqtu"j\;cxg"dggp"cevkxgn("kpxqnxgf"kp"vj\;g"f\,c\{"vq"f\,c\"vq"$ qrgtc\kqpu'cpf "o cpci go gpv0Ceeqtf kpi n(."qwt"rgthqto cpeg'ku'j gcxkn("fgrgpfgpv\wrqp"\yi g"\ugtxkegu'qh'qwt"Rtqo qvgtu'cpf " gzgewkkg"Fktgevqtu0Kfqwt"Rtqoqvgtu"cpf"Gzgewkkg"fktgevqtu"ctg"wpcdng"qt"wpykmtpi "\q"eqp\kpwg"kp"\j gkt"rtgugpv'rqukktqp." $y g''o c \{ ''pqv'dg''cdng''vq'tgrnceg''vj go ''gcukn(''qt''cv'cnt)'Hwtvj gt.''y g'tgn(''qp''vj g'eqpvkpwgf''ugtxkegu''cpf''r gthqto cpeg''qh'qwt''ng \{ ''ugtxkegu''cpf''r gthqto cpeg''qh'qwt''ng \} \\ = (''pqv'dg''cdng''vq''tgrnceg''vj go ''gcukn(''qt''cv'cnt)'Hwtvj gt.''y g''tgn(''qp''vj g''eqpvkpwgf''ugtxkegu''cpf''r gthqto cpeg''qh'qwt''ng \} \\ = (''pqv'dg''cdng''vq''tgrnceg''vj go ''gcukn(''qt''cv'cnt)'Hwtvj gt.''y g''tgn(''qp''vj g''eqpvkpwgf''ugtxkegu''cpf''r gthqto cpeg''qh''qwt''ng \} \\ = (''pqv'dg''cdng''vq''tgrnceg''vj go ''gcukn(''qt''cv'cnt)'Hwtvj gt.''y g''tgn(''qp''vj g''tgn(''qp''vj''tgn(''qp''vj''tgn(''qp''vj''tgn(''qp''vj''tgn(''qp''vj''tgn(''qp''vj''tgn(''qp''vj''tgn(''qp''vj''tgn(''qp''vj''tgn(''qp''tgn(''qp''vj''tgn(''qp'$ $gz gewkx gu''cpf''ugpkqt''o cpci go gpv'hqt''eqpvkpwgf''uweeguu''cpf''uo qqvj'''hwpevkqpkpi''qh''yj g''qr gtcvkqpu''qh''yj g''Eqo r cp \{0'Kt'' | y'' | y'$ y g"nqug"yj g"ugtxkegu"qh"cp{ "qh"qwt"mg{ "o cpci gtkcn"r gtuqppgn "kv"o c{ "vcng"tgcuqpcdrg" 'ko g"vq"nqecvg"uwkcdrg"qt "s wcrkhkgf " tgr mego gpwl"cpf "o c{ "kpewt"cffkkqpcn"gzr gpugu"vq"tgetwk/"cpf" vtckp"pgy "r gtuqppgn"y j kej "eqwrf "cfxgtugn("chhgev'qwt" dwulpguu'qr gtc\lqpu'cpf 'chhgev'qwt'cdkrk\{ '\q'eqp\lpwg."\q'o cpci g'cpf "gzrcpf 'qwt'dwulpguu'Qwt 'Rtqo qvgtu'cpf 'Gzgewkxg'' Fktgevqtu."cmpi "y kij "'ij g''ng{"o cpci gtkcn'r gtuqppgn"j cxg"qxgt"'ij g"{gctu'dwkn/tgncwkqpu'y kij "xctkqwu"ewuvqo gtu'cpf "qvj gt" vq"ko r ngo gpv'qwt"uvtcvgi {."cpf "qwt"dwukpguu."hkpcpekcnleqpf kkqp."tguwnu"qh"qr gtcvkqpu"cpf "r tqur gevu"o c{ "dg"o cvgtkcm{ " cpf 'cf xgtugn('chhgevgf 0'

350' Qwt Eqo rcp{'j' cf 'pqv'o cf g'cp{'ttqxkulqp'lqt'rc{o gpv'qhli tcwkk{'\q'qwt'\go rq{ggu\Uc'rgt'rtqxkulqp'\qhRc{o gpv'\qhli tcwkk{'\q'go rq{ggu'lj cnlllg'o cf g'\wrqp'\crrhecdluk{''} qhli tcwkk{'\q'go rq{ggu'lj cnlllg'o cf g'\wrqp'\crrhecdluk{''} qhli g'Cev\''}

 $Qwt"eqo\ r\ cp\{"hchgf"\ vq"f\ gygto\ kpg"\ ig"crr\, hecdkhk\{"qh"\ ig"cev"cnj\ qwi\ j\ "iy\ g"pwo\ dgt"qh"go\ r\ m\{ggu"qh"\ ig"eqo\ r\ cp\{"j\ cu"etquugf"\ ig"\ ig"iy\ tguj\ qnf\ "ho\ k"cu"o\ gpvlqpgf\ "kp"\ ig"Cev"Ukpeg"\ ig"eqo\ r\ cp\{"y\ cu"pqv"cy\ ctg"qh"\ ig"crr\, hecdkhk\{."ij\ g"eqo\ r\ cp\{"hchgf"\ vq"o\ ckpvckp"cp\{"r\ tqxkukqpu"hqt"i\ tcwkk\{"kp"cp\{"qh"\ ig"r\ cuv"hkpcpekcn\\00000"\{gctu0'\ Wr\ qp"kf\ gpvkhlecvkqp"qh"\ iy\ ku"pqp/eqo\ r\ ncpeg"\ ig"uco\ g"y\ cu"tgevkhkgf" kp"\ ig"tguvcygf "hkpcpekcn\0000"\{"wrhpi\"cewctlcn"\ xcnwcvkqp"cpf"o\ cmkpi\"cr\ r\ tqr\ tkcyg"r\ tqxkukqpu"hqt"\ tcwkk\{0Cnj\ qwi\ j\ "pq"eqo\ r\ nckpv'j\ cf''dggp''hkrgf"ci\ ckpuv'qwt"eqo\ r\ cp\{"hqt"pqpeqo\ r\ ncpeg'\wpf\ gt"cp\{"ugevkqp"\ qh"\ ig"eqo\ r\ ncpeg'\wpf\ g"ceycqpf"\{"ugevkqp"\ qh"\ ig"eqo\ r\ ncp\{"ku"hqwf"\ vq"dg"kp"f\ gbcwx'kp"eqo\ r\ n\{kpi\ "y\ g"cdqxg"j\ cu"dggp"tgegkxgf"d\{"vj\ g"Eqo\ r\ cp\{"km"f\ cy0'Dw"kh"\ iy\ g"eqo\ r\ n\{pq\"ukg'\ pq\"ukg'\ pq\"ukg'$

360' Y g'tgs wktg'c'pwo dgt'qh'crrtqxcnu'P QEu'hkegpugu'tgi kustcskqpu'cpf'rgto kui'kp'ij g'qtf kpct{'eqwtug'qh'qwt'' dwukpguuUqo g'qh'ij g'crrtqxcnu'ctg'tgs wktgf 'kq'dg'qdvckpgf'd{'ij g'Kuswgt'Eqo rcp{'cpf'cpf'hc kwtg'qt'fgnc{'kp'' qdvckpkpi 'ij g'luco g'kp'c'ilo gnf'o cppgt'o c{'cf xgtugnf'chlgev'qwt'qrgtcskqpuU''

Y g"tgs wktg"ugxgtcn'uwwqt {"cpf "tgi wrwqt {"r gto ku."rkegpugu"cpf "crrtqxcm"vq"qrgtcvg"qwt"dwukpguu0'O cp{"qh"y gug" crrtqxcm"ctg"i tcpvgf "hqt"hkzgf"r gtkqf u"qh"wo g"cpf "pggf "tgpgy cn'htqo "wo g"vq"wo g0'Rtgugpvn{."y g"j cxg"crrnkgf "hqt" wr f cvkpi "nkegpugu"cpf "crrtqxcmi"kp" yi g"pco g"qh"õ*Cunqek vgf "Eqc vgt u'Nko kvgf ö"htqo "õ*Cunqek vgf "Eqc vgt u'Rt kxc vg" Nko kvgf ö"OCnq."y g"ctg"{gv'vq'tgegkxg"cpf 'tgpgy 'ugxgtcn'crrtqxcmi"cpf 'nkegpugu0'Vj g"Kunwgt"Eqo r cp{ 'ku'lp"yj g"rtqegun"qh' qdvckpkpi "yj g"uco g0P qp/qdvckpkpi "qt"pqp/tgpgy cn'qh'yj g"uckf "r gto ku'cpf 'nkegpugu'Vy qwrf "cf xgtugn("chhgev'qwt"Eqo r cp{ wi' qr gtcvkqpu."yj gtgd{ "j cxkpi "c"o cygtkcn'cf xgtug"ghhgev'qp"qwt"dwukpguu."tguwnu'qh'qrgtcvkqpu'cpf "hkpcpekcn'eqpf kkqp0'Vj gtg" ecp"dg"pq"cuuwtcpeg"yj cv'yj g'tgrgxcpv'cwj qtkkgu'y kn'kunwg"cp{ "qh'uwej "r gto ku'qt"crrtqxcmi'kp"yj g'wo g/htco g'cpvkekr cvgf" d{ "wu'qt"cv'cm0'Uqo g"qh'qwt"r gto ku."rkegpugu'cpf "crrtqxcmi'ctg"uwdlgev'q"ugxgtcn'eqpf kkqpu'cpf "y g"ecppqv'r tqxkf g"cp{" cuuwtcpeg"yj cv'y g'y kn'ldg"cdrg"vq"eqpvkpwqwun{ "o ggv'uwej "eqpf kkqpu'qt"ugxgtcn'eqo r nkcpeg'y kyj "uwej "eqpf kkqpu' q"y g"ucwwqt {"cwj qtkkgu."y j kej "o c{"ngcf"q"j g"ecpegmcwkqp."tgxqecwkqp"qt"uwwr gpukqp"qh'tgrgxcpv'r gto ku."rkegpugu'qt"



crrtqxcni0Cp{"hchmtg"d{"wu"\q"crrn("hp"\do g."\q"tgpgy."o clpvclp"qt"qdvclp"\j g"tgs wltgf"r gto ku. "hlegpugu"qt"crrtqxcnu."qt" y g"ecpegmc\lqp."uwur gpulqp"qt"tgxqec\lqp"qh"cp{"qh"\j g"r gto ku. "hlegpugu"qt"crrtqxcnu"o c{"tguwn/"hp"\j g"!pvgttwr \lqp"qh" qwt"qr gtc\lqpu"cpf"o c{"j cxg"c"o cvgtlcn'cf xgtug"ghlgev'qp"\j g"dwulpguu0Vj g"Eqorcp{"y kij "tgurgev'\q"Tgi kntc\lqp"wpf gt" Gorm {ggu"Ucvg"|kpuwtcpeg"Cev."3; 6: "j cu"pqv"|htgui n("crrn\gf" "hqt"\j g"Tgi kntc\lqp"V) g"Tgi kntc\lqp"wpf gt" Ucvg"|kpuwtcpeg"Cev."3; 6: "j cu"pqv"|htgui n("crrn\gf" "hqt"\j g"Tgi kntc\lqp"V) g"Tgi kntc\lqp" wpf gt"Gorm q{ggu"Ucvg"|kpuwtcpeg"Cev."3; 6: "y cu'ku'lp"\j g"pco g'qh'Cuuqekcvgf 'Eqcvgtu."c"uqng"rtqrtkgvqtuj kr"hto."y j kej "y cu'hcvgt"\tcpulgttgf" \q"\j g"Eqorcp{0"Upeg."\j g"Tgi kntc\lqp"ki"vtcpulgttgf" vq"\j g"Eqorcp{0"Ucvg"|kmvq g"Tgi kntc\lqp"|ki"vtcpulgttgf" vq"\j g"Eqorcp{0"Ucvg"|kpeg."\j g"Eqorcp{0"Cev."3"|c"\gentlefty g" g"Tgi kntc\lqp"|ki"vtcpulgttgf" vq"\j g"Eqorcp{0"Ucvg"|vg g"Eqorcp{0"Cev."\gentlefty g" g"Sqs."\gentlefty g"Sqs."\gen

370' Qwt't gxgp wgu'c t g'f gr gpf gp v'wr qp 'qwt 'b ggwlpi 'lir gelllle' ewingo gt't gs wlt go gp wi'ic ti gn('qp 'c 'ec ug/vq/ec ug'd c ulu0' Cp{'lic liwit g'qt'llo kic wlqp 'qp 'qwt 'c dlulw' 'lq'r t qxlf g'ligt xlegu'b c {'f gwt lo gp w n('c lligev'qwt 'lwwwt g't t qy yi 0''

 $Qwt''cuuki\ po\ gpwt'hqt''r\ tqxkf\ kpi\ ''ugtxkegu''ncti\ gn(\ 'kpxqnxg''wu.'kp''r\ tqxkf\ kpi\ ''gpf/vq/gpf''uqnwkqpu''q''j\ g''cnwo\ kpwo\ 'hcdtkeckqp'' kpf wwt { 'qp''c'ecug''q/ecug''dcuku.'f'\ gr\ gpf\ kpi\ ''wr\ qp''j\ g''pggf\ u'qh''gcej ''ewwqo\ gt0Qwt''kpcdktw{ ''q''r\ tqxkf\ g'uqnwkqpu''eqwf'' hgcf'' q''gtqukqp''qh''qwt''o\ ctngv''ko\ ci\ g''cpf''dtcpf''xcnwg.''y\ j\ kej ''eqwf''ngcf''q''ewwqo\ gtu''f\ kweqpvkpwkpi ''yj\ gkt''y\ qtm'y\ kyj ''wu''cpf'' uwi pcwkqp''qh''qwt''ewwqo\ gt''dcug.''y\ j\ kej ''kp''wtp''eqwf''j\ cto\ ''qwt''dwukpguu''cpf''eqpuqnkf\ cyf''r\ tqhkwcdktw{0'Qwt''Eqo\ r\ cp{gu''}hwwtg''i\ tqy\ y''y\ km'f\ gr\ gpf''qp''qwt''eqpvkpwgf''gxqnwkqp''qh''ur\ gekhle''ugwu''qh''ugtxkegu''q''f\ gcn'y\ kyj ''yj\ g''tcr\ kf\ n{''gxqnxkpi''cpf''}f\ kxgtug''pggf\ u''qh''qwt''ewwqo\ gtu''kp''c''equw''eqo\ r\ gykkxg''cpf''ghhgevkxg''o\ cppgt0''}$

380' Ut kpi gpv''gpxkt qpo gpwn''j genj ''epf''uc lgv{''ney u'epf''t gi wne skqpu''qt''ust kpi gpv''gp lqt ego gpv''qlt''gz kuskpi ''
gpxkt qpo gpwn'j genj 'epf'uc lgv{'hey u'epf't gi wne skqpu'b c{'t guwn'kp'kpet ge ugf'hed kikskgu'epf'kpet ge ugf'eer ken'
gz r gpf kwit gu0''

Qwt"qr gtc\kqpu"ctg"\undlgev\q"gpxktqpo gpvcn"j gcnj "cpf "\uchgv\{"cpf "qvj gt"tgi wucyt\{"cpf I'qt"\ucwwqt\{"tgs wktgo gpvu"\p"vj g" lwkluf levkqpu"\p"y j lej "y g"qr gtc\g')Qwt"qr gtc\kqpu"o c\{"i gpgtc\g"uki plklecpv"co qwpvu"qh"r qmwcpvu"cpf "y cuvg."uqo g"qh" y j lej "o c\{"dg"j c| ctf qwu0"Y g"ctg"ceeqtf l\p"i n\["\undlgev\q"\xctlqwu"\pc\kqpcn"\ucvg."o wplek cn'cpf "\upcare cn'cpf "\upcare cn'cpf "tgi wuc\kqpu" eqpegtplpi "gpxktqpo gpvcni'r tq\gev\qp"\left\forall f\text{kc."kpenwf lpi "icy u"cf f tguul\pi "\uj g"f knej cti g"qhi'r qmwcpvu"\upvq"\uj g"ckt"cpf "y cyt." \uj g"o cpci go gpv"cpf "f kne qucn'qh"cp\{"j c| ctf qwu'uwduvcpegu."cpf "y cuvgu"cpf "\uj g"engcp/wr "qhi'eqpvco l\upvagu"\upvag

Cu"c"eqpugs wgpeg"qh" wpcp\lekr cvgf "tgi wrcvqt {"qt"qyi gt"f gxgrqr o gpvu."hwwtg"gpxktqpo gpvcn"cpf "tgi wrcvqt {"tgrcvgf" gzr gpf kwtgu"o c { "xct { "uwduvcp\lcm\{"tqo "vj qug"ewttgpvq\{"cp\lekr cvgf 0"Y g"ecppqv\cuuwtg"\{qw\'y cv\qwt"equvu'qh'eqo r r\{kpi "y kj "ewttgpv\cpf"hwwtg"gpxktqpo gpvcn'rcy u"cpf "qyi gt"tgi wrc\lqpu"y km'pqv'cf xgtugn\{"ch\gev\qwt"dwu\lpguu."tguwxu"qh\"qr gtc\lqpu."hhpcpekcn'eqpf kkqp."qt"ecuj "hrqy u\0'\p\"cf kkqp."y g"eqwf "kpewt"uwduvcp\lcm\equvu."qwt"rtqf weut"eqwf "dg" tgut\levg\f"ltqo "gpv\gt\lpi "egt\ckp"o ctngvu."cpf "y g"eqwf "hceg"qyi gt"ucpe\lqpu."kh'y g"y gtg"\q'x\lqnc\g"qt"dgeqo g"hcdng"\wpf gt" gpxktqpo gpvcn'rcy u"qt"\hiqwt"rtqf weut"dgeqo g"pqp/eqo r ncpv\y kj "cr r necdng'tgi wrc\lqpu\0Qwt"r qyp\cn\gzr quwtg'\lpenwf gu" hlpgu'cpf "ekxkn\qt"etko \lpcn\lcpc\krypu"\y kf/rct\\{'rtqr gt\\{'rtoc ci g'\qt'rtgtuqpcn\krypu\cpl\kr\\} ercko u'cpf "engcp/wr"equvu\0Vj g'co qwp\''cpf "\wo\lpi "qh'equvu'\wpf gt"gpxktqpo gpvcn'rcy u'ctg'f \left\hewn\rangle qf kl\left\evo\"

390' Cp{'luqy f qy p'qt'ly qt mlwqrrci gu'cv'qwt'rt qlgev'llogu'b c{'j cxg'ghlgev'qp'qwt'lloudopguu.'hlocpelc nleqpf lolqp'cpf'' t guwnu'qhlqrgt cxlqpu0'

Qwt"rtqlgewi"ctg"uwdlgev"vq"xctkqwu"qrgtcvkqpcn'tkmm"kpemvf kpi ."co qpi "xctkqwu"hcevqtu."vj g"dtgcmf qy p"qt"hckmtg"qh" gs wkr o gpv."f gmc{"kp"uj wf qy p"qh"gzkrvkpi "rkpgu"qt"rtqeguugu."rcdqwt"f kur wgu."pcwtcn'f kucurgtu."ceekf gpwi"cpf "vj g"pggf "vq" eqo r n("y kj "cr r rkecdng"ngi cn'cpf "tgi wncvqt{"tgs wktgo gpvu"Vy g"qeewttgpeg"qh"cp{"qh"vj gug"hcevqtu"eqwf "uki pkhkecpvn(" chhgev'qwt"tguwnu"qh'qr gtcvkqpu"cpf "hkpcpekcn'eqpf kkqp0"Cp{"f kutwr vkqp"kp"qwt"qr gtcvkqpu"f wg"vq"f kur wgu"qt "qvj gt"kuuwgu" y kj "qwt"go r nq{ggu"qt"eqpvtcev'ncdqwt"y qtm'hqteg"o c{"cf xgtugn("chhgev'qwt"dwukpguu"cpf "tguwnu"qh"qr gtcvkqpu0'Nqpi "rgtkqf u"qh'dwukpguu"f kutwr vkqp"eqwf "tguwnv'kp"c"nquu"qh'ewunqo gtu0'Cnj qwi j "y g"vcng"r tgecwkqpu'vq"o kpko kj g"vj g"tkumiqh" cp{"uki pkhkecpviqr gtcvkqpcnir tqdngo u"cv'qwt"qr gtcvkqp"uksgu."vj gtg"ecp"dg"pq"cuuwtcpeg"vj cv'y g'y kmipqv'hceg'uwej 'f kutwr vkqpu" kp"vj g"hwwtg0'

3:0 Y g'l gpgtcm('f q'dwulpguu'ý ký 'qwt 'èwusqo gtu'dp'r wtej cug''qtf gt'dculu'cpf'f q'pqv'gpvgt'lpvq'hqpi 'vgto 'èqpvtceu''
y ký 'b qus'qh'ý go 0'
"

 $Qwt''dwukpguu''ku''f\ gr\ gpf\ gpv'qp''qwt''eqpvkpwkpi\ ''tgrcvkqpuj\ kr\ u''y\ kj\ ''qwt''ewnqo\ gtu0'Qwt''Eqo\ r\ cp{ ''pgkj gt''j\ cu''cp{ ''nqpi /vgto'' eqpvtcev'y\ kj ''cp{ ''qht''ewnqo\ gtu''pqt''j\ cu''cp{ ''nqpi /vgto'' r\ qkpvgf'' cp{ ''gzenwkxg''ci\ gpwu''hqt''j\ cpf\ rkpi ''ku''qr\ gtcvkqpu0'Cp{ ''ej\ cpi\ g''kp''j\ g''dw{kpi ''r\ cwgtp''qht''qwt''gpf ''wugtu''qt''f\ kucuuqekcvkqp''qh'' o\ clqt''ewnqo\ gtu''ecp''cf\ xgtugn{ ''chlgev''j\ g''dwukpguu''qh'qwt''Eqo\ r\ cp{ (0'Vj\ g''nquu''qh''qt''kpvgttwr\ vkqp''qh''y\ qtm'd{ '.'c'uki\ pkhlecpv''}}$



ewunqo gt"qt"c"pwo dgt"qh'uki pkhecpv'ewunqo gtu"qt"\j g"kpcdkrk\{ "\q"r tqewtg"pgy "qtf gtu"qp"c"tgi wrct "dcuku"qt "cv'cmio c { "j cxg" cp"cf xgtug"ghhgev'qp"qwt"tgxgpwgu."ecuj "hrqy u"cpf "qr gtcvkqpu0"Y g"j cxg"pqv'gpvgtgf "kp"cp { "ci tggo gpv'y kyj "qwt"ewunqo gtu." y g"y qtmiqp"\j g"dcuku"qh'r wtej cug"qtf gt "dcuku0"

3; 0 Qtf gt u'r negf 'd{ 'ewnoqo gt u'b c{ 'dg'f gnc {gf.'b qf lllegf.'ecpegngf 'dt 'pqv'hom{ 'r clf 'hqt 'd{ 'dwt 'ewnoqo gt u 'y j kej '' o c{ 'j cxg'bp 'cf xgt ug'gllegev'dp 'dwt 'dwnlopguu. 'lhp cpekc nleqpf khqp 'cpf 't gnownu'd|tdqr gt c shqp u0'

Y g"o c{"gpeqwpygt"rtqdrgo u"kp"gzgewkpi "yj g"qtf gtu"kp"tgrcykqp"vq"qwt"rtqf wew."qt"gzgewkpi "kv"qp"c"vko gr("dcuku0" Oqtgqxgt."hcevqtu"dg{qpf "qwt"eqpvtqn"qt"y g"eqpvtqn"qh"qwt"ewnqo gtu"o c{"r quvr qpg"y g"f gnkxgt{"qh"uwej "rtqf wewn"qt" qh"f khhewnkgu"qt "qduxt we klapu0"F wg"vq"yj g"r quukdkrkx{ "qh"ecpegmc klapu"qt "ej cpi gu"kp"ueqr g"cpf "uej gf wrg"qh"f grkx gt { "qh" uwej "rtqf wew."tguwnkpi "htqo "qwt"ewuvqo gtøu"f kuetgvkqp"qt"rtqdngo u'y g"gpeqwpvgt"kp"vj g"f gnkxgt { "qh'uwej "rtqf wew."qt" tgcuqpu'qwulf g'qwt'eqpvtqri'qt''y g'eqpvtqri'qh'qwt'ewuvqo gtu.''y g'ecppqv'r tgf lev'y ky 'egtvclpv{ 'y j gp. 'lh'qt''q''y j cv'gzvgpv' y g"o c{"dg"cdrg"vq"f grlxgt"vj g"qtf gtu"r neegf 0'Cf f kklqpcm{."f grc{u"kp"vj g"f grlxgt{"qh"uwej "r tqf wewl'ecp"rgcf "vq"ewnqo gtu" $fgnc \{ kpi \ "qt"tghwukpi \ "vq"r \ c \{ "vj \ g"co \ qwpv."kp"r \ ctv'qt"hwm"vj \ cv'y \ g"gzr \ gev'vq"dg"r \ ckf \ "kp"tgur \ gev'qh'uwej \ "r \ tqf \ wevu0"kp"c \ f \ kkqp."$ gxgp"y j gtg"c"f grlxxgt { "r tqeggf u"cu"uej gf wrgf ."kv'ku"r quuldrg"yj cv"yj g"eqpvtcevkpi "r ctvkgu"o c { "f ghcwnv"qt"qyj gty kug"hckn'vq" rc{"co qwpwlqy gf 0Y j krg"y g"j cxg"pqv"{gv"gzrgtkgpegf "cp{"o cygtkcrif grc{."tgf wevkqp"kp"ueqrg."ecpegrcvkqp."gzgewkqp" f khhkewn{.'rc{o gpv'rqurrqpgo gpv'qt'rc{o gpv'fghcwn/y kj 'tgi ctf ''\q'\y g''qtfgtu'rncegf 'y kj ''wu ''qt 'fkur wgu'y kj ''ewnqo gtu'' kp'tgur gev'qh'cp{ "qh'vj g'hqtgi qkpi ."cp{ 'uwej "cf xgtug"gxgpv'kp"vj g'hwwtg'eqwrf "o cvgtkcm{ "j cto "qwt'ecuj "hrqy "r qukklqp"cpf " kpeqo g0'Hwtyj gt."y g"qr gtcvg"kp"j ki j n("eqo r gwkkxg"o ctngwrkp"tgncwkqp"vq"qwt"r tqf wewry j gtg"kv'kur'f khhlewnv'vq"r tgf kev' $y\ j\ gy'\ g''\ km'tgegkxg''twej\ 'cy\ ctf\ uOC\ u'c'tguwnx''qwt'tguwnx''qwt'tguwnx''qwt'tguwnx''qwt'tguwnx''qwt'tguwnx''qwt'tguwnx''qwt''xq''s\ wctvgt''q''s\ wctvgt''$ cpf "{ gct '\q"{ gct '\q"{ gct '\q"{ gr gpf kpi 'qp"y j gyj gt 'cpf 'y j gp"\uwej ''qtf gtu'ctg''cy ctf gf '\q'\wu'cpf '\yj g'eqo o gpego gpv'cpf 'r tqi tguu''qh'' y qtm'wpf gt "\j g"qtf gtu'r neegf 0'Hqt "hwt y gt "f gvcku'qh'qwt "dwulpguu." r ngcug "t ghgt "ej cr vgt "vkurgf " \tilde{o} Qwt "Dwulpguu \tilde{o} " dgi lpplpi " qp'Rci g''; 5''qh''y ku'Ftchv'Rtqur gewu0'

420' Qwt'dwulpguu'ku'ècr kscrlkp vgpulxg0lkti'y g'gzrgt lgpeg'lpuwlthelgpv'ècuj 'hnqy u'iq'b ggv't gs wht gf 'r c {o gp vu'dp 'dwt 'f gdv' cpf 'y qt mlpi 'ecr kscrlt gs wht go gp vu 'tj gt g'b c { 'dg'cp 'cf xgt ug'ghtgev'dp 'dwt 'dr gt c shqp u0'

Qwt''dwukpguu''tgs wktgu''c''uki pkhecpv'co qwpv'qh'y qtmkpi "ecr kscn'y j kej "ku'dcugf "qp"egtvckp"cuuwo r vkqpu."cpf "yj gtghqtg."cp{" ej cpi g'qh'uwej "cuuwo r vkqpu'y qwrf 'tguww'kp"ej cpi gu''q'qwt'y qtmkpi "ecr kscn'tgs wktgo gpwt0Kp"o cp{"eqpvtcevu."uki pkhecpv" co qwpwi'qh'y qtmkpi "ecr kscn'tgs wktgo gpvt0Kp"o cp{"eqpvtcevu."uki pkhecpv" co qwpwi'qh'y qtmkpi "ecr kscn'tgs wktgo gpvt0kg"tguqwtegu" cpf "qy gt"y qtm'qp"r tqlgevu'dghqtg"r c{o gpv'ku'tgegkxgf "htqo "enkgpvt0Qwt"y qtmkpi "ecr kscn'tgs wktgo gpvt"o c{"kpetgcug'f wg" q"cp"kpetgcug'kp"y g"ukl g"qh'qwt"qr gtcvkqpu'cpf "yj g'pwo dgt"cpf "ukl g"qh'r tqlgevu'yj cv'ctg'tgs wktgf "\q"dg"gzgewgf "y kyj kp"c" uko krct"vko ghtco g0"

Qwt'ecr kcn'gzr gpf kwtg'tgs wtgo gpw'cpf 'i tqy y 'intcygi { 'iy wu'tgs wtg'eqpvkpwgf 'ceeguu'vq'uki plthecpv'co qwpw'qh'ecr kcn' qp"ceegr wdng"yto u0'Y g"ecppqv'cumtg" { qw'yi cv'o ctngv'eqpf kkqpu"cpf "qyi gt "hceytu"y km'r gto k''hwwtg"r tqlgev'cpf "ces wkukkqp"hpcpekpi u.'f gdv'qt "gs wkx{ ."qp"yto u"ceegr wdng"vq"wu0'Qwt "cdktkx{ "vq"cttcpi g"hpcpekpi "cpf "yi g"equwu"qh'uwej "hpcpekpi "ctg" f gr gpf gpv' qp" pwo gtqwu" hcevqtu." kpenwf kpi "i gpgtcn' geqpqo ke" cpf "ecr kcn' o ctngv' eqpf kkqpu." etgf kv' cxckrcdktkx{ "htqo "hpcpekcn' kpurkwwlqpu." yi g"co qwpv'cpf "ygto u"qh'qwt "gzkuvkpi "kpf gdvgf pguu." kpxguvqt "eqphkf gpeg." yi g" eqpvkpwgf 'uweeguu'qh'ewttgpv'r tqlgewi'cpf "rcy u'yi cv'ctg'eqpf wekxg'vq'qwt 'tckukpi "ecr kcn'lp'yi ku'o cppgt0"

430' Y g'hveg'eqo rgwhlqp'hp'hwt'dwulpguu'ht qo 'hti cph|gf'epf'wpqti cph|gf'rw{gtu.'y j kej 'b c{'efxgtugn{'ehlgev'qwt'' dwulpguu'hrgtevhqp'epf'hlpepekenleqpfhkqp0'

440' Kortqrgt'luqtci g.'rtqeguulpi 'cpf'j cpf npi 'qhtcy 'b cvgtkcnı'cpf'lhpkuj gf'rtqf wevu'b c{'ecwug'f co ci g'lq'qwt'' hpxgpvqt{'hgcf lpi 'lq'cp'cf xgtug'ghlgev'qp'qwt'dwulpguu.'t guwnu'qh'qrgt cvlqpu'cpf'ecuj 'hqy u0''

Qwt"kpxgpvqt {"r tko ctkn("eqpukun"qh"tcy "o cytkcni"cpf "hkpkuj gf" r tqf wew0'Qwt"tcy "o cytkcni"ctg"uwegr vkdrg"vq"o qkuwtg" eqpvco kpcvkqp"kh"pqv"cr r tqr tkcvgn("uvqtgf ."j cpf rgf "cpf" r tqeguugf ."y j kej "o c {"chhgev"y g"s wchs/{"qh"y g"hkpkuj gf" r tqf wev0' kp"y g"gxgpv"uwej "c"eqpvco kpcvkqp"ku"f gwgevgf "cv"y g"hcekts/{"f wtkpi "s wchs/{"ej gemu."y g"o c {"dg"tgs wktgf" vq"vcng"cr r tqr tkcvg" o gcuwtgu"vq"f geqpvco kpcvg"y g"tcy "o cytkcnu"vq"y g"gzvgpv"r quwkdrg."y j kej "eqwrf" o cytkcnu" ("cpf" cf xgtugn("chhgev"qwt" dwwkpguu. "hpcpekcnieqpf kkqp."tguwnu"qh"qr gtcvkqpu. "qt"ecuj "hqy u0"Ko r tqr gt"uvqtci g"o c {"cnuq"tguwnv"kp"j ki j gt"y cp"wuvcn" ur qkrci g"qh"kpxgpvqt {"f wg"vq"cf xgtug"y gcyj gt"eqpf kkqpu"qt"nqpi gt"y cp"wuvcn\undaligned g"r gtkqf u."y j kej "o c {"cnuq"tgs wktg"wu"



vy "kpewt" cf f kskqpcn"gzr gpugu" kp" tgr rcekpi "vj cv"r qt kqp"qh" vj g"kpxgpvqt { "cpf 1"qt "kpewt" cf f kskqpcn"gzr gpugu" kp" o ckpvgpcpeg" cpf "ko r tqxgo gpv"qh" qwt" uvqtci g"kphtcuxtwewtg. "y j kej "o c { "cf xgtugn" ("chhgev" qwt" r tqhkv" o cti kpu" o

450' Qwt'dwdpguu'lu'o cprqy gt'lpvgpulxg'cpf'qwt'dwdpguu'qrgtcvlqpu'o c{'dg'o cvgt lcm{'cfxgt ugn{'chlgevgf'd{'lat lagu.''} y qt mlaqrrci gu'qt 'lpetgc ugf'y ci g'fgo cpf u'd{'qwt'go rm{ggu'qt''y qug'qh'qwt'lawrrhgt u'''}

Y g"ctg"kp"ugtxkegu"kpf wmt {"cpf"qwt"dwukpguu"ku"f gr gpf gpv'qp"j wo cp"tguqwteg"hqt"ectt{kpi "qww"ku"qr gtc\kqpu0'Uj qtvci g" qh\undurkngf "I"wpunkngf "r gtuqppgn'qt"y qtm\undurqr cci gu'ecwugf "d{ 'f kuci tggo gpwu'y kji "go r nq{ggu'eqwf 'j cxg"cp"cf xgtug'ghlgev' qp"qwt"dwukpguu"cpf "tguwnu"qh"qr gtc\kqpu0'Vj qwi j "y g"j cxg"pqv'gzr gtkgpegf "cp{"o clqt"f kutwr kqpu"kp"qwt"dwukpguu" qr gtc\kqpu1' ky"\q' f kur wgu'qt"qyi gt"r tqdngo u'y kji "qwt"y qtmlhqteg"kp"j g"r cuv=j qy gxgt."\yi gtg'ecp"dg"pq"cuwtcpeg"\yi cv'y g" y kni'pqv'gzr gtkgpeg"uwej "f kutwr kqpu"kp"yi g"hwwtg0'Uwej "f kutwr kqpu"o c{"cf xgtugn{"chhgev'qwt"dwukpguu"cpf "tguwnu"qh" qr gtc\kqpu"cpf "o c{"cnuq"f kxgtv'yi g"o cpci go gpvu"cwgp\kqp"cpf "tguwnv'kp"kpetgcugf "equvu0"

 $Y g"ctg"cnnq"uwdlgev'vq"ncy u"cpf"tgi wncwlqpu'i qxgtplpi "tgncwlqpuj kr u"y kj "go r m{ggu."kp"uwej "ctgcu"cu"o kplo wo "y ci g" cpf "o czko wo "y qtmlpi "j qwtu."qxgtwlo g."y qtmlpi "eqpf kwlqpu."j ktwpi "cpf "vgto kpcvlpi "qh"go r m{ggu"cpf "y qtmlr gto kw0' Cnj qwi j "qwt"go r m{ggu"ctg"pqv'ewttgpvn{"wpkqpk|gf."j gtg"ecp"dg"pq"cuuwtcpeg"ij cv'\j g{"y kmlpqv'wpkqpk|g"hp"j g'hwwtg0' Khiqwt"go r m{ggu"wpkqpk|g."kv'o c{"dgeqo g"f khhlewn'hqt"wu"vq"o ckpvckp. "hngzkdng"r qrkekgu."cpf "y g"o c{"hceg"j g"ij tgcv'qh' ncdqwt "wptguv."y qtmlunqr r ci gu"cpf "f kxgtukqp"qh"qwt "o cpci go gpwu"cwgpvkqp"f wg"vq"wpkqp"kpvgtxgpvkqp."y j kej "o c{"j cxg" c"o cyttlcn'cf xgtug'ko r cev'qp"qwt"dwukpguu."tguwwu"qh'qr gtcvkqpu"cpf "hlpcpelcn'eqpf kkqp0'$

460' Vj g'ij qtvci g''qt''pqp/cxckvcdkkk{''qh'rqy gt''hcekkkgu''o c{''cfxgtugn{''chtgev''qwt''dwukpguu''cpf''j cxg''cp''cfxgtug'' ko rcev'qp''qwt''tguwnu'qh'qrgtcvkqpu''cpf''hpcpekcn'eqpfkkqp0'''

Qwt"dwwlpguu"r tqeguugu"tgs wltg"r qy gt"hcelddgu0'Vj g"s wcpwo "cpf "pcwtg"qh"r qy gt"tgs wltgo gpuu"qh"qwt "lpf wunt {"cpf" Eqo r cp{ "ku'uwej "ij cv'kb'ecppqv'dg"twr r rgo gpvgf "l'cwi o gpvgf "d{ "cngtpcvkxg"l'lpf gr gpf gpv'uqwtegu'qhl'r qy gt"twr r n{ "tulpeg" kv'lpxqrxgu'uki pkhlecpv'ecr kcn'gzr gpf kwtg"cpf "r gt"wpkb'equv'qh"grgevtlekx{"r tqf wegf "ku'xgt{"j ki j "lp"xley "qhl'lpetgculpi "qki" r tlegu"cpf "qyi gt"eqpuvtclpvu0'Y g"ctg"o clpn{"f gr gpf gpv'qp"Ucvg"I qxgtpo gpv'hqt"o ggvkpi "qwt "grgevtlekx{"tgs wltgo gpvu0' Cp{"f ghcwnu"qt"pqp/eqo r nlcpeg"qh"yi g"eqpf klqpu"o c{"tgpf gt"wu'nlcdrg"hqt"yto kpcvlqp"qh"yi g"ci tggo gpv'qt"cp{"hwwtg" ej cpi gu"lp"yi g"vgto u"qh"yi g"ci tggo gpv'o c{"rgcf "q"lpetgcugf "equvu."yi gtgd{"chlgevkpi "yi g"rtqhkcdlrkx{0'Hxtyi gt"ulpeg"y g" ctg"o clqtn{"f gr gpf gpv'qp"yi ktf "r ctv{"r qy gt"uwr r n{ ='yi gtg"o c{"dg"hcevqtu"dg{qpf "qwt"eqpvtqn'chlgevkpi "yi g"uwr r n{ "qh" r qy gt0'Cp{"f kutwr vlqp"l'pqp"cxckrcdlrkx{"qh"r qy gt"uj cml'f ktgevn{"chlgev'qwt"r tqf wevlqp"y j kej "kp"wtp"uj cml'j cxg"cp"lo r cev" qp"r tqhkcdlrkx{"cpf "wtpqxgt"qh"qwt"Eqo r cp{0"

470' Kil'y g'hckil'q'equa/ghigevkxgn('\wtp'gzkakpi 'ewuaqo gtu'hpvq'tgrgcv'ewuaqo gtu'qt'\q'ces wktg'pgy 'ewuaqo gtu'qwt'' dwuhpguu. 'hpcpekcnleqpf kkqp. 'cpf'tguwnu'qhlqrgtcvkqpu'y qwnf'dg'j cto gf0'

Vj g"i tqy y "qh"qwt"dwlbguu"ku"f gr gpf gpv'wr qp"qwt"cdktk{ "vq"eqpvkpwg"vq"i tqy "d{ "equv/ghtgevkxgn{ "wtpkpi "gzknkpi "ewnqo gtu"kpvq"tgr gcv'ewnqo gtu"cpf "cf f kpi "pgy "ewnqo gtu0Cnj qwi j "y g"dgrlgxg"yj cv'o cp{ "qh'qwt"ewnqo gtu"qtki kpcvg" htqo "y qtf/qh'o qwj "cpf "qyj gt"pqp/r ckf "tghgttcm."y g"gzr gev'vq"eqpvkpwg"vq"ces wltg"cf f kklqpcri'ewnqo gtu"cmi'qh'y j kej "ewnqo gtu."qwt"qxgtcmi'r tqhkcdktk{0'Ki'y g"ctg"pqv'cdrg"vq"eqpvkpwg"vq"gzr cpf "qwt"ewnqo gt"dcug"qt"hckri'vq"tgvckp" ewnqo gtu."qwt"pgv'ucrgu'o c{ "i tqy "o qtg"urqy n{ "y cp"gzr gevgf"qt"f gerkpg0'Qwt"cdkrk{ "vq"cwtcev'pgy "ewnqo gtu"cpf" kpetgcug"pgv'ucrgu'htqo "gzknkpi "ewnqo gtu"cmq"f gr gpf u'kp"rcti g'r ctv'qp"qwt"cdkrk{ "vq"gpj cpeg"cpf "ko r tqxg"qwt"gzknkpi "r tqf wew"cpf "vq"kpvtqf weg"pgy "r tqf wew"cpf "ugtxkegu"y cv'cr r gcri'q"y g"ewnqo gtu "kp"gcej "ecug. "kp"c"klo gn{ "o cppgt0'Y g" cmq"o wnv'dg"cdrg"vq"kf gpvkh{ "cpf "qtk kpcyg"vtgpf u."cu'y gmi'cu'cpvkekr cyg"cpf "tgcev'vq"ej cpi kpi "eqpuwo gt"f go cpf u'kp"c" vko gn{ "o cppgt0'Yj g"tweeguu'qh'bgy "r tqf wewl'cpf "ugtxkegu'f gr gpf u'qp'ugxgtcrihcevqtu."kpenxf kpi "y gkt "klo gn{ "kpvtqf weklqp" cpf "eqo r rgxkqp."unhhekgpv'f go cpf ."cpf "equv'ghtgevkxgpguu0'Y j kg"y g"gzegr v'ko r tqxgo gpw"kp"y g"r gthqto cpeg"qhtqwt" dwlxpguu"cpf "qr gtcxkqpu."cp{ "hrcy u'qt"f kuucvkihcevkqp"y kj "y g"s wcrkx{ ."r tkekpi "qh"r tqf wew."qt"ej cpi gu'y g"o cmg"qq'wt" r tqf wew."cpf "ugtxkegu'f "y tqxkf g'j k j /s wcrkx{ 'lwr r qtv'q"ewnqo gtu'qt" gm 'tguqnxg'kunwgu'kp"c'ko gn{ "cpf" ceegr wcdrg"o cppgt."qwt "cdkrkx{ "q"cwtcev'cpf "tgckp"ewnqo gtu'eqwf "dg"cf xgtugn{ "chigevgf 0'Ki'qwt "pwo dgt "qh'ewnqo gtu" f gerkpgu'qt "hnwewcygu'hqt"cp{ "qh''y gt"tgcuqpu."qwt "dwukpguu'y qwrf "uwhhgt"cpf "rgcf "vq"pgi cxkxg'r wdrkekx{ "qh'qwt" dtcpf 0'

480' Vj gtg'ctg'egtw.hp'f kuetgrcpelgu'l'gttqtu'pqvkegf 'hp'lqqo g'qh'qwt'eqtrqtcvg'tgeqtf u'tgrw.hpi '\q'hqto u'hhgf '\y ky '\ig g''
Tgi kustct''qh'Eqo rcplgu'cpf ''qvj gt'rtqxkulqpu''qh'Eqo rcplgu'Cev.''42350'Cp{''rgpcn\{''qt''cevlqp'\wmgp''d\{''cp\{''\tent{top}\footnote{ht}\tent{top}\footnote{ht}\tent{top}\footnote{ht}\tent{ht}\ten

Vj gtg"ctg"hgy "f kuetgr cpekgu"pqvkegf "kp"uqo g"qh"qwt"eqtr qtcvg"tgeqtf u"tgrcvkpi "vq"g/hqto u"hkrgf "y kij "vj g"Tgi kurtct"qh" Eqo r cpkgu."y j kej "kpvgt/cnkc"kpenwf gu"ergtkecn'gttqtu'kp"vj g"G/hqto u'hkrgf "d{ "qwt"Eqo r cp{ "y kij "vj g"TQE"kp"r cuv"{ gctu. "hqt" kpuvcpeg. "vj g"eqo r cp{ "j cu"cvcej gf "y tqpi "cvcej o gpv'kp"vj g"hqto "hkrgf "y kij "TQE0"

Kp"cffkkkqp."rtqxkukqpu"qh"UU/3"cpf"UU/4"qh"yjg"Eqorcpkgu"Cev."4235"ygtg"igpgtcm{"eqornkgf"d{"yjg"eqorcp{"cv"yjg" kkog"qh"rtgrctcvkqp"qh"yjg"fqewogpvu"hqt"hkmkpi"qh"hqtou0"Hwtyjgt."yjg"Eqorcp{"ku"eqorn{kpi"ykjg"uckf"tgiwcvkqp"rquv"kfgpvkhkecvkqp"qh"yjg"ucog0"Pqvkegu"oc{dg"kuuwgf"wrqp"qwt"Eqorcp{"cpf"hkpgu"qt"rgpcnkgu"oc{"cnuq"dg"korqugf"



wrqp"qwt"Eqorcp{."yjkej"oc{"cfxgtugn{"chhgev'qwt"cfokpkutcwlqp"htqo"eqornkcpeg"rgturgevkxg0'Vjgtg"ecp"dg"pq"cuuwtcpeg"ijcv'pq"rgpcn'cewlqp"yknidg"vcngp"cickpuv'wu'd{"ijg"tgiwcvqt{"cwjqtkxkgu'ykj"tgurgev'vq'ijg"pqp/eqornkcpegu0'Ki'cp{"cfxgtug"cewlqpu'ctg"vcngp"cickpuv'wu."qwt"hkpcpekcn'tguwnwu'eqwrf"dg"chhgevgf0"

490' Y g'J cxg'crrhgf 'hqt'tgi kutchqp 'hhtij g'y qtf'b ctmbCUUQENCVGF 'EQCVGT Uö'dwv'f q'p qv'qy p 'ij g'itcf go ctm' ngi cm('tu'qp 'f cvgOY g'b c{'dg'wpcdng'iq'cf gs wcvgn('ttqvgev'qwt'hpvgngewcnlttqrgtv\(0Hwtv) gto qtg.'y g'b c{'dg'' uwdlgev'iq'encho u'cngi hpi 'dtgcej 'qhtij htf/rctv\(1pvgngewcnlttqrgtv\(1thi) tuO'\)

4:0 Y g'j cxg'trrhgf 'hqt't gi hut chqp'qh'qwt'hqi q'b' Associated Coaters ö'ldwv'f q'pqv'qy p'hj g'ht cf go ct mhgi cm{'tcu'} qp'f cvg0Y g'b c{'ldg'hwpcdrg'hq't'f gs wcvgn{'rt qvgev'qwt 'hpvgngewcn'rt qr gt v{0Hwt vj gto qt g. 'y g'b c{'ldg'hwdlgev'hq'' encho u't ngi hpi 'dt gc ej 'qh'hj htf/rct v{'hpvgngewcn'rt qr gt v{'t ki j vu0'}

4; 0 Dtgcnf qy p'qhlb cej kpgt {'cpf' l'qt 'gs whr o gpv'kngf 'hqt 'kj g'r wtr qug'qhlb cpwhcewt kpi 'rt qeguu0'

Cp{"dtgcnfqyp"qt"fghgev"hp"yjg"ocejkpgt{"cpf"1"qt"yjg"gswkrogpv"wugf"hqt"yjg"rwtrqug"qh"qwt"ocpwhcewtkpi"rtqeguu"oc{"fgmc{"'yjg"rtqfwevkqp"rtqeguu"cu"c"yjqmg"cpf"tguwnv"kp"okuukpi"fgcfnkpgu"kp"fgnkxgt{"qh"rtqfwev"kh"yg"ctg"cdmg"vq"tgrckt"yjg"ocejkpgu"qt"tgrmeg"kvykjkp"tgngxcpv'vkognkpgu0Cp{"uwej"fgmc{u"oc{"jcxg"cp"cfxgtug"ghhgev'qp"yjg"dwukpguu"qh"yjg"Eqorcp{0'

520 Mily g'ctg'wpcdrg'sq'tgur qpf 'sq'sj g'f go cpf u'lyhlywt 'gz kuskpi 'cpf 'pgy 'erkgp nu 'lyt 'cf cr v'sq'sgej p qrqi kecnlej cpi gu'' qt 'cf xcp egu 'lywt 'dwulpguu'cpf 'l t qy sj 'eqwrf 'dg'cf xgt ugrf 'chhgevgf 0'

Qwt"kpf wux {"ku"ej ctcevetk gf "d{ "kpetgcukpi n{ "eqo r ngz"cpf "kpvgi tcvgf "kphtcuxtwewtg"cpf "ugtxkegu."pgy "cpf "ej cpi kpi "dwukpguu"o qf gnu"cpf "tcr kf "vgej pqnqi kecn"cpf "tgi wrcvqt {"ej cpi gu0Qwt"enkppvg/pggf u"cpf "f go cpf u"hqt "qwt"ugtxkegu"gxqnxg" y kj "vj gug"ej cpi gu0'Qwt "hwwtg"uweeguu"y knif gr gpf ."kp"r ctv."qp"qwt "cdktk{ "vq"tgur qpf "vq"qwt "enkpvwo"f go cpf u"hqt "pgy "ugtxkegu."ecr cdkrkkkgu"cpf "vgej pqnqi kgu"qp"c"vko gn{ "cpf "equv/ghhgevkxg"dcuku0'Y g"cnq"pggf "vq"cf cr v"vq"vgej pqnqi kecn" cf xcpego gpvu"cpf "nggr "r ceg"y kj "ej cpi kpi "tgi wrcvqt { "uvcpf ctf u"vq"cf ftguu"qwt"enkppvwo"kpetgcukpi n{ "uvqr j kukecvgf" tgs wktgo gpvu0'Vtcpukkhqpkpi "vq"vj gug"pgy "vgej pqnqi kgu"o c{ "dg"f kut wr vkxg"vq"qwt "tguqwtegu"cpf "vj g"ugtxkegu"y g"r tqxkf g" cpf "o c{"hpetgcug"qwt "tgncpeg"qp"vj ktf/r ctv{ "ugtxkeg"t tqxkf gtu0'Kn'y g"hckn'vq"cf cr v'qt "nggr "r ceg"y kj "pgy "vgej pqnqi kgu"vp" c"vko gn{ "o cppgt."r tqxkf g"ewuvqo gtu"y kj "dgwgt"ugtxkegu"cpf "wugt "gzr gtkgpeg."qt"tgvckp"cpf "cwtcev'unkngf "vgej pqnqi {" uvchh "kv'eqwrf "j cto "qwt"cdktk{ "vq"eqo r gvg. "f getgcug"y g"xcnwg"qh"qwt"ugtxkegu"vq"q wt"enkgpvu."cpf "cf xgtugn{ "chhgev'qwt" dwukpguu"cpf "hwwtg"i tqy yj 0'



530' 'O clqt 'htcwf.' 'lcrugu' qh'llp vgt pcnlèqp vt qn'lqt 'lu (usgo 'hchwt gu'eqwrf 'lcf xgt ugn ('horcev' bj g'eqorcp {øu'd wuhp gund''

 $\label{thm:condition} Qwt"Eqo\ r\ cp \{ "ku"xwpgtcdrg" vq"tkun"ctkukpi\ "htqo\ "vj\ g"hcknxtg"qh"go\ r\ rn \{ ggu"vq"cf\ j\ gtg"vq"cr\ r\ tqxgf\ "r\ tqegf\ wtgu."u\{uvgo\ "eqpvtqnu."htcwf\ ."u\{uvgo\ "hcknxtgu"vq"tkungo\ "f\ ktwr\ vqpu."eqo\ o\ wpkecvkqp"u\{uvgo\ u'hcknxtg"cpf\ 'kpvgtegr\ vkqp"f\ wtkpi\ "vcpuo\ kuukqp"vj\ tqwi\ j\ "gz\ vgtpcri'eqo\ o\ wpkecvkqp"ej\ cppgnu"qt"pgw\ qtmu0Hcknxtg"vq"r\ tqvgev'htcwf\ "qt"dtgcej\ "kp"ugewtkv{"o\ c{"cf\ xgtugn{"chtgevj'qwt"Eqo\ r\ cp{gu"vq"cf\ j\ gtpgu"vq"cf\ j\ gtpuu"q"cf\ j\ gtgu"vq"cf\ j\ gtg"vq"cr\ r\ tqxgf\ "r\ tqxggv'htcwf\ "qt"dtgcej\ "kp"ugewtkv{"o\ c{"cf\ ygu"vq"cf\ j\ gtpuu"q"cf\ j\ gtpuu"q"cf\ j\ gtpuu"cf\ j\ gtpuu"cf\$

540' Y g''eqpshpwg''sq''gzrıqtg''sj g'f kxgtullilecshqp''qh'qwt''dwulpguu''cpf''sj g'llorıgo gpxxhqp''qh'pgy ''ugtxkegu0'Vj gug'' f kxgtullilecshqpu'cpf''qwt''qij gt'lutcsgi ke'lphshcskxgu'o c{'pqv'dg'luveeguulwn'\y j kej 'o c{'cfxgtugn('chhges'qwt'dwulpguu'' cpf'tguwnu'\qhtqrgtcshqpu0''

550' I gpgtcn'geappa ke'cpf'o ctmgv'eapfkkappu'kp'Kpfkc'cpf'i nadcm('eawnf'f cxg'c'o cvgtkcn'cfxgtug'ghlgev'ap'awt'' dwulpguu.'hpcpekcn'eapfkkap.'ecuj 'hay u 'tguwnu'ahlargtcvlapu'cpf'rtaurgevu0'

Qw"dwwlpguu"ku"j ki j nf "f gr gpf gpv'qp"geqpqo ke"cpf "o ctmgv'eqpf kkqpu"kp"Kpf kc"cpf "qy gt "lwtkuf kevlqpu"y j gtg"y g"qr gtcvg0' I gpgtcn"geqpqo ke"cpf "r qrkkecn"eqpf kkqpu"kp"Kpf kc."uwej "cu"o cetqgeqpqo ke"cpf "o qpgvct { "r qrkekgu."kpf wmt { /ur gekhle" tgpf u."o gti gtu"cpf "ces wkukkqpu"cevkxks{."pi kurevlqp"cpf "tgi wrevlqpu"tgrcvkpi "vq"y g"hkpcpekcn"cpf "ugewtkklgu"kpf wmtkgu." j qwugj qrf "ucxkpi u"tcvg."kpxguvo gpv"kp"cngtpevkxg"hkpcpekcn"kputwo gpvu."wr y ctf "cpf "f qy py ctf "vtgpf u"kp"y g"o ctmgv." dwulpguu"cpf "hkpcpekcn"ugevqtu. "xqrcvkrks{ "h vlugewtks{ "r tkegu." r gtegkxgf "rcemiqh"cwtcevkxgpguu"qh"y g"Kpf kcp"ecr kcnio ctmgv." kphrevlqp."htgki p"f ktgev"kpxguvo gpv."eqpuvo gt "eqphlsf gpeg."ewttgpe{ "cpf "kpvgtguv"tcvg"hmwecvlqpu. "cxckrcdkrks{ "qh"uj qtv' ygto "cpf "hqpi /vgto "o ctmgv"hwpf kpi "hqwtegu"cpf "equv"qh"hwpf kpi. "eqwrf "chhgev"qwt"dwulpguu0I mqlcn"geqpqo ke"cpf "r qrkskecn" eqpf kkqpu"o c{ "cmq"cf xgtugn{ "chhgev"y g"Kpf kcp"geqpqo ke"eqpf kkqpu0'O ctmgv"eqpf kkqpu"o c{ "ej cpi g"tcr kf nf "cpf "y g" kpf kcp"ger kcnio ctmgwi" cxg"gzr gtkgpegf "uki pkhlecpv"xqrcvkrks{ "kp"y g"r cuv0Vj g"Kpf kcp"geqpqo { "j cu"j cf "uwvckpgf "r gtkqf u" qh"j ki j "kphrevlqp"kp"y g"tgggpv"r cuv0Kilphrevlqp"qt"tgcrilpvgtguv"tcvgu"y gtg"vq"tkug"uki pkhlecpv(."y g"vtgpf u"vq) ctf u"kpet gcugf "hkpcpekcn"ucxkpi u"o ki j v"umy "f qy p"qt"tgxgtug."qwt"go r mq gg"equvu"o c{ "kpetgcug"cpf "y g"ucrgu"qh"o cp{ "qh"qwt"r tqf wewi" cpf "ugtxkegu"o c{ "f gerkpg0"

560' Cp{'fghekgpe{'kp'qwt'rtqf wevu'eqwnf'o cmg'qwt'Eqorcp{'lkcdng'hqt'ewnoqogt'enchou'y j kej 'kp'wtp'eqwnf'chhgev' qwt'Eqorcp{)u'tguwnu'qh'qrgtcwqpuU'

 $Qwt"Eqorcp{"ku"dqwpf"d{"ij g"vgto u"cpf"eqpf kklqpu"cu"r megf"dghqtg"ku"ewnqo gtu0"Vj gtg"ctg"pq"ur gektke"tgi wwxkqpu"i qxgtpkpi "ij g"uwr r n{"qh"ij g"uco g."qij gt"ij cp"ij g"i gpgtcn"mcy "qh"eqpvtcew0"Cp{"emko u"o cf g"d{"ij gug"ewnqo gtu"hqt"f ghkekgpe{"kp"qwt"r tqf wew."y qwf "dg"uwdlgev'q"ij gug"vgto u"cpf "eqpf kklqpu."y j kej "ctg"kp"ij g"pcwttg"qh"pqto cn"eqpvtcewcn"qdnki cvkqpu"kp"Kpf kc0"Cp{"xkqmcvkqp"qh"ij gug"qdnki cvkqpu"eqwf "korcev"qwt"Eqorcp{\emptysumu"qh"qr gtcvkqpu0"Hqt"hwtij gt"f gvcknu"qh"qwt"dwukpgun."r ngcug"tghgt"ej cr vgt "kkngf"\emptysumu"pgun.\emptysumu"dgi kppkpi "qp"Rci g"; 5"qh"ij ku"F tchv"Rtqur gewu0"$

570' Qwt'hwpf kpi 'tgs wktgo gpwl'cpf 'kj g'fgrnq{o gpv'qh'Pgv'Rtqeggfu'ctg'dcugf 'qp'b cpci go gpv'gwko cvgu'cpf 'j cxg'' pqv'dggp'kpfgrgpfgpw('crrtckugf0''

Hwt j gt. "qwt" o cpci go gpv'y knij cxg"f keetgylqp" by 'j g"crr hecylqp" qh''y g"P gv'Rtqeggf u "cpf "y gtg"ku"pq"cuuwtcpeg" y cv'y g" Qdlgewi'qh'y g"Kuwg'y knidg"cej kexgf "y kaj kp'y g''do g'htco g"gzr gewgf "qt"cv'cm0"Y g"kpypf "q"wag'y g"P gv'Rtqeggf u"hqt" y g" wtr qugu"f guetklgf "wpf gt" \(\tilde{o}Qdlgewt'qh' \) i g"Kuwgö" qp"r ci g"9; "y j kej "kpenwf gu. "Hwpf kpi "ecr kcn"gzr gpf kwtg" vqv ctf u" kpucmcylqp" qh'r mpv(" o cej kpgt {"kp"qwt"gzknxkpi "r tgo kugu"cpf "Hwpf kpi "qh'y qtmkpi "Ecr kcn"T gs wktgo gpw"qh'qwt"eqo r cp{" cpf "dcmpeg" uj cni'dg"wkrkugf "hqt" I gpgtcn"Eqtr qtcvg" Rwtr qugub Qwt"hwpf kpi "tgs wktgo gpw"cpf "y g"f gr m{o gpv'qhi'y g"P gv' Rtqeggf u"ctg"dcugf "qp" o cpci go gpv'gurko cygu"nqt" y j kej "y g"j cxg"tgrkgf "qp"kpytpcn"cuurwo r vkqpu" j cxg"pqv'dggp"crrtckugf "d{"cp{"kpf gr gpf gpv'ci gpe{0"Y j krg"y g"dgrkexg" y cv'wkrkt cvkqp"qh"P gv'Rtqeggf u'hqt"tgr c{o gpv'qh" mcpu"y qwrf "j gm "wu'vq"tgf weg"qwt"equv'qh'f gdv'cpf "gpcdrg" y g"wkrkt cvkqp"qh'qwt "kpytpcn"ceetwcm"hqt "hwty gt "kpxguvo gpv' kp"dwukpguu"i tqy y "cpf "gzrcpukqp."y g"tgr c{o gpv'qh"mcpu"y km'pqv'tguwnv"kp"y g"etgcvkqp"qh"cp{"vcpi kdrg"cuugwu"nqt"qwt"



Eqo r cp{0I kxgp"yi g"pcwtg"qh"qwt"dwwlpguu"cpf "f wg"\q"xctlqwu"wpegtvclpvlgu"lpxqnxgf ."y g"o c{"dg"wpcdrg"\q"wkrlk g"yi g" P gv"Rtqeggf u"y kyi kp"yi g"vko g"htco g"qt"cu"r gt"yi g"uej gf wrg"qh"f gr m{o gpv"yi cv"y g"ewttgpvn("guvko cvg0"Kp"yi g"ecug"qh" kpetgcug"lp"cewcn"gzr gpugu"qt"uj qt vhcmilp"tgs wkukg"hwpf u."cf f kkqpcnihwpf u'hqt"c'r ct vlewrct "cevkxkv{"y kmidg"o gv"d{"o gcpu" cxckrcdrg"\q"wu."kpenwf lpi "lpvgtpcn'ceet wcni'cpf "cf f kkqpcn'gs wkv{"cpf lqt"f gdv'cttcpi go gpvu0'

580' Cevkxkılgu'lpxqnckpi 'qwt'b cpwhcewtkpi 'rt qeguu'ecp'dg'f cpi gt qwu'cpf 'ecp'ecwug'kplwt { 'vq'r gqr ug'qt 'rt qr gt v{ 'kp'' egt vc kp'ekt ewo uwc pegu0'

 $C"uki pkłkecpv"f kutwr ktpp"cv"cpf "qh"qwt"o cpwhcewtkpi "hcektkkgu"o c {"cf x gtugnf" chłgev"qwt "r tqf wevktpp"uej gf wrgu." etgxgpwg"cpf "cdkrkef" "q"o ggv"ewnqo gt"f go cpf 0'Qwt "dwukpguu"kpxqrxgu"o cpwhcewtkpi "r tqeguugu"yj cv"ecp"dg"r qwgpwkcmf "f cpi gtqwu"\q"qwt"go r mq {ggu0Cp"ceekf gpv"o c {"tguvnn/kp"hquu"qh"khg."f guvtwevkqp"qh"h tqr gtvf "qt"gs wkr o gpv."o cpwhcewtkpi ." qt "f grkxgt {"f grc {u. "qt"o c {"rgcf "vq"uwur gpukqp"qh"qwt "qr gtcvkqpu"cpf "l"qt "ko r qukkqp"qh"rkcdkrkkgu0"Y j krg"y g"dgrkgxg"y g" o c {"o ckpvckp"cf gs wcvg"kpuwtcpeg. "kpvgttwr vkqpu"kp"r tqf wevkqp"cu"c"tguwnn/qh"cp"ceekf gpv"o c {"cnuq"kpetgcug"qwt"equvu"cpf" tgf weg"qwt"tgxggpwg."cpf "o c {"tgs wktg"wu"vq"o cnrg"uwduvcpvkcri'ecr kcri'gzr gpf kwtgu"vq"tgo gf {"vj g"ukwcvkqp"qt"vq"f ghgpf" rkki cvkqp"vj cv"y g"qt"qwt"ugpkqt"o cpci go gpv"o c {"dgeqo g"kpxqrxgf"kp"cu"c"tguwnx"y j kej "o c {"pgi cvkxgnf"chłgev"qwt" rtqhkscdkrkef."dwukpguu."hkpcpekcril eqpf kkqp."tguwnxu"qh"qr gtcvkqpu"cpf"rtqur gew0' Cp {"pgi cvkxg"r wdrkekf"cuuqekcygf" vj gtgy kj ."o c {"j cxg"c"pgi cvkxg"ghtgev"qp"qwt"dwukpguu."hkpcpekcrileqpf kkqp."tguwnxu"qh"qr gtcvkqpu"cpf"rtqur gew0'$

590' Y g'hceg'kpvgpug'eqo rgykskqp'kp'qwt'dwukpguugu'y j kej 'b c{'tho kv'qwt'i tqy yj 'cpf'rtqurgevu0Qwt'Eqo rcp{'hcegu'' uki plikecpv'eqo rgykskqp'htqo 'qyj gt'eqo rcpkgu'kp'Kpf wut{0''

Y g'eqo r gwg'qp''y g'dcuku'qh'c'pwo dgt'qh'hcevqtu.'kpenwf kpi "gz gewkqp.'f gr yj "qhi'r tqf wev'cpf 'lugtxkeg''qhhgtkpi u.'kppqxcvkqp.'' tgr wcvkqp''cpf ''r tkeg0'Qwt''eqo r gvkqtu''o c{ 'j cxg''cf xcpvci gu''qxgt''wu.'kpenwf kpi .''dw''pqv'ho kgf ''vq<'''

- Uwduvcpvkcm('i tgcvgt'hkpcpekcn'tguqwtegu="
- Nqpi gt 'qr gtcvkpi 'j kuvqt { 'vj cp'kp'egtvckp'qh'qvt'dwukpguugu='''
- I tgcvgt "dtcpf "tgeqi pkkqp"co qpi "eqpuwo gtu=""
- Ncti gt"ewuvqo gt"dcugu"kp"cpf "qwukf g"Kpf kc="qt"
- O qtg"f kxgtukhlgf "qr gtc-kqpu"y j kej "cmqy "r tqhkxu"htqo "egtvckp"qr gtc-kqpu"\q"uwr r qtv'qvj gtu"y kyj "nqy gt"r tqhkxcdkrkv{0'
 Vj gug"eqo r gvkkxg"r tguuwtgu"o c{ "chhge-v'qwt"dwukpguu."cpf "qwt"i tqy vj "y km'ncti gn("f gr gpf "qp"qwt"cdkrkv{ "vq"tgur qpf" kp"cp"ghhge-kxg"cpf "vko gn("o cppgt"vq"vj gug"eqo r gvkkxg"r tguuwtgu0'
- 5:0' Qwt'lpcdhho{'\q'b cpci g'i tqy yj 'eqwrf'f hutwrv'qwt'dwuhpguu'epf'tgf weg'qwt'rtqlhoedhho{0Y g'rtqrqug'\q'gzrcpf'' qwt'dwuhpguu'evkekhgu'hp'eqo hpi 'hhpcpekenl{getu0''

Y g"gzr gev'qwt 'hwwtg"i tqy yj "vq'r reeg"uki plkhecpv'f go cpf u"qp"dqyj "qwt"o cpci go gpv'cpf "qwt 'tguqwtegu0Vj ku'y knitgs wktg" wu "vq"eqpvkpwqwun("gxqnxg"cpf "ko r tqxg"qwt "qr gtcvkqpcn "hlpcpekcn"cpf "kpvgtpcn'eqpvtqnu"cetquu"yj g"qti cpkucvkqp0'Kp" r ctvkewrct. "eqpvkpwgf "gzr cpukqp"kpetgcugu'yj g"ej cngpi gu'y g"hceg"kp<"'

- Qwt "cdkrkx{ "\q"ces wkt g"cpf "t gwckp"erkgp vu 'hqt "qwt "ugt x kegu=""
- Ugtxlegu."r tqf wevu'qt"r tlelipi "r qrleligu'lipvtqf wegf "d{"qwt"eqo r gvkqtu="
- Ecr kıcıl'gzr gpf kwtg"cpf "qyj gt "equvu"tgrcvkpi "vq"qwt"qr gtcvkqpu=""
- Vj g"\ko kpi "cpf "pcwtg"qh "cpf "gzr gpugu'lpewttgf 'kp."qwt"o ctng\kpi "ghhqtvu=""
- Tget wkskpi ."tckpkpi "cpf "tgvckpkpi "uwlthekgpv"unkngf "vgej plecn"cpf "o cpci go gpv"r gtuqppgn=""
- Cf j gtkpi "vq"qwt"j ki j "s wcrkx{ "cpf "r tqeguu"gz gewkqp"uvcpf ctf u=""
- O clpvclplpi 'j ki j 'rgxgnı'qh'ewnqo gt 'ucvkulcevlqp=""
 "
 "
- F gxgrqr kpi "cpf" ko r tqxkpi "qwt" kpvgtpcn" cf o kpkutcvkxg" kphtcuxtvevxtg." r ctvkevrctn("qwt" hkpcpekcn" qr gtcvkqpcn" eqo o wpkecvkqpu. "cpf" qvj gt"kpvgtpcn"u{ uvgo u0'



kpxguvqtu0'Ki'y g"ctg"wpcdrg"vq"o cpci g"qwt"i tqy vj "kv'eqwrf "j cxg"cp"cf xgtug"ghhgev'qp"qwt"dwukpguu."tguwnu"qh'qr gtcvkqpu" cpf 'hhpcpekcrl'eqpf kxkqp0'

5; 0 Qwt 'Eqo rcp{'j cu'c'|pgi cvkxg'ecuj 'hqy 'kp'kwtKpxgwkpi 'c'evkxkkgu'qht'j g'Eqo rcp{'kp'rgtkqf 'gpf gf 'qp 'Ugrvgo dgt'' 52.'4245'cpf 'lj g'Hlpcpekcn{gct'|gpf gf 'qp 'O ctej '53.'4245'cpf 'O ctej '53.'4244'cpf 'Hlpcpekpi 'Cevkxkkgu'kp'ij g'' Hlpcpekcn{gct 'gpf gf 'qp 'O ctej '53.'42440Uwwckpgf 'pgi cvkxg'ecuj 'hqy 'eqwnf 'ko rcev'qwt'i tqy yi 'cpf 'dwulpguuO'

Qwt'Eqorcp{'j cf 'pgi cvlxg'ecuj 'hnqy u'htqo 'qwt'qr gtcvlpi 'cevlxkklgu'cu'y gm'cu'hpxguvlpi 'cevlxkklgu'lp''y g'r tgxkqwu''{ gct *u+" cu'r gt 'vj g'Tguvcvgf 'Hlpcpelcn'Uvcvgo gpvu'cpf 'vj g'uco g'ctg'uwo o ctkl gf 'cu'wpf gt<"

* 'kp 'kr mj +''

Rct vlewret u'	Hqt 'Vj g'' rgt kqf 'Gpf gf ''	Hqt'Vj g'Hlpcpekcd[gct'Gpf gf 'Qp''		pf gf 'Qp''
	qp'' Ugr vgo dgt '52.'' 4245"	Octej '53.'' 4245''	Octej '53.'4244''	O ctej '53.'4243''
P gv'Ecuj 'wugf 'kp'Qr gtcvkpi 'Cevkxkskgu''	42096"	840 3"	73078"	202"
P gv'Ecuj 'wugf 'kp''kpxguvkpi 'Cevkxkvkgu''	*68067+"	*5055+"	*770,9+"	202"
P gv'Ecuj 'htqo 'Hkpcpekpi 'Cevkxkkkgu''	460, 9"	*2096+"	; 0; "	202"

Ecuj "hrqy "qh"c"eqo r cp{"ku"c"mg{"kpf kecvqt"vq"uj qy "vj g"gzvgpv"qh"ecuj "i gpgtcvgf "htqo "qr gtcvkqpu"vq"o ggv'ecr kxn" gzr gpf kwtg. "r c{ 'f kxlf gpf u. 'tgr c{ 'hqcpu. 'cpf 'o cmg'pgy "kpxguvo gpvu'y kyj qwv'tckukpi 'hkpcpeg'htqo "gzvgtpcn'tguqwtegu0'Ki" y g"ctg"pqv'cdng"vq'i gpgtcvg"uwhhekgpv'ecuj 'hnqy u'kp'hwwtg. 'kv'o c{ "cf xgtugn("chhgev'qwt "dwukpguu"cpf 'hkpcpekcn'qr gtcvkqpu0' "chhgev'qwt "dwukpguu"cpf 'hkpcpekcn'qr gtcvkqpu0' "gyvgtpcn'tguqwtegu0'Ki"

$620' \textit{Nd} \textit{y} \textit{g'} \textit{t} \textit{t} \textit{g'} \textit{wpcdrg'} \textit{t} \textit{q'wteg'} \textit{dww} \textit{pguu'} \textit{q} \textit{r} \textit{r} \textit{q} \textit{t} \textit{wpk} \textit{skgu'} \textit{g'hgevkxgn} \textit{q} \textit{.'} \textit{y} \textit{g'b c} \textit{g'} \textit{pqv'} \textit{c} \textit{e} \textit{j} \textit{kgxg'} \textit{qwt'} \textit{hpcpekcn} \textit{q} \textit{d} \textit{lgevkxgu} \textit{0'} \textit{d} \textit{g'} \textit{kgu'} \textit{g'hgevkxgn} \textit{q} \textit{g'} \textit{g'b c} \textit{g'} \textit{pqv'} \textit{c} \textit{e} \textit{j} \textit{kgxg'} \textit{qwt'} \textit{hpcpekcn} \textit{q} \textit{d} \textit{lgevkxgu} \textit{0'} \textit{d} \textit{g'} \textit{kgu'} \textit{g'hgevkxgn} \textit{g'} \textit{g'b c} \textit{$

Qwt"cdkkv{"'q"cej kgxg"qwt"hkpcpekcniqdlgevkxgu'y kniif gr gpf "qp"qwt"cdkkv{"'q"kf gpvkh{."gxcnxcvg"cpf "ceeqo r nkij "dwikpguu" qr r qtwpkkkgu0Vq"i tqy "qwt"dwikpguu."y g"y kniipggf "vq"j ktg."vtckp. "iwr gtxkug"cpf "o cpci g"pgy "go r m{ ggu"cpf "vq"ko r ngo gpv" u{ ugo u"ecr cdng"qh"ghtgevkxgn{ "ceeqo o qf cvkpi "qwt"i tqy yi 0'J qy gxgt."y g"ecppqv"cuuwtg"{qw"yi cv"cp{"uwej "go r m{ ggu" y kni'eqpvtkdwg"vq"yi g"uweeguu"qh"qwt"dwikpguu"qt"yi cv"y g"y kni'ko r ngo gpv"uwej "u{ uvgo u"ghtgevkxgn{ 0'Qwt"hcknutg"vq"uqwteg" dwikpguu"qr r qtwpkkgu"ghtgevkxgn{ "eqwf"j cxg"c"o cvgtkcn'cf xgtug"ghtgev'qp"qwt"dwikpguu."hkpcpekcn'eqpf kkqp"cpf "tguwnu" qh'qr gtcvkqpu0KVku"cnnq"r quukdng"yi cv'yi g"uvtcyi kgu"wugf"d{ "wu"kp"yi g"hwwtg"o c{"dg"f khtgtgpv'htqo "yi qug"r tgugpvn{"kp"wug0" P q"cuuwtcpeg"ecp"dg"i kxgp"yi cv'qwt"cpcn{ ugu"qh"o ctngv'cpf "qyi gt"f cvc"qt"yi g"uvtcygi kgu"y g"wug"qt"r ncpu"kp"hwwtg"vq"wug" y kni'dg"uweeguuhwn'wpf gt "xctkqwu"o ctngv'eqpf kkqpu0'

630 Dtcpf 'tgeqi plskqp 'ku'ko rqtxcpv'kq'kj g'lweeguu'dhdwt 'dwukpguu 'cpf 'dwt 'kpcdkiks 'kq'dwkif 'cpf 'o clpxckp'dwt 'dtcpf'' pco gu'y knij cto 'dwt 'dwukpguu 'kkpcpekcnleqpf kskqp'cpf 't guwnu'dh'drgtcxkqp0''

Dtcpf "tgeqi pkkqp"kı"ko r qtvcpv'vq"y g"uweeguu"qh"qw"dwukpguu0'Guvcdrkıj kpi "cpf "o ckpvckpkpi "qw"dtcpf "pco g"kp"yj g" kpf wwt { "qt"hqt"r gqr rg"tgn{ kpi "qp"ugtxkegu"ku"etkkecri'vq"y g"uweeguu"qh"yi g"ewuqo gt"ces wkukkqp"r tqeguu"qh'qwt"dwukpguu0' Cnyj qwi j .'y g'gzr gev'vq"cmqecvg'uki pkhecpv'pwo dgt "qh'tguqwtegu. "hkpcpekcri'cpf "qvj gty kug. "qp"guvcdrkuj kpi "cpf "o ckpvckpkpi " qwt "dtcpf u."pq"cuuwtcpeg"ecp"dg"i kxgp"yj cv'qwt "dtcpf "pco gu"y kni'dg"ghhgevkxg"kp"cwtcevkpi "cpf "i tqy kpi "wugt "cpf "erkgpv' dcug"hqt"qwt"dwukpguugu"qt"yj cv'uwej "ghhqtvu"y kni'dg"equv/ghhgevkxg."y j kej "o c{ "pgi cvkxgn{ "chhgev'qwt "dwukpguu. "hkpcpekcn' eqpf kkqp"cpf "tguwwu"qh'qr gtcvkqpu0'

640' 'Uki pkhecpv'f kut wr wlqpu'kp'qwt 'kphqto cwlqp' 'gej pqnqi {''u{usgo u''qt''dtgcej gu''qh'f cw''ugewt ks{''eqwnf''cfxgtugn{'' chigev'qwt'dwukpguu'cpf'tgrwxcwlqp0''

Y g"o c{"cnq"hceg"e{dgt"yi tgcw"uwej "cu<"*k+"Rj kıj kpi "cpf "Vtqlcpu"/"vti gvkpi "qwt"ewnqo gtu"y j gtgkp"htcwf uvgtu"ugpf "wpuqheksgf "eqf gu"qt"o ckni"vq"qwt"ewnqo gtu"uggnkpi "ceeqwpv"ugpukskzg"kphqto cvkqp"qt"vq"kphgev"ewnqo gt"o cej kpgu"vq" ugctej "cpf "cwgo r v"gz/hkntcvkqp"qh"ceeqwpv"ugpukskzg"kphqto cvkqp="*kk+"J cenkpi "o"y j gtgkp"cwcengtu"uggnivq" cenikpvq"qwt kphtcuvtwewtg"y kij "ij g"r tko ct{"kpvgpvkqp"qh"ecwukpi "tgr wcvkqpcn"f co ci g"vq"wu"d{"f kutwr vkpi "ugtxkegu="*kk+"F cvc"yi ghv"o" Vj ku"ecp"dg"kpvgtpcn"kQo"d{"uqo gqpg"y j q"j cu"ceeguu"vq"f cvc"qh"qwt"Eqo r cp{"qt"gzvgtpcn"y j gtgkp"wpeqppgevgf "e{dgt" etko kpcnn"o c{"cvgo r v"vq"kpvtwf g"kpvq"qwt"pgwy qtm"y kj "vj g"kpvgpvkqp"qh"uvgcnkpi "qwt"f cvc"qt"kphqto cvkqp="cpf" "kx+" Cf xcpegf "r gtuknygpv"yi tgcv"o"c"pgwy qtm"cwcenikp"y j kej "cp"wpcwj qtk gf"r gtuqp"i ckpu"ceeguu"vq"qwt "pgwy qtm"cpf "tgo ckpu" wpf gvgevgf "hqt"c"nqpi "r gtkqf "qh"vko g"Kp"vj g"gxgpv'qh"c"uki pkhkecpv'f genkpg"kp"yj g"f go cpf "hqt"qwt"r tqf wew."qwt"dwukpguu." tguwnu"qh"qr gtcvkqpu"cpf "hipcpekcnleqpf kxhqp"o c{"dg"o cvgtkcm("cpf"cf xgtugn("chhgevgf"0"

Qwt'u{uvgo u'ctg'r qvgpvkcm('xwpgtcdrg'vq'f cvc'ugewtk\{'dtgcej gu.'y j gy gt'd\{'qwt'go r mq\ggu.'qt'qwt'ugtxkeg'r tqxkf gtu'qt'' qyi gtu'' y cv'' o c\{''gzr qug''ugpukkxg'' f cvc'' vq'' wpcwyi qtk\gf'' r gtuqpu0'Y g''r tqeguu'' cpf'' vtcpuhgt'' f cvc.'' kpenwf kpi "r gtuqpcn'' kphqto cvkqp.''hkpcpekcn'ikphqto cvkqp"cpf'' qyi gt''eqphhf gpvkcn'if cvc''r tqxkf gf'' vq''wu''d\{''qwt''enkgpwt0'Cmj qwi j ''y g'' o ckpvckp'' u\{uvgo u''cpf'' r tqegf wtgu''vq''r tgxgpv''wpcwyi qtk\gf'' ceeguu''cpf''qyi gt''ugewtkx\{''dtgcej gu.''kv'ku''r quukdrg''yi cv''wpcwyi qtk\gf''



kpf kxkf wcni"eqwrf "ko r tqr gtn("ceeguu"qwt"u{ uvgo u."qt"ko r tqr gtn("qdvclp"qt"f kuenqug"ugpukxkxg"f cvc"vj cv'y g"r tqeguu"qt" j cpf rg0'F cvc"ugewtkx{"dtgcej gu"eqwrf "rgcf "vq"vj g"rquu"qh"kpvgngewcni'r tqr gtv("qt"eqwrf "rgcf "vq"vj g"r wdrke"gzr quwtg"qh" r gtuqpcnlkphqto cvkqp"kpenwrf kpi "ugpukxkxg'hkpcpekcni'cpf "r gtuqpcnlkphqto cvkqp+"qh'qwt"erlgpvwrlkpxguvqtu'qt"qwt "go r rq{ ggu0' Cp{ 'iwej 'ugewtkx{ 'idtgcej gu'qt 'eqo r tqo kugu'qh'vgej pqrqi { 'u{uvgo u'eqwrf 'tguwn'kp"kpuxkwxkqp"qh'ingi crift tqeggf kpi u'ci ckpuv' wu'cpf 'r qvgpvkcnlko r qukxkqp"qh'ir gpcnkgu."y j kej "o c{ 'j cxg"cp"cf xgtug"ghhgev'qp"qwt"dwukpguu'cpf 'tgr wcvkqp0'

650 Vj g'þcwtg'qh'qwt'dwulpguu'gzrqugu'wu'\q'licdhilo{'encho u'cpf'eqp\tcev'fkurwugu'cpf'qwt'lpfgo pkilgu'o c{'pqv' cfgswcvgn{'rtqvgev'wuOCp{'licdhilo{'lp'gzeguu'qh'qwt'tgugtxgu'qt'lpfgo pkilgu'eqwnf'tguwn'lp'cffkilqpcn'equuu'' y j kej 'y qwnf'tgfweg'qwt'rtqlisuU'

 $\label{thm:power$

660' Gornq{gg'ltcwf'qt'b kueqpf wev'eqwif'j cto 'wu'd{'korcktkpi 'qwt'edkik\{'\q'ewtcev'epf'tgwkp'enkgpui'epf'uwdlgev' wu'\q'lki pkkecpv'lgi cn'kedkik\{'epf'tgrwwkqpcn'j cto 0''

 $Qwt''dwulpguu''ku''gzr qugf "vq"yj g"tkuni'qh''go r m{gg''o kucrr tqr tkckqp. "htcwf "qt"o kucqpf wevO'Qwt"go r m{ggu''eqwrf "o cmg" ko r tqr gt''wug''qt''f kucqug''eqphkf gpvkcnlphqto cvkqp. "y j kej ''eqwrf ''tguwn''lp'tgi wucyt{ "ucpevkqpu''cpf ''ugtkqwu''tgr wcvkqpcn'qt'' hlpcpekcn'j cto 0'Y j krg"y g"untkxg"vq"o qpkqt. "f gygev''cpf "r tgxgpv''htcwf "qt"o kucrr tqr tkckqp"d{ "qwt"go r m{ggu."y tqwi j "xctkqwu''kpytpcn''eqpvtqn''o gcuwtgu."y g"o c{ "dg"wpcdrg" vq"cf gs wcvgn{ "r tgxgpv'qt" f gygt"uwej "cevkxkkgu''kp"cm''ecuguO'Qwt" f gr gpf gpeg"wr qp"cwqo cvgf "u{uvgo u''vq"tgeqtf "cpf "r tqeguu''vcpucevkqpu''o c{ "hwty gt"kpetgcug" y g"tkuni'y cv''vgej pkecn' u{uvgo "hrcy u''qt"go r m{gg''vco r gtkpi "qt"o cpkr wuckqp"qh''y qug''u{uvgo u''y kni'tguwn''kp"nquugu''y cv''ctg"f khhewn''vq"f gygevO' Y j krg'y g"j cxg'pqv'dggp"cdrg"vq''kf gpvkh{ 'uwej 'kuwyu''kp"y j g'r cuv.'y j gtg''eqwrf "dg''kpuvcpegu''qh'htcwf"cpf "o kucqpf wev'd{ "qwt" go r m{ggu."y j kej "o c{" i q''wppqklegf ''nqt "egtvckp" r gtkqf u'qh'klo g"dghqtg''eqttgevkxg''cevkqp''ku''vcngpO'Kp''cf f kkqp."y g''o c{" dg'' uwdlgev'' vq" tgi wcvqt{ "qt" qy gt" r tqeggf kpi u." r gpcnkgu'' qt" qy gt" cevkqpu'' kp" eqppgevkqp" y kj "cp{" uwej "wpcwj qtk| gf" vtcpucevkqp. 'htcwf "qt" o kucrr tqr tkckqp''d{ "qwt"ci gpwl'qt"go r m{ggu."y j kej "eqwrf "cf xgtugn{ "chhgev'qwt'' qqf y km''dwukpguu'' r tqur gewl''cpf "hwwtg"hkpcpekcni'r gthqto cpeg0'Y g"o c{"cnnq"dg"tgs wktgf "q"o cng"i qqf "cp{"o qpgvct{"nqui''vq' g'' chhgevgf" r ctv{0'Gxgp'y j gp'y g"kf gpvkh{"kpuvcpegu''qh''htcwf"cpf" qy gt''o kucqpf wev'Cpf" r wtuwg''ngi ch''geqwug''qt''hkrg''ercho u'y kj "qwt" kpuwtcpeg''ecttkgtu."y g"ecppqv'cuwtg"{qw''y cv'y g''y knltgeqxgt"cp{"co qwpvu''nquv'y tqwi j "wej "ltcwf" 'qt' qy gt''o kucqpf wev'U' kpuwtcpeg'''cctkgtu."y g"ecppqv'cuwtg"{qw''y cv'y g''y knltgeqxgt"cp{"co qwpvu''nquv'y tqwi j "wej "ltcwf" 'qt' qy gt''o kucqpf wev'U' kpuwtcpeg'''cctkgtu."y g"ecppqv'cuwtg"{qw'y cv'y g''y knltgeqxgt"cp{"co qwpvu''nquv'y tqwi j "wej "ltcwf" qy gt''o kucqpf wev'U'$

670' Vj g'txgtci g'kquv'qh'tes whakkqp 'qh'Gs who{ 'Uj ctgu'd{ 'qwt 'Rt qo qvgt u'ht'hqy gt 'tj cp 'tj g'hanwg't theg0''

Qwt "Rtqo qvgtuø'cxgtci g''equv'qh''ces wkukkqp''qh''Gs wkw{ "Uj ctgu'l ϕ ''qwt 'Eqo r c ϕ ' 'ku''nqy gt ''y c ϕ ''y g''Kuwwg''Rtkeg''cu'f gekf gf ''d{" vj g''Eqo r c ϕ { 'kp''eqpuwncvkqp''y kyj ''y g''Ngcf ''O cpci gt0'Hqt''hwt vj gt ''f gvckru'tgi ctf kpi ''cxgtci g''equv''qh''Ces wkukkqp''qh''Gs wkw{ "Uj ctgu''d{ ''qwt ''Rtqo qvgtu'k ϕ ''qwt 'Eqo r c ϕ { .''r rgcug'tghgt" ej cr vgt ''kxrg'' δ Ecr kvc h'Ut wewwt g δ '''dgi kppkpi ''qp''r ci g''78''qh''y ku'Ft chv'Rtqur geww0'''

680' Y g'j cxg'gpvgtgf 'lpvq'tgrcvgf 'r ctv{ 'ttcpucevlqpu'lp' ij g'r cw'cpf' b c{ 'eqpvlpwg'lq'fq'lq'lp' ij g'hwwtg0'

Qwt'Eqo r cp{"j cu'gpvgtgf 'kpvq'xctkqwu'tcpucekqpu'y kj "qwt'Rtqo qvgtu0'Y j krg'y g'dgrkgxg'vj cv'cm'uwej "tcpucekqpu'ctg" eqpf wevgf "qp"cto øti'ngpi vj "dcuku."vj gtg"ecp"dg"pq"cuuwtcpeg"vj cv'y g'eqwrf "pqv'j cxg"cej kexgf "o qtg"hcxqtcdrg"vgto u'j cf " uwej "tcpucekqpu'y gtg'pqv'gpvgtgf 'kpvq"y kvj 'tgrcvgf 'r ctvkgu0'Hwtvj gto qtg. 'kv'ku'ikngn("vj cv'y g'y km'gpvgt 'kpvq'tgrcvgf 'r ctv(" tcpucekqpu"kp'hwwtg0'Vj gtg"ecp"dg"pq"cuuwtcpeg"vj cv'uwej "tcpucekqpu."kpf kxlf wcm("qt"kp"ci i tgi cvg."y km'pqv'j cxg"cp" cf xgtug"glhgev'qp"qwt 'hkpcpekcn'eqpf kkqp"cpf "tguwxu"qh'qr gtcvkqp0'Hqt"f gvckul'qp"vj g"tcpucekqpu"gpvgtgf "d{"wu."r rgcug" tghgt 'vq'ej cr vgt "\ddot Tgrcvgf 'Rctv\f' Vtcpucekqpu\dot \ddot \ddot \pv \ddot \ddot \quad \pv \ddot \ddot \quad \quad

690' Qwt 'Rt qo qvgt u'cpf 'Rt qo qvgt 'I t qwr 'y knileqp vlp wg 'iq't gvc lp' b clqt ko{ 'eqp vt qnlqxgt 'ij g'Eqo rcp { 'chvgt 'ij g'Kanwg.'' y j kej 'y knilenqy 'ij go 'iq'lp hrwgp eg'ij g'qweqo g'qhlb cwgt u'lawdo kwgf 'iq'lj ctgj qnf gt u'hqt 'crrt qxc n''

Wr qp"eqo r rgwlqp"qh"y g"Kuwg."qwt"Rtqo qvgtu"cpf "Rtqo qvgt"I tqwr "y kni'qy p"8; $\mathfrak{Q}9'$ %'qh''y g"Rquv'Kuwg"Gs wkw{"Uj ctg" ecr kxcn'qh"y g"Eqo r cp{0'Cu"c"tguwwx"y g"Rtqo qvgtu"cpf "Rtqo qvgt"I tqwr "y kni'j cxg"y g"cdkrkw{"q"gzgtekug"uki pkhlecpv" kphrwgpeg'qxgt"cmio cvvgtu'tgs wktkpi "tj ctgj qrf gtuø'cr r tqxcn'kpenwf kpi "tj g'grgevkqp'qh'f ktgevqtu'cpf "cr r tqxcn'qh'uki pkhlecpv" eqtr qtcvg"vtcpucevkqpu0'Vj g"Rtqo qvgtu"cpf "Rtqo qvgt"I tqwr "y kni'cnuq"j cxg"cp"ghlgevkxg"xgvq"r qy gt "y ky "tgur gev'vq"cp{" uj ctgj qrf gt"cevkqp"qt"cr r tqxcn'tgs wktkpi "c"o clqtkw{"xqvg0'Uwej "eqpegpvtcvkqp"qh'qy pgtuj kr "o c{"cnuq"j cxg"ty g"ghlgev'qh' f grc{kpi .'t tgxgpvkpi "qt"f gvgttkpi "c"ej cpi g'kp'eqpvtqn0'Hqt "hwt y gt"f gvcknu'qh'Rtqo qvgtuø'tj ctgj qrf kpi .'t rgcug'tghgt'ej cr vgt" vkrgf " δ Ecr kc nUt wewt g'o'dgi kppkpi "qp"Rci g"P q078"qh'ty ku'F tchv'Rtqur gewu0'
%Cuwwo kpi "Hwnt'uwduet kr vkqp"



6:0 Y g'ttg'f grgpf gpv'dp'tc'þwo dgt'dh'Mg{'O cpci gt kcnlRgt uqppgdtpf'dwt'ligpkqt'b cpci go gpv.'tpf'\fogt g'hquu'dh'\dt''
qwt'kpcdkko{'\wq'cwtcev'\dt'tgwkp'lowej 'rgt uqpu'eqwrf'tcf xgt ugn|'tchlgev'qwt'dwukpguu 'tguwnu'\dh'\dr gt cykqpu'tpf''
hkpcpekcnleqpf kkqp0''

 $Qwt"r\ gthqto\ cpeg"f\ gr\ gpf\ u"rcti\ gnf\ "qp"\ ij\ g"ghqtwu."gzr\ gt\ kug"cpf\ "cdktkkgu"qh"qwt"Mg{"O\ cpci\ gtkcn"Rgtuqppgn"ugpkqt"o\ cpci\ go\ gpv."cpf\ "qwt"qr\ gtckqpcn"r\ gtuqppgn"y\ j\ q"r\ quuguu'uki\ pktkecpv'gzr\ gtkgpeg"kp"y\ g"kpf\ wuxt{"kp"y\ j\ kej\ "y\ g"qr\ gtckg0"Y\ g"dghgxg"y\ cv'y\ g"kpr\ wut"cpf\ "gzr\ gtkgpeg"qh"qwt"MO\ R"cpf\ "ugpkqt"o\ cpci\ go\ gpv."kp"r\ ctvkewct."cpf\ "qyj\ gt"mg{"r\ gtuqppgn"tetg"}\ xcnwcdrg"hqt"y\ g"f\ gxgqqr\ o\ gpv'qh"qwt\"dwukpguu."qr\ gtckqpu"cpf\ "y\ g"uxtcvgi\ ke"f\ ktgevkqpu\"cmpp"d{"qwt\"Eqo\ r\ cp{0Y}\ g"ecppqv'}\ cuuwtg"{qw'y\ cv'y\ g\ ugg"kpf\ kxk\ wcm\"qt"cp{"qy\ gt"o\ go\ dgt"qh"qwt"ugpkqt"o\ cpci\ go\ gpv'yco\ "y\ kni'pqv'ngcxg"wu"qt"lqkp"c"\ eqo\ r\ gvkqt"qt"y\ gv'y\ g"y\ kni'dg"cdrg"vq'tgckp"uwej\ "r\ gtuqppgn'qt"hkpf "cf\ gs\ wcy"tgr\ rcego\ gpwi'kp"c"vko\ gn{"o\ cppgt."qt"cv'cm0'}\ Y\ g"o\ c{"tgs\ wktgf"r\ gtuqppgn'y\ j\ gp"s\ wcnkhleff\ "r\ gtuqppgn'yto\ kpcvg"y\ gkt"\ go\ r\ m{0\ o\ gpv'y\ kyj\ "qwt"Eqo\ r\ cp{0\ O\ qtgqxgt."y\ g"o\ c{"dg"tgs\ wktgf\ "q'uwduvcpvkcmf\ "kpetgcug"y\ g"pwo\ dgt"qh"qwt"s\ wcnkhleff\ "r\ gtuqppgn'y\ kyj\ "cp{"hwwtg"i\ tqy\ y\ "r\ rcpu."cpf"y\ g"o\ c{"hceg"f\ khlewmf\ "kp"f\ qkp\ "ugr\ "y\ g"\ kg"mq\ "y\ g"\ kg"mq\ "y\ g"\ pyppug"eqo\ r\ gkkkgf"kp"tgckpkpi\ 0'$

 $\label{thm:conditional} Hwt j gt. "j g"EQXKF"/3; "r cpf go ke" j cu" f {pco kecm{"cngtgf" j g"crrtqcej "qp"y qtmrmeg" j {i kgpg"cpf "uchgv{"cpf" eqpvlpwkv{" qh"qr gtcvkqpu"y j krg"eqphkto kpi "y kj "o gcuwtgu"ko r mo gpvgf" d{"'y g"egpvtcn"cpf "ucvg" i qxgtpo gpw"kp"tgmcvkqp"vq" j g" gcnj " cpf" uchgv{"qh"qwt "go r m{ggu"o c{"tguwnv"kp"kpetgcugf" equwu0Kp" j g"gxgpv"c"o go dgt"qt"o go dgtu"qh"qwt "ugpkqt"o cpci go gpv" vgco "eqpvtcev"EQXKF/3; ."kv"o c{"rqvgpvkcm{"chhgev"qwt"qr gtcvkqpu0Hwt y gt."kp" j g"gxgpv"cp{"qh"qwt"go r m{gguw"eqpvtcev" EQXKF/3; ."y g"o c{"dg"tgs wktgf" "q"s wctcpvkpg"qwt"go r m{ggu"cpf" uj wv"f qy p"c"rctv"qh"qt" j g"gpvktg"qr gtcvkpi "hcektk{"cu" pgeguuct{0Tkumu"ctkukpi "qp"ceeqwpv"qh"EQXKF/3; "ecp"cmq" j tgcvgp" j g"uchg"qr gtcvkqp"qh"qwt"hcektk{."inquu"qh"hktg. "kplwtkgu" cpf" lo rcev'y g"y gm/dgkpi "qh"qwt"go r m{ggu0'}$

6; 0' Qwt''qrgtcvlpi 'gzrgpugu' lpenwfg''qxgtj gcfu''yj cv'o c{'tgo clp'Hzgf' lp''yj g'o gf lwo '\gto 0 Kp''ecug''yj gtg' lu'cp{''} f genlpg' lp''qwt''qrgtcvlpi 'rgthqto cpeg. 'y g'o c{'dg''wpcdng''q' tgf weg' lwej 'gzrgpuguU'

720' Fgrc{u'qt'f ghc wnu'hp'tc{o gp ui'ht qo 'qwt 'enkgp ui'eqwrf't guwni'hp vq'c' 'eqp ut c hp v'qp 'qwt 'ec uj 'hrqy uOVj g'ghhekgp e{'' cpf'l tqy yj 'qhl'qwt'dlwuhp guu'f gr gpf u'qp 'iko grf'tc{o gp ui't gegkxgf'ht qo 'qwt 'enkgp uO''

730' Vj g'ij qtwi g'qt'pqp/cxckwdkk{'qh'rqy gt'hcekkkgu'b c{'cfxgtugn('chhgev'qwt'dwukpguu'rtqeguugu'cpf'j cxg'cp'' cfxgtug'ko rcev'qp'qwt'tguwnu'qh'qrgtcykqpu'cpf'hpcpekcheqpfkkqp0'

 $Qwt"dwulpguu"rtqeguugu"tgs wktg"uwduvcpvkcn'co qwpv'qh'r qy gt"hcekrkskgu0'Y g"f q"pqv'j cxg"cttcpi go gpwi"hqt"cngtpcvkxg"I" lpf gr gpf gpv'uqwtegu"qh'r qy gt"uwr r n{ "cu"qh"pqy 0'Y g"ctg"o clpn{ "f gr gpf gpv'qp"nqecn'gngevtlekv{ "ugtxkeg"r tqxkf gt"hqt" o ggvkpi "qwt"gngevtlekv{ "tgs wktgo gpwu."yj gtg"o c{ "dg'hcevqtu"dg{ qpf "qwt"eqpvtqn'chhgevkpi "yj g'uwr r n{ "qh'r qy gt0'Cp{ "r qy gt" hckwtg"o c{ "ngcf "vq"lpetgcugf "equwu."yj gtgd{ "chhgevkpi "yj g'r tqhkvcdkrkv{ 0'}}$

740' Vj gtg'ctg'pq'cngtpcvg'cttcpi go gpwlhqt'o ggwlpi 'qwt'tgs whtgo gpwlhqt'ij g'Qdlgewlqhtij g'Kunwg0Cp{'lij qtwlcndlp'' tchulpi 'I'o ggwlpi 'ij g'lico g'eqwrf 'cfxgtugn('chlgev'qwt'l tqy yj 'rrcpu 'qrgtcwlqpu'cpf 'hlpcpelicht gthqto cpeg0'

Cu"qp"f cvg."y g"j cxg"pqv"o cf g"cp{"cngtpcvg"cttcpi go gpwi"hqt"o ggvkpi "qwt"ecr kcri'tgs wktgo gpwi"hqt"y g"Qdlgewi'qhl'y g"Kuwg0'Y g"o ggv"qwt"y qtmkpi "ecr kcri'tgs wktgo gpwi"y tqwi j "qwt"qy pgf "hwpf u"cpf "kpvgtpcri'ceetwcn:0'Cp{"uj qtvhcmi'kp"qwt" pgv'qy pgf "hwpf u."kpwgtpcri'ceetwcn:0'Cp{"uj qtvhcmi'kp"qwt" pgv'qy pgf "hwwtg"y qwf "tguwn'kp"wu"dgkpi "wpcdrg"vq"o ggv'qwt" y qtmkpi "ecr kcri'tgs wktgo gpw."y j kej "kp"wtp"y km'pgi cvkxgn("chhgev'qwt"hkpcpekcni'eqpf kkqp"cpf "tguwnu"qh'qr gtcvkqpu0' Hwty gt"y g"j cxg"pqv"{gv'kf gpwkhkgf "cp{"cngtpcvg"uqwteg"qhl'hwpf kpi "cpf"j gpeg"cp{"hckmtg"qt"f grc{"qp"qwt"r ctv'vq"tckug" o qpg{"htqo "vj ki'Kuwg"qt"cp{"uj qtvhcmikp"y g"Kuwg"Rtqeggf u"o c{"f grc{"y g' ko r ngo gpvcvkqp"htj g'Kuwg"qp"r ci g"8: "qh'vj ku'F tchv' Rtqur gewu0' "r repu0'Hqt"hwty gt "f gvckn."r ngcug"tghgt "ej cr vgt"kkngf "ö*Qdlgewi'qht'y g'Kuwg*ö"qp"r ci g"8: "qh'vj ku'F tchv' Rtqur gewu0'



750' Qwt'bdkhk{'hq'rc{'fkxlfgpfu'lp'hjg'hwwtg'h knlfgrgpf'hrqp'qwt'hwwtg'gctphpiu'hhpcpekchleqpfkkqp.'ecuj 'hqyu''
y qtmkpi 'ecr kwcntgs whtgo gpvu'ecr kwcntgrgpfkwtg'bpf'tgutlenkxg'eqxgpcpvu'lp'qwt'hhpcpekpi 'bttcpi go gpvu''

Y g"o c {"tgvckp"cm'qwt"hwwtg"gctpkpi u "kh'cp {."Int"wug"kp"yj g"qr gtcvkqpu"cpf "gzr cpukqp"qh'qwt"dwukpguu0Cu"c"tguww."y g" o c {"pqv'f genttg"f kxkf gpf u"kp"yj g"Intguggcdrg"hwwtg0Cp {"Inwwtg"f gygto kpcvkqp"cu"vq"yj g"f genttcvkqp"cpf "r c {o gpv'qh'f kxkf gpf u'y knildg"cv'yj g"f kxetgvkqp"qh'qwt"Dqctf "qh'F ktgevqtu"cpf "y knilf gr gpf "qp"hcevqtu"yj cv'qwt"Dqctf "qh'F ktgevqtu"f ggo "tgrgxcpv."kpenwf kpi "co qpi "qyj gtu."qwt"tguwwu"qh'qr gtcvkqpu. "Hpcpekcn"eqpf kkqp."ecuj "tgs wktgo gpvu."dwukpguu"r tqur gevu" cpf "cp{"qyj gt "hkpcpekpi "cttcpi go gpvu0Cf f kkqpcm(."wpf gt"uqo g"qh'qwt"nqcp"ci tggo gpvu."y g"o c {"pqv'dg"r gto kwgf "q" f genttg"cp{"f kxkf gpf u."kh'yj gtg"ku"c"f ghcwn/wpf gt"uwej "nqcp"ci tggo gpvu"qt"wprguu"qwt"Eqo r cp{"j cu"r ckf"cm'yj g"f wgu"q" yj g"ngpf gt"wr "vq"yj g"f cvg"qp"yj jkej "yj g"f kxkf gpf "ku"f genttgf"qt"r ckf"qt"j cu"o cf g"ucvkuhcevqt{"r tqxkukqpu"yj gtgqhf/y Ceeqtf kpi n{."tgcnkj cvkqp"qh"c"i ckp"qp"uj ctgj qnf gtøu"kpxguvo gpvu"o c{"rcti gn{"f gr gpf "wr qp"yj g"cr r tgekcvkqp"qh"yj g"r tkeg" qh"qwt"Gs wkx{"Uj ctgu0'Vj gtg"ecp"dg"pq"cuuwtcpeg"yj cv"qwt"Gs wkx{"Uj ctgu"y km'cr r tgekcvg"kp"xcnvg0'Hqt"f gvcknu"qh"qwt"f kxkf gpf "knyf gpf'Rqnke{ δ "qp"r ci g"358"qh'yj ku"F tchv'Rtqur gewu0'

760' Cp{'lwwwtg'ces wkukshqpu.'lqhpv'xgpwstgu.'rct ypgt uj kru.'iat cvgi ke'c nkcpegu.'skg/wru'qt'hpxguao gp wi'eqwsf'lickslyq'' cej kgxg'gz rgevgf'lsfpgt i kgu'cpf'b c{'f kut wrv'qwt'dwukpguu'cpf'j cto' 'yj g't guwnu'qhlqrgt cskqpu'cpf'qwt'hkpcpekcn'' eqpf kskqp0''

Qwt'uweeguu'y kmi'f gr gpf ."kp'r ctv."qp"qwt"cdktk{"vq"gzr cpf "qwt"dwukpguu"kp"tgur qpug"vq"ej cpi kpi "ygej pqmi kgu."ewuvqo gt" f go cpf u'cpf "eqo r gwkkzg"r tguuwtgu0'Y g"j cxg. "kp"yi g"r cuv."gzr mttgf "cpf "eqovlpwg"vq"gzr mttg"qr r qtwpkkgu"qp"qwt"qy p." yi tqwi j "eqmcdqtcvkqpu."vkg/wr u "untcvgi ke"cmkcpegu."r ctvpgtuj kr u'qt"lqkv/xgpwtg"cetquu'yj g"eqwpvt{"cpf "tgi kqpu'qh'hqewu0' kp"uqo g"ektewo uvcpegu."y g"o c{"cmq"f gekf g"vq"ces wktg."qt"kpxguv"kp."eqo r mo gpvct{"wgej pqmi kgu"kpuvgcf "qh"kpvgtpcn" f gxgmr o gpv0'Y j krg"y g"ctg"ewttgpvn{"gxcmvcvkpi "qr r qtwpkkgu"cpf "pgi qvkcvkpi "y kj "ugxgtcni'r qvgpvkcni'r ctvpgtu."y g"j cxg" pqv'gpvgtgf "kpvq"cp{"f ghkpkkxg"ci tggo gpvu0'Vj g'tkumi'y g'hceg"kp"eqppgevkqp"y kj "ces wkukkqpu"o c{"kpemf g"kpvgi tcvkqp"qhi" r tqf wev'cpf "ugtxkeg"qhhgtkpi u."eq/qtf kpcvkqp"qhiT(F "cpf"o ctmgvkpi "Impevkqpu"cpf"y g"f kxgtukqp"qh"o cpci go gpvxu"vko g" cpf "hqewu"tqo "qr gtcvkpi "qwt"dwukpguu"vq"cf f tguukpi "ej cmgpi gu"r gtvckpkpi "vq"ces wkukkqpu"cpf "kpvgi tcvkqp0Qwt"hckmvg"vq" cf f tguu'yj gug"tkumu"qt"qyj gt"r tqdrgo u"gpeqwpvgtgf "kp"eqppgevkqp"y kj "qwt"ces wkukkqpu"cpf "kpxguvo gpvu"eqwrf "tguwnv"kp" qwt "hckmvg"vq"tgcnk; g"y g"cpvkekr cvgf "dgpghkxu"qh"y gug"ces wkukkqpu"qt"kpxguvo gpvu."ecwug"wu"vq"kpewt"wpcpvkekr cvgf "kcdkkkkgu."cpf "j cto "qwt"dwukpguu"i gpgtcm{0"

770' Qwt 'hwwt g'hwpf u't gs wlt go gp vu 'hp 'ij g'hqt o 'qhlht guj 'kuwg'qhlèc r kwnlqt 'ligewt kligul'c pf 'I'qt 'liqc pu'iwngp 'dl 'lwu 'o c {'' dg'rt glwf kelicniq 'ij g'hpvgt gw'qhlij g'lij ct gj quf gt u'f grgpf kpi 'lwr qp 'ij g'igt o u'qp 'y j kej 'lj g{ 'ct g'gxgp wwc n{ 't c kigf 0'

Y g"o c{"tgs wktg"cf f kklqpcn'ecr kxn'lhtqo "vko g"vq"vko g"f gr gpf kpi "qp"qwt"dwukpguu"pggf u0'Cp{"htguj "kunwg"qh'uj ctgu"qt" eqpxgtvklng'ugewtkkgu'y qwrf 'f knwg"vj g'hij ctgj qrf kpi "qh'vj g'gzkuvkpi 'uj ctgj qrf gtu'cpf 'uwej 'kunwcpeg'o c{"dg'f qpg'qp'vgto u" cpf "eqpf kklqpu."y j kej "o c{"pqv'dg"hcxqtcdng"vq"vj g"vj gp"gzkuvkpi "uj ctgj qrf gtu0'Ki'uwej "hwpf u"ctg"tckugf "kp"vj g"hqto "qh' nqcpu"qt"f gdv."vj gp"kv"o c{"uwduvcpvkcm("kpetgcug"qwt"kpvgtguv'dwtf gp"cpf "f getgcug"qwt"ecuj "hrqy u."vj wu"r tglwf kekcm(" chłgevkpi "qwt"r tqlkxcdktkv{"cpf "cdktkv{"vq'r c{"f kxkf gpf u'vq"qwt"uj ctgj qrf gtu0'

780' Qwt'hgpfgtu'j cxg'ko rqugf'egt w kp't gust kevkxg'eqpf kkqpu'qp'wu'wpfgt'qwt'Hpcpekpi 'cttcpi go gpwu'Wpfgt'qwt''
hkpcpekpi 'cttcpi go gpwu'y g'ctg'tgs wktgf 'kq'qdwckp'\j g'rtkqt.'y tkwgp'hgpfgt'eqpugpv'hqt.'co qpi 'qyj gt'o cwgtu''
ej cpi gu'kp'qwt'ecr kwchlut wewntg.'cpf'hqto wwwkqp'qhtc'hej go g'qhtco cni co cwlqp'qt'tgeqpust wewlqp'cpf'gpwgtkpi''
kpwq'cp{'qyj gt'llqttqy kpi 'cttcpi go gpwUHwtyj gt.'y g'ctg'tgs wktgf'kq'o chpwkp'egtwkp'HpcpekchtcwlquU'

790' Uqo g'hli'y g'MO Ru'hu'c unqeke vgf 'y ky 'qwt 'eqo r cp{ 'hqt 'iguu'ij cp 'qpg'{gct0''

Qwt"Mg{"O cpci go gpv'Rgtuqppgn"Eqo r cp{"Ugetgvct{"ku"cuuqekcvgf"y kyj"y g"Eqo r cp{"hqt"c"r gtkqf "qh'hguu'y cp"qpg"{gct" y gtghqtg"y g{"o c{"pqv"j cxg"dggp"ceewuvqo gf "vq"y g"eqo r cp{"chhcktu"kmif cvg0Hqt"f gvcknu"qhiMg{"O cpci go gpv'Rgtuqppgn" cpf "y gkt"cr r qkpvo gpv."r ngcug"tghgt "vq"ej cr vgt"o*Qwt 'O cpci go gpv*ö"dgi kppkpi "qp"r ci g"339"qh"y ku"F tchv'Rtqur gewu0"



7:0' Vj gtg'ku'pq'i wctcpvgg'ij cv'qwt'Gs wkv{'Uj ctgu'y knildg'hkwgf 'qp'ij g'UvqemGzej cpi gu'kp'c'iko gn('b cppgt'qt'cv'cn0''

Kô'ceeqtf cpeg'y kij "Kôf kcp'kcy "cpf 'r tcevkeg."r gto kuukqp"\q'ikuv'y g'Gs wkx{ "Uj ctgu'y kni'pqv'dg'i tcpvgf "wpvkn'chngt"y g'Gs wkx{ "Uj ctgu'j cxg''dggp"kuuwgf "cpf "cmqwgf 0'Cr r tqxcn'y kni'tgs wktg''cmi'qi gt'tgngxcpv'f qewo gpvu''cwj qtk| kpi "'y g''kuuwkpi "qhi'qwt" Gs wkx{ "Uj ctgu''q''dg''uwdo kwgf 0'Vj gtg''eqwnf "dg''c'hchnwtg''qt''f grc{ "kp''nkuvkpi "qwt''Gs wkx{ "Uj ctgu''qp''y g''Uqeni'Gzej cpi gu0' Cp{ 'hchnwtg''qt''f grc{ 'lp''qdvckpkpi "'y g''cr r tqxcn'y qwrf 'tguntkev'{qwt''cdkrkx{ "'q''f kur qug''qh''{qwt''Gs wkx{ "Uj ctgu0'

7; 0 Gzegudxg'tgrkcpeg'\dp'\dwt'\kp\lato c\kap'\gej pani \{'\ullet'\undersep u'\chipf'\\j gkt'\chiw\tg'\eqwnf'\f cto '\dwt'\tgrc\kap\uj kr'\y kj''
ewnoqo gtu.'\gzrqug'\wu'\ap'\rey uwknu'\qt'\cf o kp\kotc\kxg'\ucpe\kap\u'\qt''\q\j gty kug'\cf xgtugn\'\chipev'\qwt'\rt qxkukap'\qh''
ugtxkeg'\ap'\ewnoqo gtu'\chipf'\qwt'\kp\vgtpcn\drgtc\kap\thi'\qt'\\q\text{y}\text{of}\to \text{V}\text{of}\te

 $Cu'r\ ctv'qh'qwt''dwukpguu''utcvgi\ \{.'y\ g''wug''j\ ki\ j\ ''s\ wcrks{''qh'kphqto\ cvkqp''yej\ pqnqi\ \{''u{\{uvgo\ ''q'f\ grkxgt''qwt''ugtxkegu''kp''j\ g''dguv''\ r\ quukdng''y\ c{0'Y\ g''j\ cxg''cp''gzgo\ r\ nct{'''tcev'tgeqtf''hqt''eqo\ r\ ngvkqp''qh''y\ g''r\ tqlgevu''y\ kij\ kp''y\ g''uvkr\ wncvgf''vko\ g''r\ gtkqf''dw''\ y\ gtg''o\ c{''dg''y\ g'u{uvgo\ ''kpvgttwr\ vkqpu.''gttqtu.''qt'f\ qy\ pvko\ g'y\ j\ kej\ ''eqwf''tguww'htqo''c'xctkgv{''qh'ecwugu'kpenwf\ kpi ''ej\ cpi\ gu''\ kp''yej\ pqnqi\ {''hcknwtg.''ej\ cpi\ gu''kp''u{uvgo\ .''cpf''r\ qy\ gt''hcknwtg''gve0'yj\ gug''o\ c{''chhgev'qwt''dwukpguu''cf\ xgtugn{0''}$

820' Vj g'fgrnq{o gpv'qhlhwpfu'tchugf 'lj tqwi j 'lj hu'Kunwg'lij cnihqv'dg'liwdlgev'lq'cp{'O qphqthpi 'Ci gpe{'cpf'lij cnildg'' rwtgn{'fgrgpfgpv'qp'lj g'fhuetgykqp'qh'lj g'b cpci go gpv'qhQwt'Eqo rcp{0'}

Ulpeg."y g"Kuwg"ukţ g"ku"nguu"y cp" 32.222"Ncnj u."y gtg"ku"pq"o cpf cvqt {"tgs wktgo gpv'qh'crrqkpvkpi "cp" Kpf gr gpf gpv' O qpkqtkpi "Ci gpe {"hqt"qxgtuggkpi "y g"f gr mq {o gpv'qh'wkrkţ cvkqp"qh'hwpf u'tckugf "y tqwi j "y ku"KuwgOVj g"f gr mq {o gpv'qh' y gug"hwpf u'tckugf "htqo "y ku"Kuwg."ku"j gpeg."cv"y g"f kuetgrkqp"qh"y g"o cpci go gpv'cpf "y g"Dqctf "qh'F ktgevqtu"qh"Qwt" Eqo r cp {"cpf" 'Qwt "Eqo r cp {øu"o cpci go gpv'y knij cxg"hngzkdkrk{ "hp"crrn{kpi "y g"r tqeggf u'qh'y g"Kuwg"cpf" y knipqv'dg" uwdlgev"q"o qpkqtkpi "d{"cp{"hp gr gpf gpv'ci gpe {O'Vj g"hwpf "tgs wktgo gpv'cpf "f gr mq {o gpv'o gpvkqpgf "kp"y g"Qdlgewi"qh" y g"Kuwg"ku"dcugf "qp"kpvgtpcn'o cpci go gpv'gurko cvgu"cpf" j cxg"pqv'dggp"crrtckugf "d{"cp{"dcpm'qt"hkpcpekcn'lkpurkwwkqpO' Cp{"kpcdkrk{ "qp"qwt"r ctv'vq"ghhgevkxgn{ "wkrkţ g"y g"Kuwg"r tqeggf u"eqwf" cf xgtugn{ "chhgev'qwt"hhpcpekcn'OJ qy gxgt."qwt" Cwf kv'Eqo o kwgg'y knio qpkqt"y g"wkrk cvkqp"qh'y g"r tqeggf u"qh'y ku"Kuwg"Cr r cpkgu'Cev."4235."c"eqo r cp{"uj cm'pqv'xct {"y g" r tqeggf u"qh'y ku"Kuwg"y ky qww'y g"Eqo r cp{"dgkpi "cwyj qtk gf "vq"f q"uq"d{"qwt"uj ctgj qrf gtu"d{"y c{"qh'ur gekcn'tguqnwkqp" cpf" qy gt"eqo r nkcpegu"cu"crr nkecdng"kp"y ku"tgi ctf O'Qwt"Rtqo qvgtu"cpf "eqpvtqmkpi "uj ctgj qrf gtu"uj cm'r tqxkf g"gzkv" qr qtwpk{"vq'uwej "uj ctgj qrf gtu"y j q"f q"pqv'ci tgg"vq"y g"r tqr qucn'vq"xct {"y g"qdlgevu."cv'uwej "r tkeg."cpf "kp"uwej "o cppgt." cu"o c {"dg"r tguetkldg" "d{"UCDK'kp"y ku'tgi ctf O'

830' 'P gi c vkxg't wdrheh{ 'eqwrf 'ef xgt ugr{ 'e Hrgev'qwt 't gxgp wg'b qf grlepf 't t qHwe dhhw{0'

 $Y g"y qtm"lp" i g"o ctngv" y j gtg"vtww"qh" i g"ewwqo gtu"qp"wu"cpf "wrqp" i g"ugtxlegu"r tqxkf gf "d{ "wu"o cwgtu"c"nqv"Cp{ "pgi cvlxg"r wdrlekv{ "tgi ctf kpi "qwt"eqo r cp{ "qt" i g"ugtxlegu"tgpf gtgf "d{ "i g"eqo r cp{ "f wg"q"cp{ "qi gt"wphqtguggp"gxgpw" o c{ "chhgev"qwt"tgr wcvlqp"cpf "ko ci g"y j lej "lgcf u"vq" i g"cf xgtug"ghlgev"qp"qwt"dwulpguu"cpf "i qqf y kni'cu"y gn0"" }$

840 Kpf wunt { 'kp kyto cykyp 'kp enwf gf 'kp 'ij ku'Ftchv'Rt qur gewwu'j cu'dlggp 'f gt kxgf 'kt qo 'kpf wunt { 'tgr qt wi'eqo o kunkyp gf 'd{'' wu' kyf 'twej 'r wtr qug0 Vj gtg'ecp 'dg'p q'cunwt cp eg 'ij cv'inwej 'ij ktf/rct v{ 'inc whake cn' kpc pekchlepf 'qvj gt 'kpf wunt { '' kp kyto cykyp 'gt'eqo r ng vg'yt 'lc ewt cyg0'

Y g"j cxg"tgrkgf "qp"y g"tgr qtw"qh"egtvckp"kpf gr gpf gpv'y ktf "r ctv{ "hqt"r wtr qugu"qh"kpenwkqp"qh"uwej "kphqto cvkqp"kp"y ku" F tchv'Rtqur geww0Vj gug"tgr qtw"ctg'uwdlgev'vq"xctkqwu'rko kcvkqpu"cpf "dcugf "wr qp"egtvckp"curwo r vkqpu"y cv'ctg'uwdlgevkxg" kp"pcwtg0Y g"j cxg"pqv"kpf gr gpf gpvn{"xgtklkgf "f cvc"htqo "uwej "kpf wnt { "tgr qtvu"cpf "qvj gt"uqwtegu0Cnj qwi j "y g"dgrkgxg" y cv' vj g"f cvc" o c{ "dg"eqpukf gtgf "vq"dg"tgrkcdrg." vj gkt"ceewtce{ ."eqo r rgvgpguu"cpf "wpf gtn{ kpi "curwo r vkqpu"ctg" pqv' i wctcpvggf "cpf "vj gkt"f gr gpf "cdktk{"ecppqv'dg"curwtgf 0Y j krg"y g"j cxg"vcmgp"tgcuqpcdrg"ectg"kp"yj g"tgr tqf wevkqp"qh"y g" kphqto cvkqp." vj g"kphqto cvkqp"j cu'pqv'dggp"r tgr ctgf "qt"kpf gr gpf gpvn{"xgtkhkgf "d{ "wu."qt"cp{ "qh"qwt"tgur gevkxg"chhkhcvgu"qt" cf xkuqtu"cpf ."vj gtghqtg." y g"o cmg"pq"tgr tgugpcvkqp"qt"y cttcpv{ ."gzr tguu"qt"ko r rkgf ."cu"vq"vj g"ceewtce{ "qt"eqo r rgvgpguu" qh'uwej "hcevu"cpf "uvcknkeu0F wg"q"r quukdn{"hrcy gf "qt"kpghtgevkxg"eqmgevkqp"o gvj qf u"qt"f kuetgr cpekgu"dgw ggp"r wdrkuj gf "kphqto cvkqp"cpf "o ctmgv'r tcevkeg"cpf "qvj gt"r tqdrgo u."vj g"uvcknkeu"j gtgkp"o c{ "dg"kpceewtcvg"qt"o c{ "pqv'dg"eqo r ctcdrg" qu"ucknkeu"rtqf wegf "hqt"qvj gt"geqpqo kgu"cpf "uj qwf "pqv'dg"wpf wn{ "tgrkgf" wr qp0Hwty gt."vj gtg"ku"pq"curwtcpeg"vj cv'yj g{" ctg"ucvgf"qt"eqo r krgf "qp"yj g"uco g"dcuku"qt"y kyj "y g"uco g"f gi tgg"qh'ceewtce{ "cu"o c{ "dg"yj g"ecug"gngy j gtg0"Ucvgo gpw" htqo "r ctvkgu"yj cv'kpxqnxg"guvko cvgu"ctg"uwdlgev'vq"ej cpi g."cpf "cewcn'co qwpvu"o c{ "f khtgt"o cvgtkcm{ "htqo "vj qug"kpenwf gf" kp"yj ku"F tchv'Rtqur gewu0'

850' Vj g''tgs whtgo gp vu''qh''dghpi ''c''r wdrhe''rhwgf''eqo rcp{''o c{''ustchp''qwt''tguqwtegu''cpf''ho rqug''cffhshqpcn'' tgs whtgo gp vu''

Y kij "iy g'kpetgcugf "uetwkp{ "qh'iy g''chhcktu'qh'c''r wdrke "ikurgf "eqo r cp{ "d{ "uj ctgj qrf gtu." tgi wrcytu'cpf "iy g''r wdrke "cv'hcti g." y g''y km'kpewt "uki pkhecpv'rgi cn "ceeqwpvkpi ." eqtr qtcvg"i qxgtpcpeg"cpf "qvj gt "gzr gpugu"iy cv'y g'f kf "pqv'kpewt "kp"iy g''r cur0' Y g'y km'cnnq"dg'uwdlgev'vq"iy g''r tqxkukqpu"qh'iy g''nkurkpi "ci tggo gpwu'uki pgf "y kij "iy g''Uqem'Gzej cpi gu'y j kej "tgs wktg'wu'vq"



htg"wpcwf kgf "htpcpekcnit guwnu"qp"c"j cnti'{ gctn("dcuku0'Kp"qtf gt "vq"o ggv'qwt "htpcpekcnieqpvtqni'cpf "f kuenquwtg"qdnki cvkqpu." uki pkhecpv't guqwtegu" dcpf "o cpci go gpv'uwr gtxkukqp" y kni'dg" tgs wktgf 0'Cu"c" tguwn." o cpci go gpv'u" cwgpvkqp" o c{ "dg" f kxgtvgf "htqo "qvj gt "dwukpguu'eqpegtpu." y j kej "eqwrf "j cxg"cp"cf xgtug"ghtgev'qp"qwt "dwukpguu'cpf "qr gtcvkqpu0'Vj gtg"ecp"dg" pq"cuuwtcpeg" y cv'y g"y kni'dg"cdrg" vq"ucvkuh{ "qwt"tgr qt vkpi "qdnki cvkqpu"cpf "l'qt"tgcf kn("f gvgto kpg"cpf "tgr qt v'cp{ "ej cpi gu" vq"qwt "tguwnu"qhi'qr gtcvkqpu'kp"c "ko gn("o cppgt "cu'qy gt "kuvgf" eqo r cpkgu0'Kp"cf f kkqp." y g"y kni'pggf "vq"kpetgcug" y g"utgpi y "qh'qwt" o cpci go gpv'vgco "cpf "j ktg"cf f kkqpcni'pi cni'cpf "ceeqwpvkpi "uvchhi'y kj "crr tqr tkcvg"r wdne "eqo r cp{ "gzr gtkgpeg"cpf" ceeqwpvkpi "npqy ngf i g"cpf "y g"ecppqv'cuuwtg" y cv'y g"y kni'dg"cdng" vq"f q"uq"kp"c" ko gn("o cppgt0'

Kuwg'Ur geldle'Tkumk'

860' Vj gtg'ctg'tgutkevkqpu'qp'f ch('T'y ggm('T'o qpvj n('o qxgo gpvu'kp'\j g'rtkeg'qh'\j g'Gs wk\('Uj ctgu'\y j kej 'o c\{'' cfxgtugn('chhgev'c'hj ctgj qnfgtuø'chkk\('\q'\lgm'\qt'\j g'rtkeg'cv'y j kej 'kv'ecp'\lgm'Gs wk\('Uj ctgu'cv'c'rctvkewnct'' rqkpv'kp'\log0'

Qpeg"rkngf."y g"y qwf "dg"uwdlgev'vq"ektewk/dtgcngtu"ko r qugf "d{"cm'uvqem'gzej cpi gu"kp"Kpf kc."y j kej "f qgu"pqv'cmqy " vtcpucevkqpu"dg{qpf "ur gekhgf "kpetgcugu"qt"f getgcugu"kp"y g"r tkeg"qh"y g"Gs wkv{"Uj ctgu0V'J ku"ektewk/dtgcngt"qr gtcvgu" kpf gr gpf gpwl "qh"y g"kpf gz/dcugf "o ctngv/y kf g'ektewk/dtgcngtu"i gpgtcm{ "ko r qugf "d{ "UGDKqp"Kpf kcp"uvqem'gzej cpi gu0V Vj g"r gtegpvci g"nlo k/qp"ektewk/dtgcngtu"ku"ugv'd{ "y g"uvqem'gzej cpi gu"dcugf "qp"yj g"j knvqtkecn'xqncvktkv{"kp"y g"r tkeg"cpf" vtcf kpi "xqnvo g"qh"y g"Gs wkv{"Uj ctgu0Vj g"uvqem'gzej cpi gu"f q'pqv'kphqto "wu"qh"y g"r gtegpvci g"nlo kv"qh"y g"ektewk/dtgcngt" kp"ghtgev'ltqo "vlo g"vq"vko g"cpf "o c{"ej cpi g"kv"y kyj qww"qwt"mpqy ngf i g0'Vj ku"ektewk/dtgcngt"nlo kuu"y g"wr y ctf "cpf" f qy py ctf "o qxgo gpvu"kp"y g"r tkeg"qh"y g"Gs wkv{"Uj ctgu0VCu"c"tguwnv"qh"y ku"ektewk/dtgcngt."pq"cuuwtcpeg"o c{"dg"i kxgp" tgi ctf kpi "{qwt"cdktkv{"vq"ugm"{qwt "Gs wkv{"Uj ctgu"qt"y g"r tkeg"cv"y j kej "{qw"o c{"dg"cdng"vq"ugm"{qwt "Gs wkv{"Uj ctgu"cv'cp{" r ctvkewct"vko g0'

870' Chogt 'lij ku'Kuawg. 'lij g't theg'lqh'lij g'Gs who{ 'Uj ctgu'b c{'dg'j ki j n{ 'xqnc shog. 'lqt 'cp 'ceskxg'stcf kp i 'b ctmgv'hqt 'lij g'Gs who{ '' Uj ctgu'b c{'pqv'f gxgnqr 0'}

Vjg"rtkeg"qh"vjg"Gswkx{"Ujctgu"qp"vjg"UqentGzejcpigu"oc{"hnwewcvg"cu"c"tguwnv"qh"vjg"hcevqtu."kpenwfkpi<"

- c0 Xqrcvkrk/{ 'kp''yj g'Kpf kcp''cpf 'i mqdcn'ecr kcn'o ctngv="
- d0 Eqo r cp{øu'tguwnu'qh'qr gtc\kqpu'cpf 'h\pcpekcri'r gthqto cpeg="
- e0 Rgthqto cpeg"qh"Eqo r cp{øu"eqo r gykqtu."
- $f0 \quad Cf \ xgtug"o \ gf \ kc"tgr \ qt \ u"qp" Eqo \ r \ cp \{ \ "qt"r \ gt \ vckpkpi \ "\ 'q" \ 'j \ g"ci \ tkewnwtg" \ kpf \ wwt \ \{ = \ "qt \ '' \ gt \ vckpkpi \ '' \ q" \ g \ ''ci \ tkewnwtg" \ kpf \ wwt \ \{ = \ "qt \ '' \ gt \ vckpkpi \ '' \ q" \ g" \ ci \ tkewnwtg" \ kpf \ wwt \ \{ = \ "qt \ '' \ gt \ vckpkpi \ '' \ q" \ g" \ ci \ tkewnwtg" \ kpf \ wwt \ \{ = \ "qt \ '' \ g" \ ci \ tkewnwtg" \ kpf \ wwt \ \{ = \ "qt \ '' \ g" \ ci \ tkewnwtg" \ kpf \ wwt \ \{ = \ "qt \ '' \ g" \ ci \ tkewnwtg" \ kpf \ wwt \ \{ = \ "qt \ '' \ g" \ ci \ tkewnwtg" \ kpf \ wwt \ \{ = \ "qt \ '' \ g" \ ci \ tkewnwtg" \ kpf \ wwt \ \{ = \ "qt \ '' \ g" \ ci \ tkewnwtg" \ kpf \ wwt \ \{ = \ "qt \ '' \ g" \ ci \ tkewnwtg" \ kpf \ wwt \ \{ = \ "qt \ '' \ g" \ ci \ tkewnwtg" \ kpf \ wwt \ \{ = \ "qt \ '' \ g" \ ci \ tkewnwtg" \ kpf \ wwt \ \{ = \ "qt \ '' \ g" \ ci \ tkewnwtg" \ kpf \ wwt \ \{ = \ "qt \ '' \ g" \ ci \ tkewnwtg" \ kpf \ wwt \ \{ = \ "qt \ '' \ g" \ ci \ tkewnwtg" \ kpf \ wwt \ kpf \$
- g0 Ejcpi gu'lkp"qwt"guvko cvgu"qh'r gthqto cpeg"qt"tgeqo o gpfcvkqpu"d{"hkpcpekcn'cpcn{uvu="
- h0 Uki pkhkecpv"fgxgrqrogpvu"kp"Kpfkcøu"geqpqoke"cpf"hkuecni'rqnkekgu="cpf"
- i 0 Uki pkhecpvtf gxgnqr o gpvutkptkptkogutgpxktqpo gpvcnttgi wcvkqpu0t

 $\label{thm:control_c$

880' [qw'y knipqv'dg'cdng'sq'ligniko o gf kcvgn('qp'UvqentGzej cpi g'cp{'qht'sj g'Gs wks{'Uj ctgu'{qw't wtej cug'hp'sj g'Kunwg'' wpvkntsj g'Kunwg'tgegkxgu'crrtqrtkcvg'stcf kpi 'rgto kunkqpu0'

Vj g"Gs wkx{"Uj ctgu"y km'dg"nknyf"qp" yj g"Uqem'Gzej cpi g0'Rwtuwcpv' vq" kfpf kcp"tgi wcxkqpu."egtvckp"cexkqpu"o wm'dg" eqo r ngwf "dghqtg" yj g"Gs wkx{"Uj ctgu'ecp "dg"nknyf"cpf "vtcf kpi "o c{"eqo o gpeg0'Y g"ecppqv'cuuwtg"{qw'yj cv'yj g"Gs wkx{"Uj ctgu'y km'dg'etgf kyf "vq'kpxgunqtøu'f go cv'ceeqwpvu."qt" yi cv'vtcf kpi "kp" yj g"Gs wkx{"Uj ctgu'y km'eqo o gpeg."y kyj kp" yj g"kv g" r gtkqf u"ur gekhlyf "kp" yj g"F tchv'Rtqur gewu0'Cp {"hcknytg"qt"f gnc{"kp"qdvckpkpi "yj g"cr r tqxcn'y qwf "tguntkev"{qwt "cdkrkx{"vq" f kur qug"qh'yj g'Gs wkx{"Uj ctgu0'kp'ceeqtf cpeg"y kyj "ugevkqp'62"qh'yj g'Eqo r cpkgu'Cev."4235. 'kp"yj g'gxgpv'yj cv'yj g'r gto knukqp" qh'hknykpi "yj g"Gs wkx{"Uj ctgu'ku'f gpkgf "d{"yj g'uvqem'gzej cpi gu."y g"ctg'tgs wktgf "vq'tghwpf "cm'o qpkgu'eqmgevgf "vq'kpxguvqtu0'



890' Vj g'Kaawg't theg'qhlqwt'Gs who{'Uj ctgu'b c{'pqv'dg'hpf hec wxg'qhl\si g'b ct ngv't theg'qhlqwt'Gs who{'isj ctgu'c hogt 'sj g'' kaawg0'

Vj g'Kuwg'r tkeg'qh'qwt'gs wkx{ 'Uj ctgu'j cu'dggp'f gygto kpgf 'd{ 'Ikzgf 'r tkeg'o gyj qf 0'Vj ku'r tkeg'ku'dcugf 'qp'pwo gtqwu'hcevqtu' cpf 'o c{ 'pqv'dg'kpf kecvkxg'qh'yj g'o ctngv'r tkeg'qh'qwt'Gs wkx{ 'Uj ctgu''chygt''y g'Kuwg0Vj g'o ctngv'r tkeg'qh'qwt'Gs wkx{ 'Uj ctgu''eqwf 'o c{ 'f gerkpg''dgnqy ''yj g''kuwg''r tkeg0Y g''ecppqv'cuuwtg''{qw''y cv''{qw'y kni'dg''cdng''y qugmi'{qwt''Gs wkx{ ''Uj ctgu''cv'qt''cdqxg''yj g''Kuwg''r tkeg0''Hyt''hwty gt''f gycknu''{qw''o c{ ''tghgt''ej cr ygt'' vkurgf ''ŏ*Dc uku'lqt 'Kuwg''Rt kegö'* 'dgi kppkpi ''qp''yj g'r ci g'96'qh'yj ku'F tchv'Rtqur gewu0'''

Uqo g"qh"yj g"hcevqtu"y j kej "o c{"chhgev"qwt"uj ctg"r tkeg"y kij qw"hlo kxcvkqpu"ctg"cu"hqmqy u<"

- Tgr qt vu'qp'tgugctej 'd{ 'cpcn{ uvu0'
- Ej cpi gu'kp'tgxgpwg0'
- Xctkckqpu'kp'i tqy vj 'tcvg'qh'qwt'hkpcpekcn'kpf kecvqtu'uwej 'cu'gctpkpi 'r gt'uj ctg.'kpeqo g.'r tqhkv'gve0'
- I gpgtcn'O ctngv'Eqpf kkqp"
- F qo gurke "cpf "Kovgtpcvkqpcn" Geqpqo {0'

8:0' Ucng'qh'Gs who{'Uj ctgu'd{'qwt'Rtqo qvgtu'qt'qvj gt'lhi phhecpv'lij ctgj qnf gt*u+'b c{'cf xgtugn{'chhgev'lj g'Vtcfhpi'' rtheg'qh'lj g'Gs who{'Uj ctguO'

Cp{'kpuvcpeg'qh'f kukpxguvo gpvu'qh'gs wkx{''tij ctgu'd{'qwt'Rtqo qvgtu'qt'd{'qvj gt'tuki pkhkecpvtij ctgj qrf gt*tu+'o c{'tuki pkhkecpvt(" chhgev'tj g''ttcf kpi "r tkeg''qh'qwt''Gs wkx{''Uj ctgu0'Hwtvj gt."qwt''o ctngv'r tkeg''o c{"cnuq''dg''cf xgtugn("chhgevgf "gxgp''kh''vj gtg''ku''c" r gtegr vkqp''qt''dgrkgh''vj cv'tuwej "tucrgu''qh''Gs wkx{''Uj ctgu''o ki j v'qeewt0'

GZVGTP CN'TRUMU'

Kof wwt { 'Tgrc vgf 'Tkmr∠'

8; 0' Ej cpi gu'hp'i qxgtpo gpv'tgi wncwlqpu'qt'\j ght'ho r ngo gpvcwlqp'eqwnf'f hut wr v'qwt 'qrgt cwlqpu'cpf'cf xgt ugn('chhgev' qwt 'dwuhp guu'cpf't guwnu'qhlqrgt cwlqpu0'

Qwt"dwwlpguu"cpf "kpf wwt {"ctg"tgi wrcvgf"d{"f khhgtgpv"rry u."twrgu"cpf "tgi wrcvkqpu"htco gf "d{"yi g"Egpvtcn"cpf "Uccyg" I qxgtpo gpv0Vj gug'tgi wrcvkqpu"ecp"dg"co gpf gf "I"ej cpi gf "qp"c"uj qtv'pqvkeg"cv'yi g'f kwetgvkqp"qh'yi g'I qxgtpo gpv0Ki'y g" hcki'vq"eqo r n("y kj "cm'cr r nkecdrg"tgi wrcvkqpu"qt "kh'yi g'tgi wrcvkqpu"i qxgtpkpi "qwt"dwwlpguu"qt"yi gkt "ko r ngo gpvcvkqp"ej cpi g" cf xgtugn("y g"o c{ "kpewt"kpetgcugf"equvu"qt"dg"uwdlgev'vq"r gpcnkgu."y j kej "eqwrf"f kutwr v'qwt"qr gtcvkqpu"cpf "cf xgtugn(" chhgev'qwt"dwwkpguu"cpf "tguwnu"qh"qr gtcvkqpu0'

920' O crit cevlegu'd { 'liqo g'i' ric {gt u'lip 'ij g'lipf wuit { 'c'higev'qxgt criil gt hqt o cpeg'qh'go gt i lipi 'Eqo r cpligu''

 $\label{thm:condense} Vj g''hpf wnt \{''hp''y j kej ''qwt''Eqo r cp \{''qr gtcvgu''ku''uwdlgev''vq''tkum'cunqekcvgf''y kj ''wpgyj kecn''dwuhpguu''r tcevkegu''uwej ''cu'' wpgyj kecn'o ctmgvhpi .''f kuj qpguv''cf xgtvkuhpi .''s wguvhqpcdng''r tlekpi ''r tcevkegu.''hpcewtcvg''encko u''y kyj ''tgi ctf u''vq''uchgv{''cpf'' ghhece {''qh'yj g''t tqf wev'gwe0'Eqpuwo gtuø'cwkwnf g''vqy ctf''y g''hpf wnt {''qf c {''ku''f qo kpcvgf''d {''c''ugpug''qh'o kntwuv.''r cxkpi ''c'' y c {''hqt'tgi wrcvqtu''hqt''uktkevgt''gpvt {''dcttkgtu''cpf 'kpvtqf wevkqp'qh'eqf g'qh'eqpf wevu='o cmkpi ''y g''gpvktg'kpf wnt {''gpxktqpo gpv'' tgi wrcvgf''cpf ''eqpvtqnrgf 0'O crrtcevkegu''d {''uvqo g''r rc {gtu''hp''y g''hpf wnt {''chhgewi''y g''qxgtcmi'r gthqto cpeg''qh''y g''go gti kpi '' Eqo r cpkgu''hkng''wu''cu''y g''kpf wnt {''pqto u''ctg''crr rhecdng''vq''cmi'cv'r ctkv{0Cp{''wpgyj kecn'dwuhpguu''r tcevkegu''d {''cpf ''kpf wnt {''r rc {gt''qt''kpvgto gf kct {''o c {''ko r cev'qwt''dwuhpguu''cpf ''tguwnu''qh''qr gtcvkqpu0''}}$

Ovj gt 'Tkımı≮'

930` [qw'b c{'dg'lwdlgev'iq'Kpf kcp'iczgu'ct kdpi 'qwv'qHecr locnli clpu'qp'ij g'locng'qHij g'Gs wlo{'Uj ctgu0'

Wpf gt 'ewttgpv'Kpf kcp''cz 'rcy u'cpf 'tgi wrckqpu. 'ecr kcnii ckpu'ctkukpi 'htqo ''y g'ucrg'qh'gs wk\{ ''uj ctgu'kp''cp''Kpf kcp''Eqo r cp{''ctg'i gpgtcm(''vczcdrg'kp''Kpf kcO'Cp{'i ckp'qp''y g'ucrg'qh'uj ctgu'qp''c'uvqenigzej cpi g'j grf 'hqt'o qtg''y cp''34''o qpyi u'y kmipqv' dg'uwdlgev'vq''ecr kcnii ckpu'vcz 'kp'Kpf kc'kh'y g'ugewtkkgu''tcpucevkqp'vcz'*\dot UVV\dot ''j cu''dggp''r ckf ''qp''y g''tcpucevkqpOVj g''UVV'' y kmi'dg''ngxkgf ''qp''cpf ''eqnrgevgf ''d{ "cp''Kpf kcp''uvqenigzej cpi g''qp''y j kej ''gs wk\{ ''uj ctgu''ctg''uvqf O'Cp{ ''i ckp''qp''y g''ucrg''qh'' uj ctgu'j grf ''hqt''o qtg''y cp''34''o qpyi u'vq''cp''Kpf kcp''tgukf gpv.'y j kej ''ctg''uvqf ''qyi gt''y cp''qp''c'uvqenigzej cpi g''cpf ''cu'c''tguwn'' qh''y j kej ''pq''UVV''j cu''dggp''r ckf .''y kmi'dg''uwdlgev'vq''nqpi ''vgto ''ecr kcnii ckpu''cz''kp''Kpf kcO'Hwtyi gt.''cp{ ''i ckp''qp''y g''ucrg''qh'' uj ctgu''y grf ''hqt''c''r gtkqf ''qh''34''o qpyi u'qt''ngun'y kmi'dg''uwdlgev'vq''ecr kcnii ckpu''cz''kp''Kpf kcO'Hwtyi gt.''cp{ ''i ckp''qp''y g''ucrg''qh'' uj ctgu''y grf ''hqt''c''r gtkqf ''qh''34''o qpyi u'qt''ngun'y kmi'dg''uwdlgev'vq''ecr kcnii ckpu''cz''kp''Kpf kcO'Hwtyi gt.''cp{ ''i ckp''qp''y g''ucrg''qh'' uj ctgu''y grf ''hqt''c''r gtkqf ''qh''34''o qpyi u'qt''ngun'y kmi'dg''uwdlgev'vq''ecr kcnii ckpu''cz''kp''Kpf kcO'Hwtyi gt.''cp{ ''i ckp''qp''y g''ucrg''qh''



nkungf "gs wkk{"uj ctgu"j grf "hqt"c"r gtkqf "qh"34"o qpvj u"qt"nguu"y j kej "ctg"uqrf "qvj gt"vj cp"qp"c"unqem!gzej cpi g"cpf "qp"y j kej "pq"UVV"j cu"dggp"r ckf."y km"dg"uwdlgev"vq"uj qtv"vgto "ecr kscn"i ckpu"vcz"cv"c"tgncvkxgn{"j ki j gt"tcvg"cu"eqo r ctgf "vq"vj g" vtcpucevkqp"y j gtg"UVV"j cu'dggp"r ckf "kp"Kpf kc0'

Kp"Hlpcpeg"Dkm'4239."ugevkqp"32*5: +"y cu"co gpf gf "vq"r tqxkf g"yi cv"gz go r vkqp"wpf gt "yi ku"ugevkqp"hqt "kpeqo g"ctkulpi "qp" vtcpulgt "qh"gs wk{ "uj ctg"ces wktgf "qp"qt"chwgt"3uvlf c{ "qh"Qevqdgt"4226"uj cmi'dg"cxckrcdng"qpn{ 'kh''yi g"ces wkukkqp"qh'uj ctg"ku" ej cti gcdng" vq"Ugewtkkgu"Vtcpucevkqpu"Vcz"*UVV+" wpf gt "Ej cr ygt"XKK'qh" yi g"Hlpcpeg"*P q"4+"Cev."42260'Kp"ecug" yi ku" r tqxkukqp"dgeqo gu"ghtgevkxg."ucng"uj ctgu"ces wktgf "qp"qt"chwgt"3uvlf c{ "qh"Qevqdgt"4226"qp"y j kej "UVV"y cu"pqv'ej cti gf "y km'cwtcev'vcz'wpf gt "r tqxkukqpu"qh"Nqpi / Vgto "Ecr kcn'I ckpu0'

Cu'r gt "Hopeg Dkni423: ."gzgo r klap "wpf gt "ugeklap" 32*5: +l'hat "hpeqo g"ctkulpi "htqo "npi "\gto "i clpu"qp"\tcpuhgt "qh"\gs wkx{" uj ctg"\uj cm'pqv'dg"cxckrcdrg"qp"qt"chxgt"3uv'f c {"qhl'Cr tkri423: "kh"\uj g"npi /vgto "ecr kcnii clpu"gzeggf " "3.22.2221/"r 0:00Uvej " kpeqo g"ctkulpi "htqo "npi "\gto "i ckpu"qp"\tcpuhgt "qh"\us wkx{" uj ctg"qp"qt"chxgt"3uv'f c {"qhl'Cr tkri423: "kp"gzeguu"qh" "3.22.2221/"r 0:00Uvej " r c0'uj cm'dg"ej cti gcdrg"cv'\uj g"tcvg"qh"32' 0'Ecr kcnii ckpu"ctkulpi "htqo "\uj g"ucrg"qh"\uj ctgu'\uj kn'dg"gzgo r v'htqo "\uz cz\up kqp"kp" k\u00f6f kc"kp"ecugu'\uj j gtg"cp"gzgo r \u20f4\up tqxkf gf "\up f gt"c"\uz cz\up tgcv\under "dg w ggp"k\u00f6f kc"cpf "\uj g"equpvt {"qh'\uj j kej "\uj g"ugmgt"ku"c" tgulkf gpv0I gpgtcm{ ."K\u00f6f kcp"\uz cz "\up tgcv\under "\up ty p" k\u00f6f kc\u00f6 "\under "\up ty gh'\u00f6 ko\u00f6 "\u00f6 "\u00f6 ko\u00f6 "

940' Uki plikecpv'f kligt gpegu'gz kw'dgwy ggp' Kpf kcp' I CCR' cpf 'qvj gt' ceeqwp vlpi 'rt kpekr ngu 'lwej 'cu' WUUI CCR' cpf' 'KHTU.' y j kej 'o c{'dg'o cvgt kcn' vq' y g' klipcpekcn' lwcvgo gpvu 'rt grct gf' cpf' rt gugpvgf' kp' ceeqt f cpeg' y kej 'UGDK' KEFT' Tgi wrcvlqpu' eqpvc kpgf' kp' y ku' Ft chv' Rt qur gewwu' 0'

Cu"uwcyf" "kp" yi g"tgr qtu" qh" yi g"Cwf kqt" kpenwf gf "kp" yi ku"F tchv"Rtqur gewu" wpf gt" ej cr vgt "õ*Hlpcpekch"Uwcygo gp vu'cu'' Tguwc vgf* ö"dgi kppkpi "qp" r ci g"359" yi g"hlpcpekch"uwcygo gp vu"kpenwf gf "kp" yi ku"F tchv"Rtqur gewu" ctg"dcugf "qp"hlpcpekch" kphqto cwlqp" yi cv"ku"dcugf "qp" yi g"cwf ksgf "hlpcpekch"uwcygo gp vu" yi cv"ctg"r tgr ctgf "cpf" r tgugpygf "kp" eqphqto kwf" yi kyi "Kpf kcp" I CCR"cpf "tguwcygf" "kp"ceeqtf cpeg" yi kyi "yi g"UGDKKEFT" Tgi wwcwqpu "cpf" pq"cwgo r v" yi cu"dggp" o cf g"vq" tgeqpekrg" cpf "qh" yi g"kphqto cwlqp" i kxgp" kp" yi ku"F tchv"Rtqur gewui" vq" cpf "qvi gt" tkpekr rgu"qt" vq"dcug" kv"qp" cpf "qvi gt" uwcpf ctf u0 kpf kcp" I CCR" f khtgtu" htqo "ceeqwpvkpi" r tkpekr rgu"cpf" cwf kkpi "uwcpf ctf u" yi kj" yi kej "r tqur gevkxg" kpxguvqtu" o c{"dg"hco krkct" kp" qyi gt" eqwpvtkgu. "uwej "cu"WUOI CCR"cpf" kHTUU! i pkhkecpvlf khtgtgpegu" gz krv"dgwy ggp" kpf kcp" I CCR"cpf" WUOI CCR"cpf" kHTU! yi kj "o c{"dg"o cytlcri'vq" yi g"hlpcpekch" kphqto cwlqp" r tgr ctgf" cpf" r tgugpygf" kp" ceeqtf cpeg" yi kj" kpf kcp" I CCR" eqpvckpgf" kp" yi ku"F tchv"Rtqur gewuu'O'Ceeqtf kpi n{."yi g"f gi tgg" vq" yi kej "yi g"hlpcpekch" kphqto cwlqp" kpmwf gf "kp" yi ku"F tchv"Rtqur gewu" y kni"r tqxkf g"o gcpkpi hwd kphqto cwlqp" kroketty kj "Kpf kcp" I CCR" vyi g"Eqo r cpkgu" Cev"cpf" yi g"UGDK KEFT" Tgi wwc kqpu0'Cp{"tgrkcpeg" d{"r gtuqpu" pqv"hco krkct" y kj "Kpf kcp" I CCR" qp" yi g"hlpcpekch" kuenquwtgu" r tgugpygf" kp" yi ku"F tchv"Rtqur gewu" y kri"r tqxkf g"o gcpkpi hwd kphqto cwlqp" kroketty kyi "Kpf kcp" I CCR" qp" yi g"hlpcpekch" kuenquwtgu" r tgugpygf" "kp" yi ku"F tchv"Rtqur gewu" y kri"r tqxkf g"o gcpkpi hwd kphqto cwlqp" kroketty kyi "Kpf kcp" I CCR" qp" yi g"hlpcpekch" kuenquwtgu" r tgugpygf" "kp" yi ku"F tchv"Rtqur gewu" yi ku"F tchv"Rtqur gewu" yi kyf "kcp" I CCR" qp" yi g"hlpcpekch" kuenquwtgu" r tgugpygf" "kp" yi ku"F tchv"Rtqur gewu" yi ku"F tchv"Rtqur gewu" yi kyf "kcp" I CCR" qp" yi g"hlpcpekch" kenquwtgu" r tgugpygf" "kp" yi ku"F tchv"Rtqur gewu" yi y

950' Rankern'hpuwakhk{''at''c''ej cpi g'hp''geap qo ke''nldgtcnl|cvlap''cpf''f gtgi wncvlap''r anlelgu''eqwnf''ugt lawun(''j cto''' dwulpguu'bpf'geap qo ke'eapf klapu'lp''kpf kc'i gpgtcmf''cpf''qwt'dlwulpguu'bp''r ctvlewnct0''

Vj g"I qxgtpo gpv'qh"kpf kc"j cu"vtcf kkqpcm("gzgtekugf"cpf"eqpvkpwgu"vq"gzgtekug"kphnwgpeg"qxgt"o cp{"cur gewu"qh"vj g" geqpqo {0Qwt"dwukpguu"cpf "vj g"o ctngv"i tkeg"cpf 'liks wkf kk{ 'qh"qwt 'Gs wkx{ 'Uj ctgu"o c{"dg"chhgevgf"d{ 'kpvgtguv"tcvgu."ej cpi gu" kp"I qxgtpo gpv"i qrke{."czcvkqp."uqekcn"cpf 'ekx kriwptguv"cpf 'qvj gt"r qrkekcn"geqpqo ke"qt"qvj gt"f gxgrqr o gpwu"kp"qt"chhgevkpi "kpf kc0"Vj g"tcvg"qh"geqpqo ke"rkdgtcrk{ cvkqp"eqwf"ej cpi g."cpf "ur gekhke"rcy u"cpf "r qrkekgu"chhgevkpi "vj g"kphqto cvkqp" yej pqrqi {"ugevqt."hqtgki p"kpxguvo gpv"cpf "qvj gt"o cvgtu"chhgevkpi "kpxguvo gpv"kp"qwt"ugewtkkgu"eqwrf"ej cpi g"cu"y gm0Cp{"uki pkhkecpv"ej cpi g"kp"uwej "rkdgtcrk{ cvkqp"cpf "f gtgi wrcvkqp"r qrkekgu"eqwrf"cf xgtugn{"chhgev'dwukpguu"cpf"geqpqo ke"eqpf kkqpu"kp"kpf kc."i gpgtcm{."cpf "qwt"dwukpguu"rtqur gewu."hkpcpekcn"eqpf kkqpp"cpf 'tguwrnu"qh"qr gtcvkqpu."kp"r ctvkewrct0"

960 Hkpcpekcnlpuscdkik{'kp'Kpfkcp'HkpcpekcnlOctngsu'eqwif'bfxgtugn{'bhgev'qwt'Eqorcp{øu'tguwnu'qh'qrgtcskqp'' cpf'hkpcpekcnleqpfkskqp0'

Kp''y kı'i mdcnk gf''y qtrf.''y g'Kpf kcp''geqpqo {'cpf'hlpcpekcn'o ctngwi'ctg'uki pkhkecpwf 'kphwgpegf''d {'y qtrf y kf g''geqpqo ke." hlpcpekcn'cpf "o ctngw'eqpf kklqpu0'Cp {"Hpcpekcn'wto qkn''uc {"kp''y g''Wpkgf''Uvcygu'qh'Co gtkec."Gwtqr g."Ej kpc''qt''qy' gt'' go gti kpi 'geqpqo kgu.''o c{'j cxg''c'pgi cwxg'ko r cev'qp''y g''Kpf kcp''geqpqo {0'Cny qwi j 'geqpqo ke''eqpf kklqpu''f khtgt''kp''gcej "eqwpvt {."kpxguvqtuø'tgcevklqpu''q''cp {"uki pkhkecpv'f gxgmqr o gpwi'kp''qpg''eqwpvt {"ecp''j cxg''cf xgtug''ghhgewi'qp''y g''hkpcpekcn' cpf "o ctngv''eqpf kklqpu''kp''qy gt ''eqwpvtkgu0'C''muu''kp''kpxguvqt ''eqphkf gpeg''kp''y g''hkpcpekcn'u {uvgo u."r ctvkewctn("kp''qy gt'' go gti kpi "o ctngvu" o c{"ecwug''kpetgcugf "xqruvktk/ "kp'' Kpf kcp''hkpcpekcn'o ctngvu0' Kpf kcp''hkpcpekcn'o ctngvu'' gzr gtkgpegf "y g''eqpvci kqp''ghtgev'qh''y g''i mdcn'hkpcpekcn'wto qkt0'Cp {"r tqnqpi gf "hkpcpekcn'etkuku''o c {"j cxg''cp''cf xgtug'' ko r cev'qp''y g''Kpf kcp''geqpqo {.''y gtgd {'tguwnkpi 'kp''c'o cvgtkcn'cpf ''cf xgtug''ghhgev'qp''y g''r cuv'gzr gtkgpegf ''uwduvcpvkcn' hvewcvkqpu''kp''y g''r tkegu'qh'hungf ''ugewtkkgu0'



970' Y g'ecppqv'l wetepvgg'ij g'eewtee{ 'dt'eqo rigvgpguuldhlicewlepf'dyi gt'laevkukeu'y kij 'tgurgev'iq'Kpfkc.'ij g'Kpfkcp'' geqpqo {'cpf'dwt'lpf wut{'eqpvclpgf'lp'ij g'Ftchv'RtqurgewuU'

980' I nqdcnlgeqpqo ke.'r qnlskecnlcpf 'luqekcnleqpf lskqpu'b c{'j cto 'qwt 'cdknls{'\q'f q'dwukpguu.'kpetgcug'qwt 'equnu'cpf'' pgi cvkxgn{'chlgev'qwt 'luqemi'r lwg0'

I mdcn'geqpqo ke "cpf "r qrkskecn'hcevqtu" y cv'ctg"dg { qpf "qwt"eqpvtqn "kphrwgpeg "hqtgecuvu" cpf "f ktgevt "chhgev'r gthqto cpeg0' Vj gug "hcevqtu" kpenwf g "kpvgtguv't cvgu "qh'geqpqo ke "i tqy y j . "hkuecn'cpf "o qpgvct { "r qrkekgu"qh"i qxgtpo gpwu "kphrcwkqp." f ghrcwlqp. "hqtgki p "gzej cpi g "hrwewcwkqpu." eqpuwo gt "etgf kv'cxckrcdkrk{ . "hrwewcwkqpu" kp "eqo o qf kkgu"o ctngvu." eqpuwo gt "f gdv' ngxgnu." wpgo r nq {o gpv' vtgpf u" cpf "qvj gt" o cwgtu" y cv' kphrwgpeg "eqpuwo gt" eqplwf gpeg." ur gpf kpi "cpf " vqwtkuo 0' kpetgcukpi "xqrcwkrkv{ "kp"hkpcpekcn'o ctngvu" o c{ "ecwug" y gug" hcevqtu" vq" ej cpi g" y kyj "c" i tgcvgt "f gi tgg"qh' htgs wgpe { "c" o ci pkwf g. "y j kej "o c{ "pgi cvkxgn{ "chhgev'qwt" uvqem'r tkegu0'

990' Hqtgli p 'lpxguaqtu'ctg'lavdlgev'iq 'lqtgli p 'lpxguao gpv'tguat levlqpu'wpf gt 'Kpf kcp' kcy 'lj cv'ho ku'qwt 'cdkilo{ 'lq'cwt cev' hqtgli p 'lpxguaqtu'y j kej 'o c{ 'cfxgtugn{ 'lo rcev' lj g' o ctmgv'rt keg' qh' lj g' Gs wko{ 'Uj ctguU'

 $\label{thm:problem} Wpf gt"iy g"hqtgki p"gzej cpi g"tgi wcklqpu"ewttgpv("hp"hqteg"kp"kf) fk."vcpuhgtu"qh"uj ctgu"dgw ggp"pqp/tgukf gpvu"cpf"tgukf gpvu"ctg"htggn("r gto kwgf "%twdlgev'vq"egtvckp"gzegr vkqpu+"kh"vj g{"eqo r n("y kj "vj g"r tkekpi "i wkf grlpgu"cpf "tgr qtvkpi "tgs wktgo gpvu"ur gekhkgf "d{"y g"TDK/Ki'vj g"vcpuhgt "qh'vj ctgu."y j kej "ctg"uqwi j v'vq"dg"vcpuhgttgf .'ku'pqv'kp"eqo r ncpeg'y kj "uwej "r tkekpi "i wkf grlpgu"qt"tgr qtvkpi "tgs wktgo gpvu"qt"hcm'wpf gt"cp{"qh'vj g"gzegr vkqpu"tghgttgf "vq"cdqxg."vj gp"vj g"r tkqt" cr r tqxcn'qh'vj g"TDK'y km'dg"tgs wktgf 0Cf f kkqpcm(."uj ctgj qnf gtu'vj q "uggm'vq"eqpxgtv'vj g"T wr gg"r tqeggf u'htqo "c"ucng"qh" uj ctgu"hp"kpf kc"hpvq"hqtgki p"ewttgpe{"thqo "kpf kc"y km'tgs wktg"c"pq"qdlgevkqp"l"vcz" engctcpeg"egt vkhecvg"htqo "vj g"kpeqo g"vcz"cwj qtkx{0Vj gtg"ecp"dg"pq"cuunwtcpeg'vj cv'cp{"cr r tqxcn'tgs wktgf 'htqo "vj g"TDK' qt"cp{"qj gt"i qxgtpo gpv'ci gpe{"ecp"dg"qdvckpgf "qp"cp{"r ctvkewct"vgto u"qt"cv'cm0'}}$

9:0 Pewntenleeneo kukgu'leqwnf'j exg'le'pgi ewlxg'ko reev'dp'ij g'Kpf kep'geappao {'lepf'leewug'Qwt'Eqo rep{øu'ldwukpguu'la'' uwhligt0'

Kpf kc'j cu'gzr gtkgpegf 'pcwtcn'ecroo kkgu'uwej 'cu'gctyj s wcngu. 'uwpco k'hqqf u'gve0Kp'tgegpv'{ gctu. 'yj g'gz vgpv'cpf 'ugxgtkx{" qh'yj gug'pcwtcn'f kucurgtu'f gygto kpg"yj gkt 'ko r cev'qp"yj g"Kpf kcp"geqpqo {0'Rtqqppi gf 'ur gmu'qh'cdpqto cn'tckphcm'qt"qyj gt" pcwtcn'ecroo kkgu"eqwrf "j cxg"c"pgi cvkxg"ko r cev'qp"yj g"Kpf kcp"geqpqo {."yj kej "eqwrf "cf xgtugn{"chhgev'qwt "dwukpguu." r tqur gevu. 'hkpcpekcn'eqpf kkqp"cpf 'tguwnu'qh'qr gtcvkqpu'cu'y gm'cu'y gri'cty'y g'r tkeg"qh'yj g'Gs wkx{ "Uj ctgu0"

9; 0' Vgttqtkw'cwcemu'ekxkil'wptgwu'cpf''qvj gt''cevu'qh'xkqngpeg''qt''y ct''kpxqnxkpi 'Tkpfkc''qt''qvj gt''eqwpvtkgu'eqwrf'' cfxgtugn('bhgev'ij g'hlpcpekchb ctngvu'qwt'dwukpguu'hlpcpekchbqpfkkqp'bpf'ij g'ttkeg'qh'qwt'Gswkv('Uj ctgu0'

 $\label{thm:continuous} Cp \{ \begin{tikzpicture}[t]{0.25\textwidth} \begin{tikzpicture}(c) $$ \color=0.5$ $$ $$ \color=0.5$ $$ \c$

: 20 Cp{'fqy pitcf kpi 'klkkff kcøu'llqxgtgki p'tcvkpi 'd{'cp'kpf gr gpf gpv'ci gpe{'b c{'j cto 'kwt'cdkkk{'kq'tckug'kkpcpekpi 0'

Cp{"cf xgtug"tgxkukqpu"vq"Kpf kc)u"etgf kv"tcvkpi u"hqt"f qo guvke"cpf "kpvgtpcvkqpcn"f gdv"d{ "kpvgtpcvkqpcn"tcvkpi "ci gpekgu"o c{" cf xgtugn{"ko r cev"qwt"cdktk\{" "q"tckug"cf f kklqpcn"hkpcpekpi ."cpf "kj g"kpvgtguv"tcvgu"cpf "qvj gt"eqo o gtekcn"vgto u"cv"y j kej "uwej " cf f kklqpcn"hkpcpekpi "o c{"dg"cxckrcdrg0Vj ku"eqwrf "j cxg"cp"cf xgtug"ghtgev"qp"qwt "dwukpguu"cpf "hwwt g"hkpcpekcn"r gthqto cpeg." qwt "cdktk\{"vq"qdvckp"hkpcpekcn" hqt"ecr kxcn"gzr gpf kwtgu"cpf "yj g"tcf kpi "r tkeg"qh"qwt "Gs wkx{"Uj ctgu"



UGEVKOP'KX<KPVTOFWEVKOP"

VJ G'KUWG''

Vj g'hqmqy kpi 'ku'\j g'\two o ct { ''qh'\j g'\txuwg<'''

Gs wk/ 'Uj ct gu'Qhlgt gf '13+"	Kunvg"qh"wr vq"6.38.622"Gs wkv{"Uj ctgu"qh" "32022"gcej "hqt"
Rtgugpv'Kuwg''qh'Gs wks{ "Uj ctgu''d{ "qwt "Eqo r cp{ "*4+"	ecuj "cv"c"rtkeg"qh" "] _"rgt"Gs wkx{"Uj ctg"*kpenwf kpi "
0 01	rtgo kwo "qh" "] _"rgt"Gs wkw{"Uj ctg+"ci i tgi cvkpi "vq"] _'"
	Ncnj O'
Qwv'qH\y j kej <'	
Oct ngv'O cngt 'T gugt xcvkqp'Rqt vkqp'''] _'Gs wkx{"Uj ctgu"qh" "32022"gcej "hwm{"r ckf/wr "qh'qwt"
"	Eqorcp{"hqt"ecuj "cv"c"rtkeg"qh" "] _"rgt"Gswkw{"Ujctg"
	*kpenwfkpi" rtgokwo" qh" "]_"rgt"Gswkw{"Ujctg+"
	ciitgickpi'vq"']_'Ncmj0'
Pgv'Kunvg'tq'tj g'Rwdrle"] _'Gs wkx{ "Uj ctgu"qh" "32022"gcej "hqt"ecuj "cv"c"r tkeg"qh" "
"] _"rgt"Gswkw{"Ujctg"*kpenwfkpi"rtgokwo"qh""] _"rgt"
	Gswkw{"Ujctg+"ciitgicwkpi"vq""]'Ncmj0"'
Qwv'qhly j kej <'	
Cmqecvlqp'\q'T gvc\rik\pf \k\lf wcnk\pxguvqt u'hqt \wr vq'' 4022'']_'Gswkx{"Ujctgu"qh" "32022"gcej"cv'c"rtkeg"qh" "]_rgt"
Nenj ''	Gswkw{"Ujctg"*kpenwfkpi"rtgokwo"qh""]_"rgt"Gswkw{"
	Uj ctg+'ci i tgi cvkpi 'vq" '] _'Ncmj 0"'
Cmqecvkqp''vq''Pqp/Kpurksvvkqpcn'Kpxgurqtu''hqt''cdqxg''] _'Gs wkx{ "Ujctgu"qh" "32022"gcej "cv'c"rtkeg"qh" "] _'rgt"
4@2'Ncnj ''	Gswkw{"Ujctg"*kpenwfkpi"rtgokwo"qh""]_"rgt"Gswkw{"
	Uj ctg+"ci i tgi cvkpi "vq" "]_"Ncmj 0"
Rtg'cpf 'Rquv/Kuwg'Gs ww{ 'Uj ctgu''	
Gs www 'Uj ct gu'qwwwcpf kpi 'r t kqt 'vq'vj g'Kunwg''	; .52.222''Gs wkw{ "Uj ctgu"qh" "32022"gcej ''
Gs wks{ 'Uj ct gu'qww.ncpf kpi 'chygt 'tj g'Ku.nvg''	35.68.622 % Gs wkx{ "Uj ctgu"qh" 32022"gcej ''
Qdlgewi'qhi'yj g'Kumg''	Rrgcug"t ghgt "vq "vj g"ej cr vgt "vkrgf "õ <i>Qdlgevu'qh'vj g'Kaawgö</i> "
	dgi kppkpi "qp"8: "qh'vj ku"Ftchv"Rtqurgeww0"'

*3+Vj ku'Kunng'ku'dgkpi "o cf g'kp''vgt o u'qh'Ej crvgt'KZ''qh'\j g'UGDK*KEFT+Tgi wncvkqpu."423: .'cu''co gpf gf 'ht qo ''\ko g'\q''\ko g0' Hqt''hnt vj gt "f gvc knu "rngcug" ugg" vj g"ugevkqp" vkngf "õ Kunng" Tgncvgf "Kohqt o cvkqpö" dgi kppkpi "qp" rci g"397" qh''vj ku''Ft chv'' Rt qur gewn0'

*4+'Vj g'rt gugpv'Kumg'j cu'dggp'cwnj qtk| gf 'rwtuwcpv'\q'c't guqnwkqp''qh'qwt 'Dqctf 'f cvgf 'F gego dgt '35.'4245'cpf 'd{ 'Ur gekcn' T guqnwkqp"rcuugf "wpf gt "Ugevkqp"84*3+'E+'qh'vj g"Eqo rcpkgu"Cev."4235"cv'cp"Gzvtc/Qtf kpct{"I gpgtcn'O ggvkpi "qh'qwt" uj ct gj qrf gt u'j grf ''qp'F gego dgt '3:.'42450'

"Cuuwo kpi 'Hwnd'Uwduet kr vkqp'"

 $\label{eq:cuir} Cui'r\ gt'Tgi\ wrc\ lqp''475*4+'qh''y g''UGDK*HEFT+'Tgi\ wrc\ lqpu.''423:\ .''cu''co\ gpf\ gf''htqo'''v g''vq''v g.''y g''cmqec\ lqp''v g''y g''pgv'' kuwg''vq''y g''r\ wdrhe''ecvgi\ qt {''uj\ cm''dg''o\ cf\ g''cu''hqmqy\ u<'''}$

Okpko wo "72" "*hkhw{ "r gtegpv+"vq"Tgvckn"Kpf kxkf wcn"Kpxguvqtu="cpf"

Tgo ckpkpi 'vq<'

- c+ Kpf kxkf wcn'crrnkecpvu'qvj gt''vj cp''tgvckn'kpf kxkf wcn'kpxguvqtu="cpf"
- d+ Qyj gt "kpxguvqtu" kpenwf kpi "eqtr qtcvg" dqf kgu" qt "kpuvkwwkqpu. "kttgur gevkxg" qh" yj g" pwo dgt "qh" ur gekhkgf "ugewt kkgu" crr nkgf "hqt="

 $Rtqxkf gf "ij cv'ij g"wpuwduetklgf "r qtvkqp" kp "gkij gt "qh'ij g"ecvgi qtkgu" ur gekhkgf "kp "'c+"qt "'d+"cdqxg" o c { "dg"cmqecvgf "vq"ij g" cr r necpvu" kp "ij g"qvj gt "ecvgi qt { 0' }$

Gzræpcklap'tq'Tgi wæklapu'475"qh'ÆFT"Tgi wæklapu. "423: <'Ki'y g'tgvckilpf kxkf væikpxguvqt"ecvgi qt{ 'ku''gpvkægf 'vq''o qtg'' yi cp'hkhr{ 'r gtegpv'qh''y g'kuwg'ukt g''qp''r tqr qtvkqpcvg''dcuku. "ceeqtf kpi n{ 'vj g'tgvckilkpf kxkf væikpxguvqtu'uj cm'dg''emqecvgf 'vj cv'' j ki j gt'r gtegpvei g0'



UWO O CT['QH'HKP CPEKCN'UVCVGO GP VU''

<u>''</u>						
	CUUQEKCVGF 'EQCVGTUNKO KVGF'''					
"""	" EP'W: 34; Y D4239RNE446223" ""					
,,,	TGUVCVGF 'UVCVGO GP V'QH'	CUUGVU('N	KCDKNK/KGU'	•	111	
"""	· · · · · · · · · · · · · · · · · · ·	"	"	" ' '*1	··· [u0kp'Ncmj u+'	
		'Cư'cv'	'Cư'ċv''	'Cư'ċv''	'Cu'ċv'	
	Rct vlewrct u''	5202; 04245"		53@504244"		
Ю'	GS WAV['CPF'NKCDKNKVKGU'	***	181	1111	181	
3''	Ujctgjqnfgtuø/Hwpfu''	***	***	181	181	
""	*c+"" Uj ctg'Ecr kxcn'	5@2"	5@2"	5@2"	5@2"	
""	*d+"' Tgugtxgu'cpf "Uwtr nwu"	322079"	89056"	35027"	*2084+"	
""	"" "	"	"	"	/"	
4''	Pqp/Ewttgpv'flcdlrlslgu''	"	"	"	"	
***	*c+"' Napi/vgto "Dattay kpi u"	560, 2"	; 0, 2"	32032"	2042"	
***	*d+"" Fghgttgf"Vcz"Nkcdkrkkgu"*Pgv+"	/"	/"	/"	/"	
***	*e+'" Nqpi/vgto "Rtqxkukqpu"	3082"	3@2"	2058"	"	
***	" "	"	"	"	"	
5''	Ewttgpv'Nkcdkkklgu''	"	"	"	"	
***	*c+'" Uj qt√vgto ''Dqttqy kpi u''	/"	/"	/"	/"	
***	*d+"" Vtcf g"Rc{cdrg"	"	"	"	"	
***	'"' *K+" Fwgu'rc{cdrg'\q'OUOG'Etgfkxqtu"	3805: "	9025"	; 08: "	/"	
	F wgu'r c{cdrg'\q'qyj gt'\j cp'O UO G''					
""	"" *KK-" Etgf kqtu"	; 9039"	; 6082"	: 90, 5"	/"	
""	*e+" Qyjgt 'Ewttgpv'Nkcdkrkkgu"	; 40, 3"	; 50; "	940 6"	2036"	
""	*f+"'Ujqt√vgto"Rtqxkukqpu"	4603: "	3; 04: "	60 6"	/"	
***	" "	"	11	"	"	
""	"" " VQVCN"	592093''	4; 8084''	4230 3''	4094''	
"	"	"	''	''	''	
""	" "	"	"	"	"	
KK O'	CITICATII					
	CUUGVU'	"	"	"	"	
3"	Pqp/ewttgpv'Cugui' Ptgrqtyl "Pmpyl" "Grylro gpyl" "Kyopi ldm"	"	"	"	"	
***	Rtqrgtv{.''Rrcpv'('Gswkrogpv'('Kpvcpikdrg'' *c+'''Cuugvu''	"	,,	,,	,,	
,,,	"' *k+" Rtqr gtv{.'Rrcpv'('Gs wkr o gpv'	: 9077"	690 2"	74025"	/"	
***	"' *kk+" Eer kscn'Y qtm'kp/r tqi tguu''	. 70/ /"	/"	/4023	/"	
,,,	*d+" Fghgttgf "Vcz 'Cuugut'*P gv+"	2049"	2029"	2026"	/"	
,,,	*e+" Pqp/'Ewttgpv'Kpxguvo gpvu"	/"	/"	/"	/"	
***	*f+" Nqpi /vgto "Nqcpu"cpf "Cf xcpegu"	/ / "	/"	/"	/"	
***	*g+" Qyj gt "P qp/"Ewtt gpv 'Cuugwu"	/ / "	/"	/ / "	2029"	
,,,	2. All strady, Dwitsh, Carista	/ 	,,,	, ,,	2029	
4''	Ewttgpv'Cugw''	,,	,,	,,	,,	
,,,	*c+" Kpxgpvqtkgu"	4; 087"	50,5"	40 7"	/"	
***	*d+" Vtcf g'Tgegkxcdrgu"	36; 046"	3720,3"	3570 9"	/"	
,,,	*e+" Ecuj "cpf "Ecuj "Gs wkxcrgpw"	88 3 6"	880 9"	: 036"	4087"	
,,,	*f+" Uj qtv'Vgto "Nqcpu"('Cf xcpegu"	37 (2 ; "	3; Ø: "	. 660 2024"	/"	
,,,		4504: "	3, 07. 80, 9"	40 8"	/"	
,,,	*g+"' Qyigt"Ewttgpv'Cuugvu"	4 3 04 .	oy 3 "	+u o	,,	
•••	" VOVCN"	59203''	4; 8084''	4230 3"	4094''	
<u>. </u>	" VQVCN"	37403	4,004	423U 3	404	



CUUQEKCVGF 'EQCVGTUNKO KVGF''' EKP '<'W4: 34; Y D4239RNE446223" TGUVCVGF 'UVCVGO GP V'QHRTQHKV'('NQUU''

"" "	"			'*TuUkp 'Nc mj_u+'
Rct vlewret u'	'Hqt'\j g'J cnh' { gct 'gpf gf '' 5202; 04245'''	'Hqt'\j g'{gct'' gpf gf '' 5302504245'''	'Hqt''tj g'{ gct'' gpf gf '' 5302504244'''	'Hqt '\j g'{ gct '' gpf gf '' 5302504243'''
""	""	""	""	***
Tgxgpwg'htqo ''qrgtcwqpu	4540, 8"	57: 0, 6"	35; 063"	/"
Qyj gt'lpeqo g"	/"	/"	/"	/"
1111	u.	"	"	"
VqvcrlKpeqo g''	4540,8"	57: 0, 6"	35; 663"	/''
181	"	"	"	11
Gzrgpugu≮'	"	"	"	"
Equv'qh'O cvgtkcnu'Eqpuwo gf "	3830,3"	458079"	325079"	/"
Gorm{gg"Dgpghk/Gzrgpugu"	7075"	44039"	32\&08"	/"
Hlpcpeg'Equv'	2025"	2076"	2023"	/"
Fgrtgekcvkqp"cpf 'Coqtvktcvkqp"Gzrgpugu"	808; "	9078"	50,6"	/"
Qyj gt 'Gzr gpugu	350;"	3: 95"	5029"	2036"
VqvcrlGzr gpugu''	3::028"	4: 7079''	3420,6"	206''
181	"	"	"	"
Rt qHw'dghqt g'Gzegr vkqpcrlKgo u''	660, 2''	95Ф9''	3: 669"	*2086+''
181	"	"	"	"
Gzegr wkqpcn'Kgo u"	"	"	"	"
")"/Nquu"qp"Ucrg"qh"Ifpxguvo gpv"	/"	/"	/"	/"
1111	"	"	"	"
Rt qHwf*Nquu+'dghqt g'Vcz''	660, 2"	95059''	3: 669"	*2086+''
1111	"	"	"	"
Vcz'Gzrgpugu≮'	"	"	"	"
Ewttgpv''Vcz"	330 9"	3; Ø3"	60 6"	/"
Ocv'Etgfkv'Gpvkvrgogpv'	/"	/"	/"	/"
Fghgttgf "Vcz"	*2042+"	*2025+"	*2026+"	/"
181	11	11	11	11
Rt qhls⁄l*Nquu+'hqt 'vj g'{ gct ''	55044''	76052''	35@9"	*2086+''
****	"	"	"	"
Gctpkpi u'r gt 'gs wkw{ 'tıj ctg<'	"	"	"	"
Dcuke' ¾p'Tu0 ⊬'	5079"	70 6"	3069"	/"2023"
Fknwgf' *kp'Tu0 +"	5079"	70 6"	3069"	*2023+"



CUUQEICVGF 'EQCVGTU'NKO KVGF ''' EIP '<'W4: 34; Y D4239RNE446223'' TGUVCVGF 'ECUJ 'HNQY 'UVCVGO GPV'''

1111	n	"	***		'*TuOkp'Nc nj u+'
	Rct vlewret u''	Hqt''y g'J ch'' [gct'gpf gf''' 52vj'' Ugr vgo dgt.'' 4245''	Hqt'\'j g'[gct'' gpf gf''' 53uv'O ctej .'' 4245''	Hqt''yj g'[gct'' gpf gf ''' 53uv'O ctej .'' 4244''	
	ECUJ 'HNQY 'HTQO 'QRGTCVIPI "				
C'	CEVIXIVIGUE'	"	"	"	"
'"'	P gv'Rtqhkv'dghqtg''vcz''	660, 2"	95059"	3: 069"	*2036+"
'"'	Fgrtgekcvkqp"("Coqtvkucvkqp"	808; "	9078"	50, 6"	/"
'"'	Hpcpeg'Equv'	2@5"	2076"	2023"	/"
l	Nquul*Rtqhkv+'qp''Ucrg''qh''Rtqr gtv{.''Rrcpv'("				
"""	Gs wkr o gpw"	/"	/"	/"	/"
,,,,	Rtqxkkqp"hqt"I tcwks{"	2023"	2022"	2058"	/"
1111	Rtgrko kpct { "Gzr gpugu"	/" /"	/"	2029"	2 02 9" /"
	Kygtguv'Kjeqo g" Or at ovlni 'Dt alleddata'V at wlni 'E ovland'	/	/	/	/
"""	Qrgt cykpi 'Rt qhlw'dghqt g'Y qt mlpi 'Ecr ken'	73@5"	. 206. !!	440 7''	*2@8+''
1111	Ej cti gu'	7305	:366; "		
1111	Cf lwngf 'lqt <'	" *47044+"	*302: +"	*40 7+"	" /"
,,,	Kpxgpvqtkgu" Vtcf g"tgegkxcdrgu"	3089"	*302: + *37026+"	*3570 9+"	/"
"""	Uj qtv'Vgto 'Nqcpu'('Cfxcpegu''	606; "	*3; 077+"	*2 0 24+"	/"
"""	Qy gt 'Ewttgpv'Cungwi'	*38 (53+"	*6032+"	*40 8+"	/"
1111	Vtcf g'Rc{cdrg''	330,5"	6023"	; 9084"	/"
***	Qy gt 'Ewttgpv'Nkcdkrkkgu''	*3028+"	43035"	94092"	2028"
"""	Uj qt√vgto ''Rtqxkıkqpu''	/"	/"	/"	/"
***	Ecuj 'I gpgtcvgf 'Ht qo 'Qrgtcvkqpu''	49093"	8906; "	73078"	/"
"""	Rc{o gpv'qh'Kpeqo g'Vcz'*P gv'qh'Tghwpf+"	*80,9+"	*608: +"	/"	/"
"""	III	"	"	"	"
	Pgv'ecuj 'i gpgt c vgf 1 *wugf 'lp+'lt qo ''		0.40.54		
"""	qrgt cvlpi 'cevlxlslgu'	4206''	840 3"	73078''	/''
'"'	""	"	"	"	"
	ECUJ 'HNQY 'HTQO 'IPXGUVIPI "				
D''	CEVIXIVIGUE	***************************************	" *** 0= = .!!	" *770.0."	"
***	Rwtej cug"qh'Rtqr gtv{ ."Rrcpv'('Gs wkr o gpv'	*68067+" /"	*5 (55+" /"	*770,9+"	/" /"
***	Ecr ken'Y qtn'Ko'Rtqi tguu''	/"	/ /"	/ /"	/"
***	Ucng"qh"Rtqr gtv{."Rncpv"("Gs whr o gpv"	/"	/"	/"	/"
,,,	Rwtej cug l*Ucng+'qh'Kpxguvo gpvu" Kpvgtguv'Kpeqo g"	/"	/"	/ /"	/"
"""	PgvEcuj 'wugf 'lp'KpxguNpi 'CevkxkNgu'*D+'	*68067+''	*5 0 55+''	*770,9+''	/''
1111	I gy E cij wigi ip ip zgwipi e c wzwigu D	"	"	"	"
	ECUJ 'HNQY 'HTQO 'HRPCPERPI ''				
E'	CEVIXIVIGUE'	"	"	"	"
'"'	Hepcpeg'Equv'	*2025+"	*2076+"	*2023+"	/"
"""	O qxgo gpv'qh'Nqpi 'Vgto 'Dqttqy kpi u'	47022"	*2042+"	; 0, 2"	/"
1111	Oqxgo gpv'Uj qtv'vgto "dqttqy kpi u"	/"	/"	/"	/"
1111	Pgv'Ecuj 'wugf 'kp'Hkpcpekpi 'Cevkxkskgu'*E+''	460,9"	*2096+''	;0;"	/''
	Pgv'Kpet gcug l*Fget gcug +'kp'Ecuj 'cpf 'Ecuj '	,		, ,	
"""	Gs wkscrgpwi'	*2095+''	7: 095"	706: ''	/''
"	"	**	***	**	**
	Ecuj 'cpf 'Ecuj 'Gs wkxcrgpw'cv'tj g''				
"""	dgi kppkpi 'hk'yi g'{ gct ''	880 9''	:086''	4087''	4087''
	Ecuj 'cpf 'Ecuj 'Gs wkxcngpw'cv'vj g'gpf 'qh'	5047			
'"'	yj g'{gct"	88 0 6''	880 9''	:066''	4087''
"""	"	"	"	"	1111
"""	"	"	"	"	***
Pq	y "≼"	"	"	"	***
					'



CODcrepegu'y kj 'dcpmu'	S2E; W245 S3E3W244 S3E3W245 S3E3W244 S3E3W244 S3E3W244 S3E3W244 S3E3W244 S3E3W245 S3E3W244 S3E3W244 S3E3W245 S3E3W25 S3E3W245 S3E3W25 S3E		'Cư'cv''	'Cưcv'	'Cưcv'	'Cư'ċv''
"" "" "" "" "" "" "" "	"''Ewttgpv'Ceeqwpui"	" Ret viewret u"	5202; 04245'''	5302504245'''	5302504244'''	53@504243'
d0Ecuj "qp"j cpf "*Cu"egt \thqf "d{"\y g"	7 EwitgpvCeeqwpul 876; 8864 80,2 2029 d0Ecuj "qp"j cpf "*Cu"egt \https://def "d { "'y g" 20,7 "" "20,7 "" "30,46" "407: ""	" c0'Dcrcpegu'y kj "dcpmu"	1111	181	181	181
o cpci go gpv4" '20,7" '2076" '3046" '407: "	" o cpci go gpvt" "20,7"" "2076"" "3046"" "407: ""	" "/'Ewttgpv'Ceeqwpw"	'87Œ; '"'	'88054'"'	'80, 2'''	'2029'"
O cpci go gpv+	0 cpci go gpv+ 2t/7 2t/0 3t/40 4t/:	d0'Ecuj "qp"j cpf "*Cu"egt \khkgf "d{ "vj g"				
. 4.	"' Vqveri' '88060" '880 9" '! 066" '4087"		'20, 7'"'	'2076'"	''3046'''	'4 0 7: ' " '
101		" Vqvcn'	'88 ® 6'''	'880 9'''	' : B6'''	'4087'''
	··· · · · · · · · · · · · · · · · · ·	`	"	"	"	181

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69"



UGEVKOP'X<I GPGTCN'KPHQTOCVKQP"

 $Qwt"Eqo\ rcp{"y\ cu"qtki\ kpcm{"kpcqtr\ qtcvgf"qp"F\ gego\ dgt"}44."4239"cu"c"Rtkxcvg"Nko\ kgf\ "Eqo\ rcp{"kp"y\ g"pco\ g"qh"\ oCunqekcvgf"Eqo\ ycu"qtki kpcm{"kpcqtr\ qtcvgf"g"r\ tqxkikqpu"qh"y\ g"Eqo\ rcpkgu"Cev"4235"y\ kj "y\ g"Tgi\ kntct"qh"Eqo\ rcpkgu." EgpvtcnTgi\ kntcvkqp"Egpvtg"xkf g'EkP "W4: 34; Y D4239RVE4462230Uwdugs wgpvn{"t\ wtuvcpv"q"c"Ur\ gekcnTguqnwkqp"r\ cuugf" cv"y\ g"Gz\ vc/Qtf\ kpct{"I\ gpytcn!O\ ggvkpi"j\ gr" qp"Qevqdgt"46."4245."qwt"Eqo\ rcp{"y\ cu"eqpxgtvgf"Intqo\ "c"Rtkxcvg"Nko\ kgf" Eqo\ rcp{"y\ cu"eqpxgtvgf\ "hyeqtr\ qtcvkqp"eqpugs\ wgpvn{"t\ q"Eqpxgtukqp"y\ cu"kunwgf\ "qp"F\ gego\ dgt"3;\ ."4245"d{"y\ g"Tgi\ kntct"qh"Eqo\ rcp{"ku"W4: 34; Y\ D4239RNE4462230'} \end{"y\ g"Tgi\ rcp\ rcp{"y\ g"Tgi\ rcp\ rcp\ rcp\$

Hqt"f gvcknı"kp"tgrcvkqp"vq"vj g"kpeqtr qtcvkqp."Tgi knvgtgf "Qhhkeg"cpf "qvj gt"f gvcknı."r rgcug"tghgt"vq"vj g"ej cr vgt "vknrgf "õQwt'' J knvqt {'t'pf 'Egt vc kp'Qvj gt 'Eqtr qt c vg'O c vvgt uö"dgi kppkpi "qp"r ci g"336"qh'vj ku"F tchv'Rtqur gevvu0'

D	TKGH'EQORCP['CPF'KUWG'KPHQTOCVKQP"
Tgi kmt cvkqp'P wo dgt''	446223"
Eqtrqtcvg'' Kf gpvlllecvlqp''	W4: 34; Y D4239RNE446223"
Pwo dgt"	п
Fcvg'' qh' Kpeqtrqtcvkqp'' cu''	F gego dgt "44." 4239"
Rt kxcvg'Nko kvgf 'Eqo rcp{''	
Fcvg'' qh' Kpeqtrqtcvkqp'' cu''	F gego dgt '3; . "4245"
Rwdrle'Nko lsgf 'Eqo rcp{ ''	
Cfftguu'qh'Tgikungtgf''Qhhleg''	Cuj wk'Mj cpdgtkc"O cj guj vcrc"NR"421: 5168."Mqmcvc."Xkxgncpcpf cr wt."Uqwj "46"
('Wpk'/'K'	Reti epeu."Vj emstr wnst'O ej gusqre/'922363"Y gus'Dgpi en "Kpf ke0"
	Vgn "- ", 3/", : 52659923"
	G/o chr. hphqB cunqelcygf eqcygtu0lp"
	Y gdukg<'y y y @unqelcvgf eqcvgtu@p'''
Cfftgun' qh' Tgikuntct'' qh'	
Eqo rcplgu'''	Pk co "Remeg."4pf "O UQ Dwkrf kpi ."4pf "Hrqqt."45616."CUEDOTqcf."Mqmcvc/
	922242."Y guv'Dgpi cn0'
	Vgrx'255/44: 995; 2; 3"
	Hcz<255/44; 259; 7"
	Go chettqe(hqmcvc'B o ec() qx(lp"
F guli pc vgf 'UvqenlGzej cpi g''	Y gdukg<'y y y 0o ec0 qx0p" DUG'Nko kgf '*UO G'Rucvhqto 'qhiDUG'Nko kgf +''
r gun pevgi Ovqeniozej epi g	R'L'Vqy gtu. 'F cren'Utggy. 'Hqtv.'O wo dck'ó'622223. 'O cj ctcuj vtc. 'Kof kc0'
Kung'Rtqi tco o g''	KL vdy gitt. Felchowggv. Hit v O wo deko 022223. Oej etetij ve. Hi ko Kiuwg''[Qr gpu''] _"
Rung Requeet o g	Kuwg 'Engugu'qp<'] _"
Ej kgh'Hkpcpekcn'Qhhlegt''	Ot0Lcilk/Upij'Fjkmp'"
Lj ignrape pe k n Q n k g	Cfftgurk'Cuj wk'Mj cpdgtkc"O cj guj vcre"NR"421: 5168."Mqmcvc."Xkxgncpcpfcrwt."
	Uqwi "46'Reti epeu."Vj enwtr wnwt "O ej guvqre/"922363"Y guv "Dgpi en "Kof ke0"
	Vgn."- ", 3", : 52659923"
	Go clarenge cunque lo cunque lo cunque lo clarenge con clarenge con clarenge con clarenge con control con control con control
	Y gdukg<'y y y @uuqekcygfeqcygtu@p'"
Eqo rcp{" Ugetgwct{" cpf"	
Eqo rıkpeg'Qlillegt''	Cfftgurk"Cuj wki'Mj cpdgtkc"O cj guj vcnc"NR"421: 5168."Mqmcvc."Xkxgncpcpfcrwt."
	Uqwj "46"Rcti cpcu."Vj cmxtr wmxt"O cj guvqrc/922363"Y guv'Dgpi cn"Kof kc0"
	Vgn."- "; 3"; : 52659923"
	Go clare unque cuque eque eque eque eque eque eque
	Y gduksg<'y y y (cunqekcygf eqcygtu(lp'"

QWT'DQCTF'QHFKTGEVQTU'

F gvcknu'tgi ctf kpi "qwt "Dqctf "qh'F ktgevqtu'cu'qp" yj g'f cvg"qh'yj ku'F tchv'Rtqur gewu'ctg'ugv'hqtyj "kp" yj g'vcdrg'j gtgwpf gt<"

Pco g''	Fguli pevlqp''	Cf f tguu'	FIP"
Ici lk/'Ukpi j 'Fj kmqp''	O cpci kpi 'F ktgevqt''	3; 9." Fkco qpf " J ctdqwt" Tqcf." Dgj crc."	29; : 2663"
		Mqmcvc'922256."Y guv'Dgpi cn'Kpf kc"	
J ctdj clcp"Ukpi j vj gvj k"	Yjqng"Vkog"Fktgevqt"	3; ; ." Fkco qpf" J ctdqwt" Ocpf cn' Rctc."	3263867; "
		Dgj crc." Mqmcvc" 922256." Y guv" Dgpi cn"	
		Kpf kc"	



Pco g"	Fguli pevlqp''	Cfftguu''	FIP"
P cxpggv'Mcwt"	P qp/Gz gewkx g'F kt gevqt"	3; 9." Fko qpf " J ctdqwt" Tqcf." Dgj crc."	29; : 268: "
		Mqmcvc'922256"	
Ej gypc'I wr vc''	Cffkkqpcn' Kpfgrgpfgpv'	47'Ej kpct''Rctm'F gurkp{'"Vqy gt.''Hrcv'P q''7"	24434662"
	Fktgevqt"	D.'Mqmcvc'922379"	
Lc{ "Mwo ct"Uj cy "	Cffkkqpcn' Kpfgrgpfgpv'	9B" IT." Octj cwc" Fkej "Ncpg." 9"	2; 849757"
	Fktgevqt"	Uj {co r wmxt. "Dei j de ct. "Mqmeve" 922225"	
		Y guv'Dgpi cn'Kpf kc"	

 $\text{Hqt"c"f gevkrgf" 'r tqhkrg"qh'qwt"} F \text{ktgevqtu."tghgt"} \\ \tilde{o} \textit{Qwt'O cpci go gpvö"qp"r ci g"339"qh'vj ku'F tchv'Rtqur gewww0''} \\ \text{The properties of the properties$

IPXGUVQT'I TKGXCPEGU'

Kpxguvqtu'b c{'eqpvcev'vj g'Eqo rcp{'Ugetgvct{'cpf'Eqo rnkcpeg'QlHegt'cpf Iqt'vj g'Tgi kmtct'vq'vj g'Kunwg'cpf Iqt'' Ngcf'Ocpci gt'kp'ecug'qh'cp{'Rtg/Kunwg'qt'Rquv/Kunwg'tgncvgf'rtqdngo u'lnwej'cu'pqp/tgegkrv'qh'Ngvvgt'qh'Cnqvv gpv.'' pqp/etgfkv'qh'Cnqvvgf'Gs wkw{'Uj ctgu'kp'vj g'tgurgevkxg'dgpghkekct{'ceeqwpv'cpf'pqp/tgegkrv'qh'lnwpfu'd{'gngevtqpke'' oqfg0'

K9" vgto u" qh" UGDK Ektewet" UGDKI QEHF IF KN4 EKT IR H23: H4" f cvgf " Hgdtwct {" 37." 423: ." UGDK ektewet" UGDKI QEHF IF KN4 EKT IR H243 H6: 213 10 " f cvgf " O ctej " 38." 4243." cu" co gpf gf " r wtuwcpv" vq" UGDK ektewet" UGDKI QEHF IF KN4 IE KT IR H243 H792" f cvgf "Lwpg"4."4243 "cpf "uwdlgev"vq"cr r rlecdng"ncy ."cp{"CUDC"Cr r rlecpv"y j qug" Cr r rlecvlqp"j cu"pqv"dggp"eqpulf gtgf "hqt"Cmqvo gpv."f wg"vq"lckmtg"qp"j g"r ctv"qh"cp{"UEUD."tj cmi'j cxg"tj g"qr vlqp"vq"uggm' tgf tguucn"qh"y g"uco g"d{"tj g"eqpegtpgf" "UEUD"y kaj kp"tj tgg"o qpyi u"qh"tj g"f cvg"qh"htarkpi "qh"tj g"Gs wkx{"Uj ctgu0UEUDu"ctg" tgs wktgf "vq"tguqnxg"tj gug"eqo r nclpwi'y kaj kp"37" f c{u."hckhpi "y j kej "tj g"eqpegtpgf" "UEUD"y qwf"j cxg"vq"r c{"kpvgtguv"cv"tj g" tcvg"qh"37" "r gt"cppwo "hqt"cp{"f gnc{"dg{qpf "y ku"r gtlqf"qh"37" f c{u0"Hwty gt."tj g"kpxguvqtu"tj cmi'dg"eqo r gpucvgf "d{"tj g" UEUDu"cv"tj g"tcvg"j ki j gt"qh" "322"qt"37" "r gt"cppwo "qh"tj g"cr r rlecvlqp."dnjemkpi "qh"o qtg"co qwpv"tj cp"tj g"cr r rlecvlqp" co qwpv"tj g"f gnc qwpv"tj cp"tj g"cr r rlecvlqp" co qwpv"tj gm {"f gnc qwpu"hqt"y g"luco g"WRKcr r rlecvlqp."dnjemkpi "qh"o qtg"co qwpv"tj cp"tj g"cr r rlecvlqp" co qwpv"tj gm {"f gnc qwpu"hqt"y g"lvcy" ki j gt"ky guco g"WRKcr r rlecvlqp."dnjemkpi "qh"o qtg"co qwpv"tj cp"tj g"cr r rlecvlqp" co qwpv"tj gm {"f gnc qwpu"hqt"y g"lvcy" tlycy" gm {"f gnc qwpu"hqt"y g"lvcy" tlycy" tlycy" gm {"f gnc qwpu"hqt"y g"lvcy" tlycy" t

FGVCKNUQHMG['KPVGTOGFKCTKGURGTVCKPKPI 'VQ'VJKUKUUVG'QHQWT'EQORCP["

NGCF'O CP CI GT'QH'VJ G'RUWG''	TGI KVTCT'VQ'VJ G'KUWG''
I TGVGZ'EQTRQTCVG'UGTXÆGU'NKO KVGF''	DN UJ CTG'UGTXNEGURTKXCVG'NKO KVGF''
C/623."Hnqqt"6yj."Rnqv"HR/838."*RV+."P co cp"O lf vqy p."	U8/4."8yj "Rkppcerg"Dwukpguu'Rctm"Ocjcmcrk'Ecxgu'Tqcf."
Ugper evk'Der ev'O eti . 'P get 'Kof kedwmu. 'F ef et '*y +. 'F grkurg''	pgzv'vq"Cj wtc"Egpvtg."Cpfj gtk'Gcuv."O wo dck/"6222; 5."
Tqcf." F grkurg" Tqcf." O wo dck" O wo dck" O cj ctcuj vtc."	O cj ctcuj vtc."Kpf kc"
Kpf kc."6222350"	VgdP q0₹ ; 3"6"44"6"8485": 422 "
Vgr0P q0 <-; 3"; 8754"6; : 85""	Hcz'Pq0 ; 3"6"44"6"8485": 4; ; ''</th
Gockan≺kphqBitgygzitqwr0eqo"	Go ckn/k qB dki uj ctgqpnkpg@qo ''
Y gdulsg<'y y y (1 tgygzeqtrqtcyg@qo "	Kpxgunqt'I tlgxcpeg'Go ckn≺'
Eqpwev'Rgt uqp <'O t0'Ctxkpf 'J ctrcmc''	kpxguvqtBdkiujctgqpnkpg@eqo''
UGDKT gi kwt c vkqp 'P q0 ≮ R P O 222234399"	Y gduksg<'y y y 0dki uj ctgqpnkpg0eqo''
EKP <\notation \text{N96}; ; ; O J 422: RNE4: : 34: "	Eqpvcev'Rgt uqp<'Ot0'Xkpc{cm'Oqtdcrg"
	UGDKT gi kmt cvkqp'P q0K kP T2222235: 7"
	EIP <"W;;;;;OJ 3;;6RVE298756"
NGI CN'CFXKQT'VQ'VJ G'KUWG''	UVCVWQT['CWF KVQT'QH'VJ G'EQO RCP[''
Ngz 'Cuwwg'Cf xqecvgu'('Ngi criEqpuwncpvu''	O InOLO R'Cunqekcvgu0'Ej ct vgt gf 'Ceeqwpvcpvu'
4" J ctg" Utggv." 3uv" hrqqt." Qhhleg" pq" 55." P keeq" J qwug."	4pf" Hingqt." Tele" Uwdqfj" Ownkem' Uswetg." Dqyde et"
Mqmcvc'922223."Y guv'Dgpi cn'Kpf kc0'	Mqmevc'922235."Y guv'Dgpi cn'
VgrlPq&- ; 3"; : 5229; 785"	VgrlP q0<-! ; 3"; : 5254: 994"



G/o cknthqmcvcB rgzcuwwg@eqo ."cf xcf wwcB i o ckn@eqo "	G/o clarko cplaj B lo r cuaqelevgu@qo "
Eqpwev'Rgt uqp<'O t0Ctpcd'F wwc''	Eqpvcev'Rgtuqp<0t00cpkij 'Icfkc''
	O go dgt uj kr 'P q0<2 7; 899''
	Hto 'Tgi kmtcvkqp'Pq0K546457G"
	Rggt ' T gxlgy ' P q <23679: "
DCPMGT'VQ'VJ G'EQO RCP["	DCPMGTU'VQ'VJ G'KUWG'I'URQPUQT'DCPM'
] _"] _"
"	n n

[,] Vj g'Depngt '\q'\j g'Kuwg'¾Urqpuqt''Depm¦'uj emldg''errqkpvgf ''rtkqt'\q'Hokpi ''qhl\j g'Fteh/Rtqurgevwu'y kj '\j g'TqEO'

EJ CPI GUIP'CWFKVQTUFWTIPI 'NCUV'VJ TGG'HIP CPEKCN'[GCTU'

Gzegr v'cu'o gpwlqpgf "dgrqy". 'y gtg'j cu'dggp"pq"ej cpi g'lkp"y g'cwf kxqtu'qh'qwt "Eqor cp{ "f wtkpi "y g'rcuv'5"{ gctu<"

Ut0'	Fcvg'qhEj cpi g''	Ht qo''	Vq''	Tgcupp'hpt''
Pq"				Ej cpi g''
30'	Fcvgʻqh'Tgukipcvkqp<'	Uwxcpmct" Jenfet" ("	LO R'Cunqekcvgu0'''	Rtg/qeewrcvkqp"
	Ugr vgo dgt"33."4245"	Cunqelc vgu0''	Ej ctygtgf 'Ceeqwpycpyu."	qp'y kyj "
	"	Ej ctygtgf 'Ceeqwpycpyu."	7." Tele" Uwdqfj" Ownkem"	qyj gt"
	Fcvg'qh'Crrqkpvogpv≺'	3" Depeo enk" Peumet" Tqef."	Uswetg." 4pf "Hrqqt" Mqmcvc"	cuuki po gpvu"
	Ugr vgo dgt"52."4245"	Dgj crc."Mqmevc"922282"Y guv"	922235."Y guv'Dgpi cn'	
		Dgpi cn'	VgriP q0<-! ; 3"; : 5254: 994"	
		VgrlP Q0 <;: 5862894; "	G/ockax''	
		G/o ckn<	o cpkuj B lo r cuuqekcvgu@eqo ''''	
		ujacuuqBtgfkhhocknoeqo'''	Eqpweev' Rgt uqp<' Ot0'	
		Eqpvcev'' Rgt uqp<' Ot0'	Ocpkuj "Icfkc"	
		Uwxcpmct"J cnf ct"	O go dgt uj kr 'P q0<2 7; 899''	
		O go dgt uj kr 'P q0 <282; 28"	Hkto "Tgikuxtcvkqp"Pq0<"	
		Hkto" Tgikuxtcvkqp" Pq0<'	546457G"	
		2547: 87G''	Rggt 'Tgxlgy 'Pq<'2 3679: "	

UGNH/EGTVHHKGF'U PFHECVG'DCPMU'

Vj g"hkn"qh"dcpmn"j cv"j cxg"dggp"pq\khkgf "d{"UGDK'\q"cev"cu"UEUDu"hqt"\j g"CUDC"r tqeguu"ku"r tqxkf gf "qp"\j g"y gduk\g"qh" y g" UGDK' *j wr u
dly y y 0ugdk0 qx0\p lugdky gd lq\j gt lQ\j gtCevkqp0f qAf qTgeqi pkugf Hr k? {gu(kpvo kf?56=" j wr u
dly y y 0ugdk0 qx0\p lugdky gd lq\j gt lQ\j gtCevkqp0f qAf qTgeqi pkugf Hr k? {gu(kpvo kf?57+"cpf "wr f cvgf "htqo "vko g" vq" vko g0" Hqt" f gvckru" qp" F guki pcvgf " Dtcpej gu" qh" UEUDu" eqmgevkpi " \(\tilde{y} \) g" Dkf/ewo /Crrnkecvkqp" Hqto u." tghgt" vq" \(\tilde{y} \) g" cdqxgo gpvkqpgf "UGDK'\tkpn0'

 $\label{thm:cupqwingf} \begin{tabular}{l} Hwt ij gt." cu" pqvkhlgf" d{" UGDK xkf g" ku" ektewrct" pq0' UGDKI QEHF IF KV4 EKT IR 1423; 1: 7" f cvgf " Lwn{" 48." 423; =" vj g" cr r necvkqpu' vj tqwi j "WRKlp" kRQu'ecp" dg" o cf g'qpn{" vj tqwi j "vj g"UEUDu' l'o qdkrg" cr r necvkqpu' vj qug" pco g" cr r gctu'qp" vj g" UGDK y gdukg" y y Qugdki qx0' lp" cv' vj g" lqmqy kpi "r cvj <" J qo g" >> "Kpvgto gf kctkgu" l'O ctngv' Kpht cunt wewt g" Kpurkwwkqpu" >> " T geqi pkj gf 'lpvgto gf kctkgu' >> 'Ugnh' Egtvkhkgf 'U{ pf kecvg' Dcpmu' grki kdng' cu' 'Knuwgt' 'Dcpmu' lqt' WKK' |$

Kpxguvqt"uj cm'gpuwtg'vj cv'y j gp"crrn(kpi "kp"KRQ"wukpi "WRK"vj g"pco g"qh'j ku"Dcpm'crrgctu"kp"vj g"hkuv'qh"UEUDu'f kurnc{gf" qp"vj g"UGDKy gdukvg"y j kej "ctg'hkxg"qp"WRKOHwtvj gt."j g"l'uj g"uj cm'cnuq"gpuwtg"vj cv'vj g"pco g"qh'vj g"crr"cpf 'vj g"WRKj cpf ng" dgkpi "wugf 'hqt"o cmkpi "vj g"crrnkecvkqp"ku"cnuq"crrgctkpi "kp"vj g"chqtguckf"hkvvO""

U PFÆCVG'UEUD'DTCPEJ GU'

 $\label{thm:control_control_control} \begin{tabular}{l} $K_0^* = K_0^* - K_0^$

IPXGUVQTU'DCPMU'QT'KUWGT'DCPMUHQT'WRK'

Kp"ceeqtfcpeg"ykj "WRK'Ektewrctu."TKKu"Crrn{kpi "xkc"WRK'O gej cpkno "o c{"crrn{"yi tqwi j "yi g"UEUDu"cpf "o qdkrg" crrnkecvkqpu." y j qug" pco gu" crrgct" qp" yi g" y gdukvg" qh" UGDK'



"j wrudly y y ûngdkû qxûp lugdky gd lqvj gt lQvj gt Cevkqpû qAf qTgeqi pkugf Hrk? { gu(kpvo Kr?63+."cu" wrfcvgf "htqo "vko g" vq" vko g0'C"nkuv'qh''UEUDu''cpf "o qdkng"crrnkecvkqpu."y j kej "ctg"nkxg"hqt"crrn(kpi "kp"rwdnke"kuuwgu''wukpi "WRK'o gej cpkuo "ku" rtqxkf gf "cu";Cppgzwtg'Cø'vq''y g'UGDKektewnct."dgctkpi "pwo dgt'UGDKNJ Q1EHF IF KN41EKT1R1423; 1:7'fcvgf 'Lwn('48.'423; 0'

TGI KUVGTGF'DTQMGTU'

TGI KUVTCT'CPF'UJ CTG'VTCPUHGT'CI GPVU''

Vjg"nkun'qh''yjg"TVCu"grkikdng"vq"ceegrv'Crrnkecvkqpu"hqtou"cv''yjg"Fgukipcvgf"TVC"Nqecvkqpu."kpenwfkpi"fgvcknu'uwej"cu"cfftguu."vgngrjqpg"pwodgt"cpf"g/ockn"cfftguu."ctg"rtqxkfgf"qp"yjg"ygduksg"qh"yjg"UGDK'qp"jwru√dyyy0ngdk0qx0oplugdkygdlqyjgt1QyjgtCevkqp0fqAfqTgeqipkugf?{gu."cu"wrfcvgf"htqo"vkog"vq"vkog0'

EQNNGEVIPI 'F GRQUIVQT['RCTVIE IRCPVU'

Vj g"rkuv"qh"vj g"EFRu"grki kdng"vq"ceegr v"CUDC"Hqto u"cv"vj g"F guki pcvgf "EFR"Nqecvkqpu."kpenwf kpi "f gvcknu"uwej "cu"pco g" cpf " eqpvcev" f gvcknu." ku" r tqxkf gf " qp" vj g" y gduksg" qh" UCDK cv" j wr u
dly y y 0ugdk0 qx0xp lugdky gd lqvj gt lQvj gtCevkqp0f qAf qTgeqi pkugf Hr k? { gu(kpvo Kt?3; " lqt" PUFN" EFRu" cpf " cv" j wr u
dly y y 0ugdk0 qx0xp lugdky gd lqvj gt lQvj gtCevkqp0f qAf qTgeqi pkugf Hr k? { gu(kpvo Kt?3; " lqt" PUFN" EFRu" cpf " cv" j wr u
dly y y 0ugdk0 qx0xp lugdky gd lqvj gt lQvj gtCevkqp0f qAf qTgeqi pkugf Hr k? { gu(kpvo Kt?3; " lqt" EFUN"EFRu"cu"wr f cvgf " ltqo "\ko g0'Vj g"rkuv"qh"dtcpej gu"qh"vj g"UEUDu"pco gf "d{"vj g"tgur gevkxg"UEUDu"vq"tgegkxg"f gr quksu"qh"vj g"Dkf "ewo " Cr r rkecvkqp"Hqto u"ltqo "vj g"F guki pcvgf "Kpvgto gf kctkgu"y kn"dg"cxckrcdng"qp"vj g"y gduksg"qh"vj g"UGDK**y y y 0ugdk0 qx0xp+" cpf "\wr f cvgf "ltqo "\ko g"\q'\ko g0'

DTQMGTUVQ'VJ G'KUUWG''

Cm'o go dgtu'qh'y g'tgeqi pk gf 'uvqem'gzej cpi gu'y qwrf 'dg''grki kdrg''\q''cev'cu''Dtqngtu'\q''y g''Kuvvg0'

UVCVGO GP V" QH' TGURQP UIDININ [" QH' VJ G" NGCF" O CP CI GT" 1' UVCVGO GP V" QH' IP VGT" UG' CNNQE CVIQP 'QHTGURQP UIDININ IGU'

 $\label{thm:condition} \begin{tabular}{l} U peg''I tgvgz''Eqtr qtcvg''Ugtxkegu''Nko kgf''ku''y g''uqng''Ngcf''O cpci gt''vq''y ku''Kuwg."c''uvcvgo gpv''qh''kpvgt''ug''cmqecvkqp''qh'' tgur qpukdkrkkgu''co qpi uv'Ngcf''O cpci gt''ku''pqv''tgs wktgf 0'' \end{tabular}$

ETGF KV"T CVKP I "

Vj ku'dgkpi "cp'Kuuwg'qh'Gs wkx{ "Uj ctgu."vj gtg'ku'pq'tgs wktgo gpv'qh'etgf kv'tcvkpi "hqt"vj g'Kuuwg0'

IRQ'I TCFIPI '''

Ukpeg"'y g"Kuwg"ku'dgkpi "o cf g"kp"\gto u'qh"Ej cr \gt'KZ "qh"\y g"UGDK*KEFT+"Tgi wrc\kqpu."423: ."\y gtg"ku'pq'tgs wktgo gpv'qh" cr r qkp\kpi "cp"RQ"I tcf kpi "Ci gpe{0'

GZRGTV'QRIP KQP"

Gzegr v'cu'uvcvgf 'dgrqy . 'qwt 'Eqo r cp{ 'j cu'pqv'qdvckpgf 'cp{ 'gzr gtv'qr kpkqpu<''

Qwt"Eqo r cp{"j cu"tgegkxgf"y tkwgp"eqpugpv"f cvgf "F gego dgt"43."4245"htqo "Rggt"Tgxkgy "Cwf kqt"pco gn{."O lu0'IO R" Cuuqekcvgu. "Ej ctvgtgf "Ceeqwpcpvu."vq"kpenwf g"y gkt"pco g"cu"tgs wktgf "wpf gt"Ugevkqp"48*7+"qh"y g"Eqo r cpkgu"Cev'4235" tgcf 'y kyj 'UGDKNEF T"Tgi wcvkqpu'kp'y ku'F tchv'Rtqur gewu'cu"cp'ögzr gtvö'cu'f ghkpgf 'wpf gt"Ugevkqp"4*5: +"qh"y g'Eqo r cpkgu" Cev'4235"vq"y g"gzvgpv"cpf "kp"tgur gev'qh"ku"*k+"gzco kpcvkqp"tgr qtv'f cvgf "F gego dgt"48."4245"qp"qwt"Tguvcvgf "Hlpcpekcn" Kphqto cvkqp="cpf"*kk+"ku'tgr qtv'f cvgf "F gego dgt"48."4245"qp"y g"uvcvgo gpv'qh'Ur gekcn'Vcz "Dgpghku'kp"y ku'F tchv'Rtqur gewu0' Chqtgo gpvkqpgf "eqpugpvu'j cxg'pqv'dggp'y kyj f tcy p"cu'qp"y g'f cvg'qh'y ku'F tchv'Rtqur gewu0'

J qy gxgt."yj g"vgto "õgzr gtvö"uj cmˈpqvˈdg"eqpuʌtwgf "vq"o gcp"cp"õgzr gtvö"cu'f ghlpgf "wpf gt"vj g"WUUUgewtkkgu'CevU"

VTWUVGGU''

Vj ku'ku'cp'kuuwg'qh'gs wkv{'uj ctgu'j gpeg'crrqkpvo gpv'qh'vtwuvggu'ku'pqv'tgs wktgf0'

73"



FGDGP VWTG'VTWUVGGU'

 $Cu''y' ku''ku''cp''kuuwg''qh''Gs wkw \{''Uj\ ctgu.''y'\ g''cr\ r\ qkpvo\ gpv'qh''F\ gdgpwxtg''xtwuxggu''ku''pqv'tgs wktgf\ 0''$

O QPKVQTKPI 'CI GPE["

Ulpeg"yi g"r tqeggf u"htqo "yi g"Htguj "Kuwg"f qgu"pqv"gzeggf "32.222"ncnj u"hp"ygto u"qh"Tgi wcwlqp"484"¾3+"qh"yi g"UGDKKEFT" Tgi wcwlqpu. "qwt 'Eqo r cp{ 'ku"pqv"tgs wktgf 'vq"crrqkpv"c"o qpkxqtkpi "ci gpe{ 'hqt"yi g"r wtrqugu"qh"yi ku"Kuwg0J qy gxgt. "cu"r gt" Ugevkqp"399"qh"yi g"Eqo r cpkgu"Cev."4235."yi g"Cwf kv"Eqo o kwgg"qh"qwt "Eqo r cp{."y qwrf "dg"o qpkxqtkpi "yi g"wkrk| cvkqp"qh" yi g"r tqeggf u"qh"yi g"Kuwg0"

I TGGP'UJ QG'QRVKQP''

 $P\,q'I\,\,tggp'Uj\,\,qg'Qr\,\,k\!qp'k\!u'\!cr\,r\,\,n\!ecdng'h\!qt''\!ij\,\,k\!u'\!K\!u\!w\!g0'$

CRRTCHUCN'CI GPE["

 $Qwt"Eqo\ r\ cp\{"j\ cu"pqv"cr\ r\ qkpvgf"cp\{"cr\ r\ tckukpi"ci\ gpe\{"hqt"cr\ r\ tckucn"qh"vj\ g"Rtqlgev0"\ pv"cr\ r\ qkpvgf"cr\ r\ qkpvgf"cr\$

HKNIPI 'OH'KUWG'F OE WO GP V''

 $\label{thm:condition} Vj\ g''F\ tchv''Rtqur\ gewu''y\ km''pqv''dg''hkrgf''y\ ksj\ ''UGDK''pqt''y\ km''UGDK'kuwg''cp{ ''qdugtxcwlqp''qp''yj\ g''Qlhrgt''F\ qewo\ gpv''lp''\ygto\ u'' qh'Tgi\ wcwlqp''468''qh''UGDK''kEFT+:''423: 0U\ qy\ gxgt.''r\ wtuwcpv'\q''Uwd/Tgi\ wcwlqp''*7+''qh'Tgi\ wcwlqp''468.''yj\ g''eqr\ {''qh'Ftchv''}\ Rtqur\ gewu''uj\ cm'cmq''dg''hwtpkuj\ gf\ ''vq''yj\ g''dqctf''lp''c''uqhv''eqr\ {0'''}\$

Rwtuwcpv' vq" UGDK Ektewrct" P wo dgt" UGDKI Q IEHF IF KN3 IEKT IR1423: 1233" f cvgf " Lcpwct { "3; . "423: . "c" eqr { "qh" yj g" Rtqur gewu'y km'dg'hkrgf "qprhpg" yj tqwi j "UGDKKpvgto gf kct { "Rqtvcn'cv'j wr u<1lukr qtvcnDigdk0 qx0p0"

C"eqr {"qh"yj g"Rtqur gewu"crqpi "y kj "yj g"f qewo gpwl"tgs wktgf "\q"dg"hkrgf "wpf gt"Uge\kqp"48"("54"qh"yj g"Eqo r cpkgu"Cev." 4235"y kni'dg"f grkxgtgf "\q"yj g"Tgi kntct"qh"Eqo r cp{."Mqmrvc"cv"P k co "Rcrceg."4pf "O UQ"Dwkrf kpi ."4pf "Hrqqt."45616." CAEDOTqcf ."Mqmrvc/922242."Y guv'Dgpi cn0'

V[RG'QH'KUUWG"

Vj g'r tgugpv'Kuwg'ku'eqpukf gtgf '\q'dg'322' 'Hkzgf 'Rtkeg'Kuwg0'

Y KVJ FTCY CN'QH'VJ G'KUWG''

Kp"ceeqtf cpeg"y kj "'y g"UGDK*KEFT+'Tgi wrc\kqpu."qwt"Eqo r cp{"kp"eqpuwnc\kqp"y kj "Ngcf"O cpci gt."tgugtxgu"y g"tki j v' pqv''vq"r tqeggf "y kj "'y ku"kuwg"cv''cp{"vko g"chygt"y g"Kuwg"Qr gpkpi "F cvg."dw''dghqtg"qwt"Dqctf "o gg\kpi "hqt"Cmqvo gpv' y kj qww''cuuki pkpi 'tgcuqpu''y gtgqh0"

Kti'qwt "Eqorcp{"y kaj ftcy u''aj g"Knuwg"chwgt"y g"Knuwg"Equllpi "Fcvg."y g"y kmii kxg"tgcuqp"y gtgqh'y kaj kp"wy q"fc{u'd{"y c{"qh" c"r wdrke "pqvkeg"y j kej "uj cmi'dg"r wdrkuj gf "kp"y g"uco g"pgy ur cr gtu'y j gtg'y g"r tg/knuwg"cfxgtvkugo gpvu'y gtg'r wdrkuj gf 0'

Hwt j gt. "j g"Uqem'Gzej cpi gu'uj cm'dg"lphqto gf "r tqo r vl "lp"j ku'tgi ctf "cpf "j g"Ngcf "O cpci gt."j tqwi j "j g"Tgi kutct"vl" j g"Kuwg. "iuj cm'pqlhl "j g"UEUDu'vl"wpdrqem'j g"Dcpm'Ceeqwpw"qh'iy g"CUDC "Crrrlecpw"y kj kp"qpg"Y qtmlpi "F cl"htqo "iy g"f cvg"qh'tgegkr iu'qh'twej "plvhleclqpl0"

Kp"ecug"qwt"Eqo r cp{"y kj f tcy u"yj g"Kuwg"chygt"yj g"Kuwg"Enquhpi "F cvg"cpf "uwdugs wgpvn{"f gekf gu"vq"wpf gtvcmg"c"r wdrhe" qhhgthpi "qh"Gs wkx{ "Uj ctgu."qwt"Eqo r cp{"y km"hkrg"c"htguj "Qhhgt"F qewo gpv"y kj "yj g"Uvqem"Gzej cpi g"y j gtg"yj g"Gs wkx{ "Uj ctgu"o c{"dg"rtqr qugf "vq"dg"hkrwgf 0'

 $P \ qw \ kj \ uvcpf \ kpi \ "vj \ g"hpcn" \ Nkukpi \ "cpf \ "Vtcf \ kpi \ "Crrtqxcn"qh'vj \ g"Uqem' \ Gzej \ cpi \ g."y j \ kej \ "vj \ g"Eqo \ rcp{ "vj \ cm"crrn{ 'hqt"chygt 'Cmqvo \ gpv0 \ kp' \ vgto u"qh'vj \ g"UGDKT gi \ wcvkqpu." \ P \ qp/Tgvckn"Crrnecvku" \ uj \ cm"pqv"dg"cmqy \ gf \ "vq"y \ kej f \ tcy \ "vj \ gkt"Crrnecvkqp"chygt"vj \ g"Kuwy"Emukpi \ "F \ cvg0"$

WPFGTY TKVKPI 'CI TGGO GPV''

Vj ku'Kuwg'ku'322' "Wpf gty tkwgp0'Vj g"Wpf gty tkkpi "ci tggo gpv'ku'f cvgf "F gego dgt'45."4245 "Rwtuwcpv'vq"vj g"vgto u'qh'vj g" Wpf gty tkkpi "Ci tggo gpv'vj g"qdrki cvkqpu'qh'vj g"Wpf gty tkvgtu'ctg"ugxgtcn'cpf "ctg"uwdlgev'vq"egtvckp"eqpf kkkqpu'ur gekhkgf "vj gtglp0"



Vj g"Wpf gty tkgt" Jcxg"kpf kecvgf "kwi"kpvgpvkqp" vq" wpf gty tkg" vj g"hqmqy kpi "pwo dgt" qh'ur gekhkgf "ugewtkkgu" dgkpi "qhhgtgf" vj tqwi j "vj ku" Kuwg<"

Fgvcku'qh'\jg'Wpfgtytksgt''	Pq0qhhij ctgu' wpfgtytkwgp''	Co qwpv'' Wpf gt y t kwgp'' * 'kp'Ncnj +''	' 'կh'tj g'Vqvcn' Kunvg'Ut g'' Wpf gt y t kvgp''
Itgvgz 'Eqtrqtcvg' Ugtxlegu' Nkokvgf"] _'"'] _'"'] _'"'
C/623." Hrqqt" 6yj ." Rrqv" HR/838." *RV+." P co cp"			
Olf vqy p. "Ugper cvk" Der ev "Oeti. "Pget "Kof kedwm."			
Fcfct"*y +: "Fgrkurg"Tqcf. "Fgrkurg"Tqcf. "O wo dck/			
622235. 'O cj ctcuj vtc. ' K of kc0"'			
VgdPq0 \(\tilde{-}; 3"; 8754"6; : 85"			
GocknadkphqBitgvgzitqwr0eqo'''			
Y gdukg<'y y y 0 tgwgzeqtrqtcvg0eqo "			
Eqpvcev'Rgt uqp<'Ot0'Ctxkpf 'J ctrcmc'''			
UGDKT gi kwt c vkqp 'P q0 K'RP O 222234399"			
EKP <\n96; ; ; OJ 422: RNE4: : 34: "			
I tgvgz'Uj ctg'Dtqnlpi 'Nko lsgf "] _'"'] _'"'] _'"'
C/623."Hrqqt"6yj."Rrqv"HR/838."*RV+."P co cp"			
Okf vqy p. "Ugper evk"Der ev"Oeti. "Pget "Kpf kedwmu."			
F cf ct "*y +. 'F grkurg'Tqcf . 'F grkurg'Tqcf . 'O wo dck'/"			
622235. 'O cj ctcuj vtc. "Kpf kc"			
Vgr0Pq0<!--</b--> ; 3'244'8; 52: 724125"			
Gockn≪EqornkcpegBitgvgzdtqmkpi@eqo"			
Eqpvcev'Rgt uqp<'O t0F ggr cm'P cxkpej cpf tc''Uj cj "			
UGDKT gi kmt cvlqp'P q <kp\ 222388;="" 56"<="" td=""><td></td><td></td><td></td></kp\>			
Octmgv' Ocngt'' Tgikuxtcvkqp'' Pq0≺'			
UO GO O 283984: 284234''			
VQVCN''	Wr vq'6.38.622''] _'''] _'"'

Cu'r gt "Tgi wrcwlqp"482*4+"qh"UGDK*KEFT+"Tgi wrcwlqpu."423: ."vj g"Ngcf "O cpci gt"j cu'ci tggf "\q'wpf gty tkg"\q'c"o lpko wo "gz vgpv'qh"37' "qh'vj g"Kuwg"qw'qh"ku"qy p"ceeqwpv0'Kp"vj g"qr lpkqp"qh'vj g"Dqctf "qh'F ktgevqtu"*dcugf "qp"egtwlhecvg"i kxgp"d{" y g"Wpf gty tksgtu+."vj g"tguqwtegu"qh"vj g"cdqxg/o gpvkqpgf "Wpf gty tksgtu"ctg"uwhhkekgpv"vq"gpcdrg"vj go "vq"f kuej cti g"vj gkt" tgur gevkxg"wpf gty tkskpi "qdrki cvkqpu"lp"hwn0'Vj g"cdqxg/o gpvkqpgf "Wpf gty tksgtu"ctg"tgi kuvgtgf "y ksj "UGDK'wpf gt"Ugevkqp" 34*3+"qh'vj g"UGDKCev'qt"tgi kuvgtgf "cu'dtqnrgt"y ksj "yj g"UqeniGzej cpi g0"

Cmqeckqp"co qpi "ý g"Wpf gty tksgtu"o c{"pqv"pgeguuctkn{"dg"kp"r tqr qtkqp"vq"ý gkt"wpf gty tkskpi "eqo o ko gpw"ugv"hqtý "kp" y g"vcdrg"cdqxg0'P qw kij uvcpf kpi "ý g"cdqxg"vcdrg."ý g"Ngcf"O cpci gt"uj cm'dg"tgur qpukdrg"hqt"gpuwtkpi "r c{o gpv"y kij " tgur gev"vq"Gs wkx{"Uj ctgu"cmqecvgf "vq"kpxguvqtu"r tqewtgf "d{"ý go 0'Kp"ý g"gxgpv"qh"cp{"f ghcwn/kp"r c{o gpv"y g"tgur gevkxg" Wpf gty tksgt."kp"cf f kkqp"vq"yj gt "qdrki cvkqpu"f ghkpgf "kp"yj g"wpf gty tkskpi "ci tggo gpv."y km'cnuq"dg"tgs wktgf "vq"r tqewtg" I" uwduetkdg"vq"Gs wkx{"Uj ctgu"vq"yj g"gzvgpv"qh"yj g"f ghcwnyf"co qwpv0'Ki"yj g"Wpf gty tksgt*u+"hcknu"vq"hwrhkrl'ku"wpf gty tkskpi "qdrki cvkqpu"cu"ugv"qw"kp"yj g"Wpf gty tkskpi "Ci tggo gpv."yj g"Ngcf"O cpci gt"uj cm'hwrhkrl'yj g"wpf gty tkskpi "qdrki cvkqpu"kp" ceeqtf cpeg"y kij "yj g"r tqxkukqpu"qh"yj g"Wpf gty tkskpi "Ci tggo gpv0'

FGVCKNUQH'VJ G'O CTMGV'O CMRPI 'CTTCPI GO GPV'HQT'VJ KUKUWG''

Qwt'Eqo r cp{'j cu'gpvgtgf 'kpvq'O ctngv'O cnkpi 'Ci tggo gpv'f cvgf 'F gego dgt'45."4245"y kyj 'Vj g'Ngcf 'O cpci gt'cpf 'O ctngv'O cnkpi <" " "

Vj g'f gvcku'qh'O ctngv'O cngt 'ctg'ugv'hqtvj 'dgnqy <'

Pco g''	I tgygz"Uj ctg"Dtqmkpi "Nko kygf"
Cfftguu'	C/623."Hnqqt"6yj."Rnqv"HR/838."*RV+:"P co cp"O lf vqy p."Ugpcr cvl"Dcr cv"O cti."
	Pgct"Kpfkcdwmu."Fcfct"*y +:"Fgrkurg"Tqcf."Owodck"/"622235."Ocjctcuj vtc."
	Kpf kcO'
VgrlPq0'	-; 3"244"8; 52: 724125"
Go ckt'	EqornkpegBitgygzdtqmkpi@eqo"
Eqpwev'Rgt uqp''	Ot0FggrcmPcxkpejcpftc"Ujcj"
EKP"	W87; 22O J 4232RNE4: ; 583"
UGDKT gi kwt cykqp'P q0'	№ \ 222388; 56"
Oct ngv'O cngt 'Tgi kwt cvkqp'P q0'	UO GO O 283984: 284234"
*UO G'Ugi o gpv'qh'DUG+''	



 $I tgwgz "Uj ctg" Dtqnlpi "Nko kgf". "tgi knytgf" y kj "UO G"Rncvlqto "qh" DUG" Nko kgf "y kni'cev'cu" y g"O ctngv'O cngt" cpf "j cu" ci tggf "\q'tgegkxg" qt "f grlxgt" y g"ur gekhlyf "ugewtkkgu" lp "y g"O ctngv'O cnlpi "r tqeguu" lqt "c" gtlqf "qh" y tgg" { gctu" ltqo "y g"f cvg" qh"hknkpi "qh" qwt "Gs wkw ("Uj ctgu" qt "hqt" c" r gtlqf "cu" o c { "dg" pqwlhlyf" d { "co gpf o gpv' \q" UGDK* LEFT+ "Tgi wncwlqpu0" }$

Hqmqy kpi 'ku'c'uwo o ct{'qh'\j g'ng{'f gvckru'r gtvckpkpi '\q'\j g'O ctngv'O cmkpi 'Cttcpi go gpv<'''

- c+ Vj g"O ctngv'O cngt"uj cm'dg"tgs wktgf "vq"r tqxkf g"c"4/y c{"s wqvg"hqt"97' "qh''vj g"vko g"kp"c"f c{0'Vj g"uco g"uj cm'dg" o qpkqtgf "d{"vj g"Uqem'Gzej cpi g0'Hwtvj gt."vj g"O ctngv'O cngt"uj cm'kphqto "vj g"Uqem'Gzej cpi g"kp"cf xcpeg'hqt"gcej "cpf "gxgt{"drcem'qwv'r gtkqf 'y j gp''vj g"s wqvgu'ctg"pqv'dgkpi "qhhgtgf "d{"vj g"O ctngv'O cngt0'
- d+ Vj g"o kpko wo "f gr yj "qh"yj g"s wqvg"uj cm'dg" "3022"Ncnj u0J qy gxgt."yj g"kpxguvqtu"y kjj "j qnf kpi u"qh"xcnwg"nguu"yj cp" "3022"Ncnj u"uj cm'dg"cmqy gf "vq"qhhgt"yj gkt"j qnf kpi "vq"yj g"O ctngv"O cngt"kp"yj cv"uetkr "r tqxkf gf "vj cv"yj g{ "ugml'yj gkt" gp\ktg"j qnf kpi "kp"yj cv"uetkr "kp"qpg"nqv"cnqpi "y kjj "c"f genctc\kqp"\q"yj g"ghhgev\vq"yj g"ugmkpi "dtqngt0"
- e+ Chạt "c'r gtkqf "qh'ỳ tgg"*5+"o qpỳ u'htqo "ý g"o ctngv'o cnhọi "r gtkqf ."ý g"o ctngv'o cngt "y qwf "dg"gz go r vgf "\q"r tqxkf g" s wq yg"kh" y g"Uj ctgu"qh"o ctngv'o cngt "kp"qwt "Eqo r cp{ "tgcej gu" q "47" "% penwf kpi "y g"7" "qh"Gs wkw{ "Uj ctgu"qh" y g" Kuwg+0'Cp{ "Gs wkw{ "Uj ctgu"cnqwgf "\q"O ctngv'O cngt "wpf gt "y ku" Kuwg"qxgt "cpf "cdqxg"47" "qh"Gs wkw{ "Uj ctgu"y qwf" pqv'dg"vcngp "kp" \q"eqpukf gtcvkqp"qh"eqo r wkpi "y g"y tguj qnf "qh"47" 0'Cu'uqqp"cu'y g"Uj ctgu"qh"o ctngv'o cngt "kp"qwt" Eqo r cp{ "tgf weg"\q"46" ."yj g"o ctngv'o cngt "y kn'tguwo g"r tqxkf kpi "4/y c{ "s wqvgu0"
- $f+ Vj \ gtg'tij \ cm'dg'pq'gzgo \ r \ dqp''T'yi \ tguij \ qrf \ 'qp'f \ qy \ pulf \ g0J \ qy \ gxgt.' \ lp''yi \ g'gxgpv'yi \ g'o \ ctngv'o \ cngt''gzj \ cwwu''j \ ku'lpxgpvqt \{'' \ yi \ tqwi \ j ''o \ ctngv'o \ cnkpi ''r \ tqeguu.' \ 'yi \ g'eqpegtpgf ''uvqen''gzej \ cpi \ g''o \ c'' \ lpvlo \ cvg''yi \ g''uco \ g''vq''UGDK'chvgt''f \ wg''xgtllhlecvlqp0''$
- g+ Gz gewkqp"qh"vj g"qtf gt"cv"vj g"s wqvgf "r tkeg"cpf "s wcpvkv{ "o wuv"dg"i wctcpvggf "d $\{$ "vj g"O ctngv'O cngt."hqt"vj g"s wqvgu" i kxgp"d $\{$ "j ko 0'
- h+ Vj gtg"y qwf "pqv'dg"o qtg"yj cp"hkxg"O ctngv'O cngtu"hqt "c"uetkr v'cv'cp{"r qkpv'qh'vko g"cpf "yj g"O ctngv'O cngtu"o c{" eqo r gvg'y kyj "qvj gt 'O ctngv'O cngtu'hqt "dgwgt "s wqvgu"vq"yj g'kpxguvqtu0Cv'yj ku'uvci g."I tgvgz 'Uj ctg"Dtqmkpi "Nko kxgf 'ku' cevkpi "cu'yj g'uqrg'O ctngv'O cngt0'
- i + Vj g"uj ctgu"qh"yj g"Eqo r cp{"y km"dg"\tcf gf "kp"eqp\kp\wq\wu"\tcf kpi "uguukqp"\tqo "yj g"\ko g"cpf "f c{"yj g"eqo r cp{"i g\u"\text{rugu}" rkn\tgf "c\u'UO G'R\tc\uq\tau\tq\u'DUG'\N\o k\tgf "cpf "O ct\tmg\u'O c\tmg\u'U ctg\u'r\tg\ug\tg\u'r\tg\ug\u'r\tg\u'g\u'r\tg\u'g\u'r\tg\u'g\u'r\tg\
- j + Vj gtg'y kn'idg'ur gekcn'ektewo uvcpegu'wpf gt'y j kej ''y g'O ctngv'O cngt'o c{ ''dg'cmqy gf ''vq'y kaj f tcy ''ygo r qtctkn(''Thwnn('' htqo ''y g''o ctngv''o' 'hqt ''kpuvcpeg''f wg''vq''u{ uvgo ''r tqdngo u."cp{ ''qvj gt"r tqdngo u0'C m'eqpvtqmcdng''tgcuqpu''tgs wktg''r tkqt'' crrtqxcn'htqo ''y g'Gzej cpi g."y j kng''hqteg/o clgwtg''y kni'dg''crrnkecdng''hqt ''pqp/eqpvtqmcdng''tgcuqpu0'Vj g''f gekukqp''qh'' y g'Gzej cpi g''hqt''f geki kpi ''eqpvtqmcdng''cpf ''pqp/eqpvtqmcdng'tgcuqpu'y qwf ''dg''hkpcn0'
- k+ "Vj g'O ctngv'O cngt'uj cm'j cxg'vj g'tki j v'vq'\gto kpcvg'uckf ''cttcpi go gpv'd{ "i kxkpi ''c''vj tgg/o qpvj ''pqvkeg''qt''qp''o wwcm{ "ceegr vcdrg'\gto u''vq''y g'O gtej cpv'Dcpngt."y j q''uj cm'vj gp''dg'tgur qpukdrg''vq''cr r qkpv'c'tgr reego gpv'O ctngv'O cngt0'
- I+ Kp"ecug"qh"ygto kpcvkqp"qh"yj g"cdqxg/o gpvkqpgf"O ctngv"O cmkpi "Ci tggo gpv"r tkqt "vq"yj g"eqo r ngvkqp"qh"yj g"eqo r wnuqt {"
 O ctngv"O cmkpi "Rgtkqf ."kv"uj cm'dg"yj g"tgur qpukdktk{ "qh"yj g"Ngcf"O cpci gt"vq"cttcpi g"hqt"cpqyj gt"O ctngv"O cngt *tu+"kp"
 tgr rcego gpv"f wtkpi "yj g"ygto "qh"yj g"pqvkeg"r gtkqf "dgkpi "ugtxgf"d{"yj g"O ctngv"O cngt "dw"r tkqt "vq"yj g"f cw"qhltgrgcukpi "
 yj g"gz kurkpi "O ctngv"O cngt "htqo "ku"f wkgu"kp"qtf gt "vq"gpuwtg"eqo r nkcpeg"y kyj "yj g"tgs wktgo gpw"qh"Tgi wrcvkqp"483"qh"
 yj g"UGDK*KEFT+"Tgi wrcvkqpu0Hwtyj gt"yj g"Eqo r cp{"cpf"yj g"Ngcf"O cpci gt"tgugtxg"yj g"tki j v"vq"cr r qkpv"qy gt"O ctngv"
 O cngt *tu+"gkyj gt "cu"c"tgr rcego gpv"qh"yj g"ewttgpv"O ctngv"O cngt "qt"cu"cp"cf f kkqpcn"O ctngv"O cngt "uwdlgev"vq"yj g"vqvcn"
 pwo dgt"qh"F guki pcvgf "O ctngv"O cngtu"f qgu"pqv"gzeggf"7"*flxgg+"qt"cu"ur gekktgf"d{"yj g"tgrgxcpv"rcy u"cpf"tgi wrcvkqpu"
 cr r nkecdng" cv" yj cv" r ctvkewrct" r qkpv"qh" vko g0" Vj g"O ctngv"O cnkpi "Ci tggo gpv"ku" cxckrcdng"hqt"kpur gevkqp" cv"qwt"
 Tgi kuvgtgf "Qlhkeg"htqo "33022"c00 0'vq"7022"r 00 0'qp"y qtmkpi "f c{u0'
- m+ UO G''Rrevhqto "qh''DUG''Nko ksgf "y kni'j cxg"cm'o cti kpu'y j kej "ctg"crrnkecdng"qp"yi g"DUG''Nko ksgf "O ckp"Dqctf "xk 0"
 O ctm/vq/O ctngv."Xcnwg/C√Tkum'*XCT+'O cti kp.'Czvtgo g'Nquu'O cti kp.'Ur geken'O cti kpu'cpf 'Deug'O kpko wo 'Eer ksen'
 gwe0DUG''Nko ksgf "eep"ko r qug"cp{"qyi gt"o cti kpu'cu'f ggo gf "pgeguuct{"htqo "vko g0'yq/vko g0'
- n+ UO G'Rrevhqto "qh'DUG'Nko ksgf "y km'o qpkqt "y g'qdrki evkqpu"qp"c'tgcn'ko g'dcuku'cpf "r wpkskxg'cevkqp"y km'dg'lpkskcvgf "hqt"cp{"gzegr vkqpu"cpf "I"qt"pqp/eqo r nkcpegu0'Rgpcnskgu"I"hlpgu"o c{"dg"ko r qugf "d{"y g"Gzej cpi g"qp"y g"O ctmgy' O cmgt. "kp"ecug"j g"ku'pqv'cdng'vq"r tqxkf g'vj g"f guktgf "ns wkf kx{ "kp"c'r ctvlewrct 'ugewtkx{ "cu'r gt'vj g'ur gekhkgf 'i wkf grkpgu0' Vj gug"r gpcnskgu"I"hlpgu'y km'dg"ugv'd{"y g"Gzej cpi g"htqo "vko g"vq"vko g0'Vj g"Gzej cpi g"y km'ko r qug"c'r gpcnx{ "qp"vj g" O ctngv'O cngt"lp"ecug"j g"ku"pqv'r tgugpv'kp"y g"o ctngv'*qhhgtkpi "y q/y c{"s wqygu+"hqt"cv'ngcuv'97' "qh'vj g"vko g0'Vj g" pcwtg"qh'vj g"r gpcnx{ "y km'dg"o qpgvct {"cu'y gm'cu'uwur gpukqp"kp"o ctngv'o cmkpi "cevkxkskgu"I'vtcf kpi "o go dgtuj kr0'



- o + Vj g'F gr ctvo gpv'qh''Uwtxgkmcpeg''cpf "Uwr gtxkukqp"qh''vj g''Gzej cpi g''y qwrf "f gekf g''cpf "r wdrkuj "'yj g''r gpcnkgu''I''hkpgu''I'' uwur gpukqp''hqt''cpf "vk'r g''qh'o kueqpf wev''I''o cpkr wrcvkqp"I''qvj gt''kttgi wrctkkgu''d{ ''yj g'O ctngv'O cngt''htqo "vko g''vq''vko g0''
- p+ Rtleg"Dcpf "Crf tgcf u<"UGDKEktewrct "dgctkpi "tghgtgpeg"pq<"EKT 10 TF 1F R1"2414234"f cvgf "Icpvct { "42."4234."j cu" rckf "f qy p"vj cv'hqt "kuwg"ukj g"wr "vq" "472"etqtgu"vj g"cr r rlecdrg"r tkeg"dcpf u'hqt "vj g"hktuv'f c { "uj cm'dg<"
 - k0 Kp"ecug"gs wkrkdtkwo "r tkeg"ku"f kueqxgtgf "kp"\j g"Ecm"Cwevkqp."\j g"r tkeg"dcpf "kp"\j g"pqto cn'\tcf kpi "uguukqp"\ij cm'dg" 7' "qh'\j g"gs wkrkdtkwo "r tkeg0'
 - kło Kp''ecug''gs wkrkdtkwo ''r tleg''ku''pqv'f kueqxgtgf 'lp''yj g'EcmlCwevkqp.''yj g''r tleg''dcpf 'lp''yj g''pqto cn'\tcf kpi ''uguukqp''uj cm'' dg''7' ''qh''yj g''kuuwg''r tleg0'

Cf f kkqpcm(.''y g'\tcf kpi '\uj cm\\cmg'r rceg'\kp'\VHV'\ugi o gpv\hqt'\htuv'32'f c {u'htqo 'eqo o gpego gpv\qh'\tcf kpi 0'Vj g'hqmqy kpi " ur tgcf 'y km'\dg''cr r r\ecdng'\qp''y g'\UO G''Rrc\hqto ''qh'\DUG''N\ko kgf θ'

Vj g''O ctngv''O cngt ''uj cmi'hwhki'vj g''crrhecdng''qdnki cwlqpui'cpf ''eqpf kwlqpui'cui'urgekhlgf ''lp''vj g''UGDK'*NEFT+''
Tgi wucwlqpu ''cpf ''kwu''co gpf o gpwi'lt qo ''wo g''vq''wo g''cpf ''vj g''ektewuctui'kunwgf ''d{ ''vj g''DUG''Nko kwgf ''cpf ''UGDK'
tgi ctf lpi ''vj ku'o cwgt'lt qo ''wo g''q''wo g0''

Ut OP qO'	Octngv'Rtleg'Urcd'*lp''+''	Rtqrqugf'Urtgcf'%lp'' 'vq'ucng'rtkeg+''
30'	Wr "vq"72"	; " ;
40'	72"\q'97"	:"
50'	97"\q"322"	8"
60'	Cdqxg"322"	7"

Rwtuwcpv'vq'UGDKEktewict'pwo dgt'EKT10 TF1FUC15314234'f cvgf 'P qxgo dgt'49.'4234.'hlo kwi'qp'vj g'wrrgt'wkf g'' hqt'o ctngv'o cngt*w#f wtkpi 'o ctngv'o cnkpi 'rt qeguu'j cw'dggp'o cf g'crrnlecdig.'dcugf ''qp'vj g'kuwg'wk g'cpf ''cw' hqmyy u<''

Kamg'Ukg''	Dw{ 's wqvg'gzgor vkqp'vj t guj qrf '' *Kpenwf kpi 'o cpf cwqt { 'kpkvkcn' kpxgpvqt { 'կht7'' 'կhtvj g'Kuwg'Uk g+''	Tg/Gpvt { 'tj t guj qrf 'hqt 'dw{ 's wqvg'' *hpenvf lpi 'b cpf cwqt { 'lplskcrllpxgpvqt { 'qh'7'' ' 'qh'tj g'Kuwg'Ul; g+''
Wr "vq" "42"Etqtgu"	47' "	46' "
"42"\q" "72"Etqtgu"	42' "	3;' "
'72'\q" ": 2'Etqtgu"	37' "	36' "
Cdqxg" ": 2"Etqtgu"	34' "	33' "

Cm'y g'cdqxg/o gpvkqpgf "eqpf kkqpu"cpf "u{uvgo u'tgi ctf kpi "y g'O ctngv'O cmkpi "Cttcpi go gpv'ctg'uvdlgev'vq"ej cpi g'dcugf "qp"ej cpi gu'qt "cf f kkqpcn'tgi wrcvkqpu"cpf 'i wkf grkpgu'htqo "UGDK'cpf "Uvqem'Gzej cpi g'htqo "Vko g'vq'vko g0'

Qp'\'ij g'lkt w'f c{'\dilkwkpi.'\'ij gt g'\y knidg'\c'rt g/qr gp'\'igunkqp'*ecmi\cwe\kqp+\cpf'\'\y gt g'\cke\ku't\cf kpi '\y knij crr gp'\cu'rt g'' yi g'g\'s wks{'\o ct mgv'j qwt uOVj g'\cke\ku'y kni\c'rr ('lt qo '\'ij g'lkt w'f c{'\di\'j g'lkwkpi '\dp'\'y g'f kneqxgt gf 'rt leg'f wt kpi '\'y g'' rt g/qr gp'\cmi\cwe\kqpOVj g'\tgewt kkgu'\di\'y g'Eqo rcp{'\y knidg'rncegf 'kp'URQU'\c'pf '\y qwf 't go ckp'kp'Vt cf g''nt ugwngo gpv'hqt'32'f c{u'lt qo '\'y g'f cwg'\dilkwkpi '\di\'Gs wks{'Uj ct gu'\dp'\'y g'Uvqem\Gzej cpi gO'



UGEVKOP'XKECRKVCN'UVTWEVWTG''

 $\label{thm:condition} Vj\ g"Gs\ wkw{\ "Uj\ ctg"Ecr\ kcn'qh''qwt"Eqo\ r\ cp{\ .}\ "cu"qp"'yj\ g"f\ cvg"qh''yj\ ku"F\ tchv'Rtqur\ gewu"cpf\ "chwgt"i\ kxkpi\ "ghhgev''q''yj\ g"Kuwwg''ku"\ ugv'hqtyj\ "dgrqy\ <''$

Ut0'	Ret vlewet u'	Со	Co qwpv''					
Pq0'			egrv'ij ctg'f cvc+''					
-		Ci i tgi cvg''	Ci i tgi cvg'xcnvg'cv'					
		Pqo kpcrlXcnwg''	Kuwg'Rt leg''					
C0'	Cwj qthgf 'Uj ctg'Ecr kcn' ^{6#} '	"	"					
"	42.22.222'Gs wkv{ "Uj ctgu'qh" "32022"gcej "	422022"	/"					
	"							
D0'	Kunngf.'Uwduetkdgf'cpf'Rckf/Wr'Ujctg'Ecrkschdghqtg'Vjg'Kunng''	"	"					
"	; .52.222'Gs wkv{ "Uj ctgu"qh" "32022"gcej "	; 5022"	/"					
	u .							
EO'	Rt gugpv'Kunwg'kp'tgto u'qh'tj ku'Ftch/Rt qur gewwu'*4+"	"	11					
"	Hrguj "Knuwg"qh"Wr vq"6.38.622"Gs wkx{ "Uj ctgu"qh" "32022"gcej "hwm{ "	Wr vq"63086"] _"					
	rckf/wr"qh"qwt"Eqorcp{"hqt"ecuj "cv"c"rtkeg"qh" "] _"rgt"Gswkv{"							
	Ujctg'*kpenwfkpi'rtgokwo''qh''']_'rgt'Gswkw{'Ujctg+''							
	"							
"	Y j kej 'èqo rthugu≮'	"	"					
FO'	Tgugt xcvkqp'lqt 'O ct ngv'O cngt 'r qt vkqp''	"	"					
"	Wrvq"] _"Gswkw{"Ujctgu"qh" "32022"gcej"hwm{"rckf/wr"qh"qwt"] _"] _"					
	Eqorcp{"hqt"ecuj "cv'c"rtkeg"qh" "] _"rgt"Gswkw{"Ujctg"*kpenwfkpi"							
	rtgo kwo "qh" "] _"rgt"Gs wkw{ "Uj ctg+"							
~~*	"	"						
G0'	Pgv'Kumg'\q'\j g'Rwdıle''		"					
	Wr vq"] _"Gs wkw{"Uj ctgu"qh" "32022"gcej "hwm{"r ckf/wr "qh"qwt"] _"] _"					
	Eqorcp{"hqt"ecuj "cv'c"rtleg"qh" "] _"rgt"Gs wkw{"Uj ctg"*kpenwf kpi "							
•••	rtgo kwo "qh" "] _"rgt"Gs wkx{ "Uj ctg+"	"	"					
"	Okty j kej "5+<"	1 "	1 "					
	Wrvq"]_"Gswkw{"Ujctgu"qh" "32022"gcej"hwmn{"rckf/wr"qh"qwt" Eqorcp{"hqt"ecuj"cv'c"rtkeg"qh" "]_"rgt"Gswkw{"Ujctg"%kpenwfkpi"] _] _					
	rtgo kwo "qh" "] _"rgt"Gs wkx{ "Uj ctg+"y km'dg"cxckredrg"hqt"cmqecvkqp"							
	vq'Tgvckilkpf kxkf wcnlkpxguvqtu'qh'wr 'vq' '4022'Ncnj "							
"	Wry"] _"Gs wky" Uj ctgu"qh" "32022"gcej "hwn("r ckf/wr "qh"qwt"] _"] _"					
	Eqorcp{"hqt"ecuj "cv"c"rtkeg"qh" "] _"rgt"Gswkw{"Ujctg" *kpenwfkpi"	1 =	J =					
	rtgo kwo "qh" "] _'rgt'Gs wkw['U] ctg+'y km'dg'cxckrcdrg'hqt'cmqecwlqp"							
	vq'TgvckilKpfkxkfwcnlKpxguvqtul'qhl'wr 'vq' '4022'Ncnj '''							
	"							
H0'	Kungf.'Uwduet klgf 'cpf 'Relf/wr'Uj etg'Eer kerlchygt'tj g'Kung''	"	"					
"	"Wr vq"35.68.622"Gs wkv{ "Uj ctgu"qh" "32022"gcej "	"Wr vq"356086"	/"					
	"	<u> </u>						
Ι 0'	Ugewt ksłęgu'Rt go kwo 'Ceegwpv''	"	"					
"	Dghqtg"yj g"Kuwg"	P	KV"					
"	Chyet "y g"Kunyg"	1	_"					
*3+117 7 4 1	f and trull mile and ban the this all as and as ill mile all as is at true this at all a mineral all	1 .IDC (II	". 1 . " " 1 "1 C					

^{*3}"Hqt"f gwku'lp"t gwkqp"\q"\j g"ej cpi gu'lp"\j g"cwj qtkugf "uj ctg"ecrkwn'qh'qwt"Eqo rcp{."rngcug"t ghgt "\q"ugevkqp"\kngf" õ**J knqt{'cpf'Egtwhp'Qyj gt'Eqtrqtcvg'O cwgtu'/'Co gpfo gpvu'\q'qwt'O go qtcpf wo 'qh'Cunqekv\qp**ö"qp'3360"

"

^{*4+&}quot;Vj g"Kuwg"j cu"dggp"cwj qtk| gf "d{"c"t guqnwkqp"qh'qwt "Dqctf"qh'F kt gevqtu'vj t qwi j "vj gkt "o ggvkpi "f cvgf "F gego dgt "35." 4245"cpf "d{"c"ur gekcn't guqnwkqp"qh'qwt "Uj ct gj qrf gt u"c v'Gz vt cqtf kpct {"I gpgt cn'O ggvkpi "f cvgf "F gego dgt "3:."42450"

^{*&}quot;"Cmqecvkqp"\q"cm'ecvgi qtkgu'\ij cm'dg"o cf g"qp"c"rtqrqtvkqpcvg"dcuku'\imdlgev\\q"xcnkf"Crrnkecvkqpu't gegkxgf "cv'qt "cdqxg" vj g"Kumg"Rt keg0Wpf gt '\imduet krvkqp. 'kt'cp{. 'kp"cp{"qh'\ij g"ecvgi qt kgu."y qwf "dg"cmqy gf '\iq'dg"o gv'y kj '\ir km'qxgt '\tqo "cp{"qh'\ij g"qvj gt "ecvgi qt kgu"qt "c"eqo dkpcvkqp"qh'ecvgi qt kgu"cv'vj g"f kuet gvkqp"qh'qvt "Eqo rcp{"kp"eqpumncvkqp"y kj "j g"Ngcf" Ocpci gt "cpf "F guki pcvgf "Uqem'Gzej cpi g0'Uvej "kpvgt/ug" ur km'qxgt."kt'cp{."y qwf "dg"chtgevgf "kp"ceeqtf cpeg"y kj "crrnkecdng'ncy u 't wngu 't gi wncvkqpu'cpf 'i wkf gnkpgu0'



ENCUUOHUJ CTGU'

Cu''qp'f cvg''qh'vj ku'Ftch'/Rtqur gewu. "qwt 'Eqo rcp{ 'j cu''qpn{ ''qpg''ercuu''qh'uj ctgu''lQ0''Gs wkx{ ''Uj ctgu''qh'' ''32@2''gcej 0'Cm'' Gs wkx{ ''Uj ctgu''kuwgf ''ctg''hwn{ ''rclf ''wr0'Qwt ''Eqo rcp{ ''f qgu''pqv''j cxg''cp{ ''qwuxcpf kpi ''eqpxgt kdrg''kpuxtwo gpuu''cu''qp''vj g'' f cvg''qh'vj ku'Ftch'/Rtqur gewu0'

PQVGU'VQ'ECRKVCN'UVTWEVWTG''

30 Ej cpi gu'kp'Cwj qtk gf 'Gs wk/{ "Uj ctg'Ecr kcn'qh'qwt 'Eqo r cp{<"

UtO' PqO'	Rct vlewict u'qh'l Kpet gcug''	Ewo wiedkig'' Pq0qh' Gswks{''	Hceg'Xcnwg'' qh'Gs wkv{ '' Uj ctg''	Ewo wiedsig'' Cwoj qtlkgf'' Uj etg'Eerlsen'	F cvg'qh'O ggvlpi ''	Y j gvj gt" CI O'I' GI O"	
		Uj ct gu''	Gree	Of etg Lei wen		OI O	
3"	Wr qp''Kpeqtr qtc\kqp'''	3.22.222"	32022"	32.22.222@2"	Wr qp'Kpeqtr qtckqp'"	P 0C0'	
4"	Kpetgcug" kp" Cwyj qtkugf" Ecr kscn'htqo " "32.22.222" va" "72.22.222"	7.22.222"	32022"	72.22.222022"	Lxn("4: ."4245"	GIO"	
5"	Kpetgcug" kp" Cwj qtkugf" Ecr kcri'htqo " "72.22.222" vq" "4.22.22.222"	42.22.222"	32@2"	4.22.22.222@2"	F gego dgt"3: ."4245"	GIO"	

40 Jkunqt { "qh" Kuungf "cpf "Rckf/Wr" "Ujctg" Eerken "qh" qwt "Eqorcp { "

Vj g'j kuvqt { "qh'yj g'gs wkv{ "uj ctg'ecr kxcn'qh'qwt 'Eqo r cp { "ku'ugv'hqtyj 'dgnqy <"

F с ч у ч ч ч ч ч ч ч ч ч ч ч ч ч ч ч ч ч	Pwo dgt" qh'Gs ww{" Uj ctgu'' cmqwgf"	Hceg'' xcnvg'' * +''	Kumg'' Rt leg'' * +''	Pewtg'qh' Eqpulf gtevlqp''	Pcwtg'qh' cmqvo gpv'	Ewo wrevkxg'' pwo dgt'qh'' Gs wkv{'' Uj ctgu''	Ewo wrwkg" rclf/wr" Gs wls{'Uj ctg" ecrlscn* +"
Wr qp'Kpeqtr qtcvkqp'"	52.222"	32@2"	32022"	Есиј "	Uwduetkdgt" vq"vjg"OQC""	52.222"	5.22.222022"
"Kuwg"qh"Dqpwu" Uj ctgu"f cvgf " F gego dgt"44."4245"	; .22.222"	32@2"	/"	Qyj gt"yj cp"Ecuj "	Dqpwi' Ku wg"	; .52.222"	; 5.22.222@2"

*Ke'Kpkkcn'Uwduetkdgtu'\q'\j g'O go qtcpf wo "qh'Cuuqekc\kqp"qh'qwt'Eqo rcp{<

Ut0Pq"	Pco guˈqhˈCmqwgguˈˈ	Pwo dgt 'qh'Gs www{ 'Uj ctgu''
3"	Iwtogn"Uspij"Fjkmqp"	32.222"
4"	P cxpggv'Mcwt"	32.222"
5"	Ici lk/'Upi j 'F j kmp''	32.222"
"	Vqven'	52,222"

 $\label{lem:convergence} $$$ \frac{\ensuremath{\mbox{W}}}{\mbox{W}} = \ensuremath{\mbox{W}} =$

Ut OP qO'	Pco g''	P զ0կh/Gs ww/ 'Uj ct guˈcmqwgf ''
3"	Lci lk/Ulpi j 'Fj kmp'''	7.; ; .: 42'"'
4"	P cxpggv'Mcwt"	5.22.222'"'
5"	Leuy kpf gt "Ukpi j "	52"
6"	Reny kpf gt "Mewt"	52"
7"	Uctcdlki'Mcwt"	52"
8"	Rcto lk/Upi j "	52"
9"	J cty kpf gt"Mwo ct"	52"
: "	Dj wr kpf gt "Ukpi j "	52"
"	Vqven'	; .22.222"

50 Kuwg"qh"Gs wkx{ "Uj ctgu"hqt"Eqpulf gtcvkqp"qyj gt"vj cp"Ecuj 0"



Gzegr v'ij g'r qkpv'*kk-l'cdqxg'y g'j cxg'pqv'kuuwgf "cp{ 'Gs wkv{ 'Uj ctgu'hqt "eqpukf gtcvkqp"qvj gt 'vj cp 'ecuj 0'

- 60 Qwt "Eqo r cp{"j cu''pqv'cmqwgf "cp{"Gs wkx{"Uj ctgu''r wtuwcpv''vq"cp{"uej go g"crrtqxgf "wpf gt"Ugexkqp"5; 3/5; 6"qh''yj g" Eqo r cpkgu'Cev."3; 78"cpf "Ugexkqp"452/456"qh''yj g"Eqo r cpkgu'Cev."42350"
- Y g"j cxg"pqvtg/xcnwgf "qwt"cuugwu'ukpeg"kpegr vkqp"cpf "j cxg"pqv'kuuwgf "cp{ "gs wkw{ "uj ctgur"kpenwf kpi "dqpwu'uj ctgur+"d{ "ecr kxcnk| kpi "cp{ 'tgxcnwcvkqp 'tgugtxgu0'
- Qwt"Eqo r cp{"f qgu"pqv"j cxg"cp{"Go r m{gg"Uqem"Qr vlqp"Uej go g"I"Go r m{gg"Uqem"Rwtej cug"Uej go g"lnt"qwt" go r m{ggu."cpf "y g"f q"pqv"lpvgpf "vq"cmqv"cp{"uj ctgu"vq"qwt"go r m{ggu"wpf gt"Go r m{gg"Uqem"Qr vlqp"Uej go g"I" Go r m{gg"Uqem"Rwtej cug"Uej go g"Intqo "vj g"r tqr qugf "Kunwg0'Cu"cpf "y j gp."qr vlqpu"ctg"i tcpvgf "vq"qwt"go r m{ggu" wpf gt" y g"Go r m{gg"Uqem"Qr vlqp"Uej go g."qwt"Eqo r cp{"uj cm"eqo r n{"y kyj "yj g"UGDK"*Uj ctg"Dcugf "Go r m{gg" Dgpghku+"Tgi wrcvlqpu."42360'
- $\textbf{90} \qquad \textbf{Kuwg''qh'Gs wkv} \text{ "Uj ctgu'cv'r tkeg''ny gt''y cp''y g''Kuwg''Rtkeg''f wtkpi ''y g''r tgegf kpi ''3'''qpg+'' {gct''}} \\$

Qwt'Eqo r cp{'j cu'pqv'kuwgf "cp{'Gs wkx{'Uj ctgu'cv'c'r tkeg'ny gt'yj cp''yj g'Kuwg'Rtkeg'f wtkpi 'c'r gtkqf 'qh'qpg''{gct'r tgegf kpi " yj g'f cvg'qh'yj ku'F tchv'Rtqur gewu. "gzegr v'cu'f kuenqugf 'dgnqy <"

F cvg'qh'	Pq0qh'Gs wls{''	Hceg''	Kung"	Тдсидри'фեСпию дру'	Dgpghku'ceet wgf ''
Cmyvo gpv''	Uj ct gu''	Xcnvg'* +''	Rt leg'* +''		vq'eqo rcp{''
F gego dgt "44."	; .22.222"	32@2"	/"	Dqpwu'lkp''yj g'tcvkq''qh''52⊲3''	Tgugtxgu'cpf"
4245"				k0g0"52"Gs wkv{ "Uj ctg"hqt"gxgt{"3"	Uwtr nwu'"'
				Gs wkv{ "Uj ct gu"j grif "	

[,] Cdqxg"cnqvo gpv'qhluj ctgu'j cu''dggp"o cf g"qwv'qh'T gugtxgu"cpf "Untrnwu'cxchrcdng"cpf "pq"rctv'qh't gxcnwcvkqp"t gugtxg"j cu'' dggp"whrk| gf "hqt "ij g"rwtrqug0"

- :0 Qwt 'Uj ctgj qrf kpi 'Rcwgtp''
- c+ Vj g'vcdng'dgrqy 'r tgugpvu'\j g'ewttgpv'\ij ctgi qrf kpi 'r cwgtp''qh'qwt'Eqo r cp { 'cu'qp'\j g'f cyg'qh'\j ku'F tchv'Rtqur gewu



Ecvgi qt{"*K"	Ecvgi qt {'qh'' uj ctgj qn f gt'********	P զանկի' uj ctgj qn f gtu'* ԿԿՆ "	Pq0\qhi' hwn(" rckf/ wr" gs wkv {" uj ctg u'j gnf" *IXX+"	Pq0'qh'Rctv f("rchf/wr"gswk v("ujct guf"*X+"	Pq0\did uj ctgu' wpf gtn{ kpi '' Fgrqukv qt{'' Tgegkrv u'*XK*"	Vqvcn' pqud' uj ctgu' j gnf '' *XH\d'?'' *XX+* X+'' *XK''	Uj ctgj qn f kpi 'cu'c'' ' 'qhl' vqwrhpq0' qh'tij ctgu'' *ecrewr vg f 'cu'r gt'' UETT.'' 3; 79+'' *XMM-Cu'' c'' 'qh'' *C- D- E4 +"		'èncuu'i	qh'igewt k	j w'j grf '' dgu'*KZ+" Vqvcn' cu'c'' ' 'qh' *C- D- E+"	Pq0\dit' Wpf gt \(\) k pi '' Qww.cp f \(\) pi '' eqpxgt \(\) dig'' ugewt \(\) lig u'' **penwf \(\) p i '' Y cttcpv u+'*\(Z+'' \)	Uj ctgj qn f kpi 'cu'c'' cunwo kpi '' hwni' eqpxgt vkd ng'' ugewt kskgu'' *cu'c'' rgt egpwc i g'qh'' f knwyf '' uj ctg'' ecr kscn+'' *ZK?'' *XKK-*Z+'' Cu'c'' '' qh'' *C-D-E4 +"	No kp'i	wo dgt" qh" qengf" lij ct gu' ' 'qh' ' 'qh' wqwch' Uj ct gu' j gnf" *d+"	qhU rng qvj g gpe tgf' P q''	o dgt" j ctgu' f i gf" qt" gty kug'' wo dg *Z KKG" Cu'c" ' 'qh'' vqven' Uj ct gu'' j grf" *d+"	Pwo dgt'' qhlgs wlw{'' uj ctgu'' j grf 'kp'' f go cvgt ken k gf 'luto '' *ZKX+; "
C"	Rtqo qvgt u"(" Rtqo qvgt" I tqwr"	:"	; .52.2 22"	/"	/"	; .52.22 2"	322@2"	; .52.2 22"	/"	; .52.2 22"	322@2"	/"	322@2"	/"	/"	/"	/"	; .52.222"
D"	Rwdrle"	/"	/"	/"	/"	/"	/"	/"	/"	/"	/"	/"	/"	/"	/"	/"	/"	/"
Е"	P qp"/ Rtqo qvgt" P qp"/" Rwdrke"	/"	/"	/"	/"	/"	/"	/"	/"	/"	/"	/"	/"	/"	/"	/"	/"	/"
E3"	Uj ctgu" wpf gtn{k pi "FTu"	/"	/"	/"	/"	/"	/"	/"	/"	/"	/"	/"	/"	/"	/"	/"	/"	/"
E4"	Ujctgu" jgnf"d{" Gormq{g g"Vtwuwu"	/"	/"	/"	/"	/"	/"	/"	/"	/"	/"	/"	/"	/"	/"	/"	/"	/"



Ecvgi qt{'*¶&"	Ecvgi qt {'qh' uj ctgj qn f gt'********	P զա/նկի' uj ctgj qn f gt u'* IAN	Pq0\qhi' hwuf'' rclf/ wr'' gs wls {'' uj ctg u'j gff'' *KX+''	Pq0'qhi'Retv f("rchi'gswk'ujet gui'jgf" jgff"*X+"	Pq0\did' uj ct gu' wpf gt f(Vqvcn' pqud' uj ctgu' j gnf '' *XNG'?'' *IX+ * X+ '' *XK''	Uj ctgj qn f kpi 'cu'c'' ' 'qh'' vqwdpq0' qh'tj ctgu'' *ecnww vg f 'cu'rgt'' UETT.'' 3;79+'' *XMMG'Cu'' c'' 'qh'' *C- D- E4 +"	P q'qh'X Encun / Gs wkv {"	'encuu'	qhligewt k	Vqvcn' cu'è'' ' 'qh' *C- D- E+"	Pq0\dit' Wpf gt \(\) \ pi '' Qwuwcp f \(\) pi '' eqpxgt \(\) dig'' ugewt \(\) \ ug'' "\(\) penwf \(\) p i '' Y cttcpv \(\) \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	Uj ctgj qn f kpi 'cu'c'' ' " cunwo kpi " hwni' eqpxgt wd ng" ugewt kwlgu'' *cu'c'' rgt egpwc i g'qh'' f knwgf " uj ctg'' ecr kwcn+" *Z K ? " *X K K - *Z +" Cu'c'' " qh'' *C - D - E 4 +"	No kp'i ** P q'' *c +"	wo dgt" qh' qemgf" tj ctgu' Z IKF" Cu'c" ' 'qh' ' wqwcn' Uj ct gu'' j gnf" *d+"	qhU rng qvj g gpe tgf' P q''	o dgt" j ctgu' f i gf " qt" gty kug' wo dg "ZHHH" Cu'c' ' 'qhh' Uj ct gu' ' j gnf " *d+"	f go cvgt ken k gf 'lnto '' *ZKX+; "
"	Vqvcn'	:"	;.52.2 22''	/	/''	;.52.22 2''	322@2"	;.52.2 22"	/''	;.52.2 22"	322@2"	/''	322@2"	/''	/"	/.,	/ '	;.52.222"

Cu'qp'f cvg'qh'\j ku'F t ch'Rt qur gewu'3'Gs wk\{ '\ij ct g'j qrf u'3'xqvg0'

 $Y\,g'j\,cxg''qp\eta'\,''qpg''encuu''qh'Gs\,wkh'\,''Uj\,ct\,gu''qhh'ceg''xcnwg''qh'\,''32@2''gcej\,0'''$

Qwt "Eqo rcp{"y knt/kng"y g"uj ctgj qnf kpi "rcwgtp"kp"y g"lqto "rtguetkdgf "wpf gt Tgi wncwkqp"53"qh'y g"UGDK**Nkukpi "Qdnki cwkqpu"cpf "F kuenquwt g"Tgs wkt go gpvu+'Tgi wncwkqpu."4237."qpg"f c{" rtkqt "vq"y g"khukpi "qh'y g"Gs wkx{"uj ctguOVj g"uj ctgj qnf kpi "rcwgtp"y knt/dg"wrnqcf gf "qp"y g"Y gdukvg"qh'y g"UqentGzej cpi g"dghqt g"eqo o gpego gpv'qh'ytcf kpi "qh'iwej "Gs wkx{"Uj ctguO'



d+ Gs wkx{ "Uj ctgj qrf kpi "qh"F ktgevqtu."Mg{ 'O cpci gtkcn"Rgtuqppgn"cpf "Ugpkqt"O cpci go gpv"kp"qwt "Eqo r cp{<"

Gzegr v'cu'uvcvgf "dgrqy."pqpg"qh"qwt "Fktgevqtu."Mg{"Ocpci gtkcrl"Rgtuqppgrl'qt "Ugpkqt"Ocpci go gpv'j qrf "cp{"Gs wkw{"Uj ctgu" kp"qwt "Eqorcp{<"

Ut OP qO'	Pco g'կեՄj ctgj գոք gt''	Pq0qhGs www{''	' 'qh'Rt g/Kuwg''	Pq0qhGs www{''	''qhRquv/
		Uj ct gu''	Ecrlsch'	Uj ct gu''	Kunng'Ecrksch'
30 "	Lci lk/'Ukpi j 'F j kmp'''	8.3; .: 36"	88087"	8.3; .: 36"] _"
40 "	P cxpggv'Mcwt"	5.22.222'"'	55055"	5.22.222'"'] _"
"	Vqveri'	;.4;.:36"	;;0:"	;.4;.:36"] _"

e+ Nkuv'qh'uj ctgj qrf gtu'j qrf kpi '3' 'qt'o qtg'qh'vj g'r ckf/wr 'ecr kxcn'qh'qwt'Eqo r cp{ 'cu'qp'f cvg'qh'vj ku'F tchv'Rtqur geww.k'

Ut 0P q0'	Rct vlewrct u''	Pq0qhUj ctgu''	' 'qh'Rtg/Kuwg'Ecrlscn'			
3"	Lci lk/'Upi j 'Fj kmp'''	8.3; .: 36"	88087"			
4"	P cxpggv'Mcwt"	5.22.222""	55\&5"			
"	Vqvcri'	; .4; .: 36"	;;0:"			

f + Nkuv'qh'tıj ctgj qnf gtu'j qnf kpi '3' "qt"o qtg"qh'tj g"r ckf/wr "ecr kscn'qh'qwt"eqo r cp{"cu"qp"f cvg"\gp"f c{u"r tkqt"\q"tj g"f cvg"qh" yj ku"F tchv'Rtqur geww.

Ut OP qO'	Rct vlewrct u'	P զ0կեՄյ ct gư'	' 'qh'Rtg/Kuwg'Ecrlscn'
3"	Lci lk/'Upi j 'Fj kmp'"	3; .; ; 6"	88087"
4"	Pcxpggv'Mcwt"	32.222'"'	55\&5"
"	Vqvcn'	4; .; ; 6"	;;0:"

g+ Nkuv'qh'uj ctgj qrf gtu'j qrf kpi "3' "qt"o qtg"qh'vj g"r ckf/wr "ecr kcn'qh'qwt"eqo r cp { "cu"qp"f cvg"qpg" { gct "r tkqt"vq" yj g"f cvg" qh'vj ku"F tchv'Rtqur gewux"

Ut OP qO'	Rct vlewrct u''	Pզ0կեՄյctgu''	' 'qh'Rtg/Kumg'Ecrkscn'
3"	Lci lk/'Uspi j 'F j kmqp''	42.222"	88089' "
4"	P cxpggv'Mcwt"	32.222"	55Œ5' "
"	Vqven'	52.222"	322@2' ''

h → Nkuv'qh'uj ctgj qrf gtu"j qrf kpi "3' "qt"o qtg"qh'vj g"r ckf /wr "ecr kcn'qh'qwt"eqo r cp{"cu"qp"f cvg"y q"{gct"r tkqt"vq"vj g"f cvg" qh'vj ku"F tchv'Rtqur gewu.<"

Ut 0P q0'	Rct vlewrct u'	P զ0կեՄյ ct gư'	' 'qh'Rtg/Kuwg'Ecrkscn'
3"	Lci lk/Upi j "Fj kmp"	42.222"	88089' "
4"	P cxpggv'Mcwt"	32.222"	55055' "
"	Vqvcn'	52.222"	322@2' "

- ; 0 Qwt "Eqorcp{"jcu"pqv"knuwgf"cp{"eqpxgtvkdrg"kpuvtwogpvu"rkng"ycttcpvu."fgdgpwstgu"gve0'ukpeg"knu"Kpeqtrqtcvkqp"cpf" ygtg"ctg"pq"qwuvcpfkpi "eqpxgtvkdrg"kpuvtwogpvu"cu"qp"fcvg"qh'vjku"Ftchv"Rtqurgewu0'
- 320 Qwt 'Eqorcp{'j cu'pqv'o cfg''cp{'r wdrle 'knuwg' Mpenwfkpi "cp{'tkij wt'knuwg''vq''yig''r wdrle+'kp''yig''r tgegfkpi ''yyq''{gctu0'
- 330 Vj gtg"y kni'dg"pq"hwt y gt "kuwg"qhi'ecr kcn "y j gyj gt "d{ "y c{ "qhi'kuwg"qhi'dqpwu"uj ctgu."r tghgtgpvkcni'cmqvo gpv."Tki j v'kuwg" qt "kp"cp{ "qyj gt "o cppgt "f wtkpi "yj g"r gtkqf "eqo o gpekpi "htqo "yj g"f cvg"qh'yj ku"F tchv'Rtqur gewui'wpvkn'yj g"Gs wkx{ "Uj ctgu" qh'qwt "Eqo r cp{ "j cxg"dggp"hwgf "qt "cr r nkecwqp"o qpg{ "wpdnqengf "qp "ceeqwpv'qh'hckmt g"qh'Kuwg0""
- 340 Vj gtg'y kn'idg'pq'hwty gt'kuwg'qh'ecr kcn'y j gy gt''d{ "y c{ "qh'kuwg'qh'idqpwu'uj ctgu."r tghgtgpvkcn'cmqvo gpv."tki j wi'kuwg" qt "kp"cp{ "qy gt "o cppgt"f wtkpi "y g"r gtkqf "eqo o gpekpi "htqo "y g"f cvg"qh'y ku''E tchv'Rtqur gewu''wpvkn'y g''Gs wk{ "Uj ctgu" j cxg"dggp "hkugf 0Qwt "Eqo r cp{ "f qgu'pqv'j cxg"cp{ "kpvgpvkqp"qt"r tqr qucn'vq"cngt "kuu'ecr kcn'untwewtg"y ky kp"c'r gtkqf "qh" 8"*ukz+"o qpy u"htqo "y g"f cvg"qh'vqr gpkpi "qh'y g"Kuwg"d{ "y c{ "qh'ur rkv" l"eqpuqnf cvkqp"qh'y g"f gpqo kpcvkqp"qh''Gs wk{ "Uj ctgu"qt "hwty gt "kuwg"qh'Gs wk{ "Uj ctgu"y j gy gt "r tghgtgpvkcn'qt"dqpwu."tki j wu'qt "hwty gt "r wdne "kuwg"dcuku0"J qy gxgt." Qwt "Eqo r cp{ "kv"kp"gzr cpukqp"r j cug"cpf "o c{ "pggf "cf f kkqpcn'ecr kcn'vq "hwpf "gz kuvkpi "l"cpf "qt "hwwtg"qti cpke"cpf "Tqt" kpqti cpke" gzr cpukqp0' Vj gtghqtg." qwt " Eqo r cp{ "o c{ "hwty gt "kuwg" Gs wkx{ "Uj ctgu" *kpenwf kpi " kuwg" qh" ugewt kkgu" eqpxgt kdng "kpvq'Gs wkx{ "Uj ctgu+'y j gy gt "r tghgtgpvkcn'qt "qy gty kug"chygt "y g"kuwg"cr r tqr tkcvgn{ "kp"f wg"eqo r nkcpeg'y ky " y g"cr r nkccdng 'uvcwwqt { "r tqxkukqpu0" "



350 F gvcknu"qh"qwt "Rtqo qvgtu"Uj ctgj qrf kpi "

Cu''qp''y g'f cvg''qh''y ku'Ftchv'Rtqur gewu. ''qwt ''Rtqo qvgtu'O t0Ici lkv'Ulpi j 'Fj kmqp''cpf 'O u0P cxpggv'Mcwt. 'j qrf ''; ; () : ' ''qh''y g'' rtg/kuuwgf. "uwduetkdgf" cpf "rckf/wr" Gs wkx{ "Uj ctg" ecr kxcn'qh'qwt Eqo rcp{0"

Dwkrf/wr 'qh'qwt 'Rtqo qvgtøu'\uj ctgj qrf kpi 'kp'Qwt'Eqo r cp{"

300 t0Lci lk/Upi j 'F j kmp''

Fevg'tht' Cmyw gpv'I' Vtepulgt''	Pwo dgt'' qh'Gs ww{'' Uj ctgu''	Hceg'' Xcmg'' * +''	Kuwg'T' Ces wkikkqp'' I'Vt cpulgt '' Rt leg'* +''			' 'qh' rtg/'' Kuwg'' gs ww{'' uj ctg'' ecrken'	' 'qh'' rquv'' Kuwg'' gs wb{'' uj ctg'' ecr bcn'
"Wr qp" Kpeqtr qtcvkqp"	32.222"	32022"	32@2"	Ecuj "	Uwduetkdgtu'vq" O go qtcpf wo "	"302: ""] _"
Ugr vgo dgt"52." 4243"	32.222"	32@2"	/"	Qyj gt"yj cp" Ecuj "	Ikhn/htqo "Iwtogn" Ukpij "Fjkmqp"	'302: '"'] _"
Cwi wu/43." 4245"	*3+"	32@2"	/"	Qvj gt"vj cp" Ecuj "	I khv'vq'Lcuy kpfgt" Ukpij"	"/2022""] _"
Cwi wuv'43." 4245"	*3+"	32022"	/"	Qyj gt"yj cp" Ecuj "	I khv'\q''Uctedlkv'' Mewt''	"/2022""] _"
Cwi wıv'43." 4245"	*3+"	32022"	/"	Qyj gt"yj cp" Ecuj "	I khv'vq'Reny kpfgt" Mewt"	"/2022""] _"
Cwi wuv'43." 4245"	*3+"	32@2"	/"	Qyj gt"yj cp" Ecuj "	I khv'\q'J cty kpf gt" Mwo ct"	"/2022""] _"
Cwi wıv'43." 4245"	*3+"	32022"	/"	Qyj gt"yj cp" Ecuj "	I kh/\q''' Rctco lk/'Ukpi j ''	"/2022""] _"
Cwi wuv'43." 4245"	*3+"	32@2"	/"	Qyj gt"yj cp" Ecuj "	Ikhv'\q"Djwrkpfgt" Ukpij"	"/2022""] _"
F gego dgt"44." 4245"	7.; ; .: 42"	32@2"	/"	Qyj gt"yj cp" Ecuj "	Dqpwu'Knuwg''	'86072'''] _"
Vqven'	8.3;.:36"	**	**	"	"	88087''] _"

40O tuOP cxpggv'Mcwt"

Fevg'qh' Cmqwo gpv'I' Vtepulgt''	Pwo dgt'' qh'Gswlw{'' Uj ctgu''	Hceg'' Xcnwg'' * +''	Kumg'I' Ces whikkip'' I'Vt c pulgt'' Rt leg'* +''	Eqpulf gt cylqp''	P c vwt g'qh'Kunvg''	' 'qhi' rtg/'' Kuwg'' gs wks{'' uj ctg'' ecrkscn'	' 'qh'' rquv'' Kunwg'' gs wls{'' uj ctg'' ecrlscn'
"Wr qp" Kpeqtr qtcvkqp'"	32.222"	32@2"	32022"	Ecuj "	Uwduetkdgtu'\q" O go qtcpf wo "	302: "	'] _'"'
F gego dgt"44." 4245"	5.22.222"	32@2"	/"	Qyj gt"yj cp" Ecuj "	Dqpwu'Kuwg''	54048"	'] _'"'
Vqwn'	5.32.222"	**	11	11	11	55055''	'] _' "'

Pqvgu<'

Pqpg"qh'yj g'uj ct gu'dgnqpi kpi "\q"qwt "Rt qo qvgt u'j cxg"dggp"rngf i gf "\knff cvg0"

Vj g"gpvkt g"Rt qo qvgt øu'lij ct gu'lij cm'dg"lavdlgev'lq"hqem'kp"ht qo "lj g'f cvg"qh'cnqvo gpv'qh'lj g"gs wks{ "lij ct gu'kaawsf "lj t qwi j " y ku'Ftclv'Rtqurgewu'hqt'rgtkqfu'cu'rgt'crrrkecdrg'Tgi wrckqpu'qh'y g'UGDK*KEFT+Tgi wrckqpu0'

Cnt/j g'lij ct gu'j grf 'ld{ "qwt 'Rt qo qvgt u. 'y gt g'hwnf 'r clf /wr "qp "\j g't gur gevkxg"f cvgu'qh'ces wkukkqp "qh'iwej "lij ct guO'

d+ Vj g'uj etgj qrf kpi 'r cwgtp"qh'qwt "Rtqo qvgtu"cpf "Rtqo qvgt"I tqwr "dghqtg"cpf "chgt" yj g"Kuwg'ku'ugv'hqtyj "dgnqy <"



UtO'	Rct dewct u'	Rt g/Ku	uwg''	Rquv/ F	úmg''
Pq0'		Pq0qhUj ctgu''	' 'J qrf kpi ''	Pq0qhUj ctgu''	' 'J qrf kpi ''
C+''	Rt qo qvgt u''				
3"	P cxpggv'Mcwt"	5.32.222"	55055"	5.32.222"] _"
4"	Lci lk/'Ukpi j 'F j kmqp''	8.3; .: 36"	88087"	8.3; .: 36"] _"
"	Vqven*C+''	;.4;.:36"	;;0;:"	;.4;.:36"] _''
D+''	Rt qo qvgt 'I t qwr ''				
5"	Leuy kpf gt 'Ukpi j "	53'"'	2022'"'	53'"'] _"
6"	Uctcdlk/Mcwt"	53'"'	2022'"'	53'"'] _"
7"	Rcny kpf gt "Mcwt"	53'"'	2022'"'	53'"'] _"
8"	Rctco lk/Upi j "	53"	2022"	53"] _"
9"	J cty kpf gt"Mwo ct"	53"	2022"	53"] _"
: "	Dj wrkpf gt "Ukpi j"	53"	2022"	53"] _"
**	Vqven*D+''	3:8"	2024''	3:8"] _"
"	"	"	"	"	11
"	Rt qo qvgt u'cpf 'Rt qo qvgt 'I t qwr '*C- D+''	'; .52.222'''	'322@2'''	'; .52.222'''] _"

Ut OP qO'	Pco g'qh'yj g'Rt qo qygt u''	P q0'qh'Uj ct gu'j grf ''	Cxgt ci g'equv'qh'Ces wkukskqp'%lp'' +''
3"	Lci lk/'Ukpi j 'Fj kmqp'''	8.3; .: 36"	2088"
4"	P cxpggv'Mcwt"	5.22.222'"'	2\odots4"
"	"	;.4;.:36"	26: "

 $370 \quad \mbox{Y g''j cxg'': "Gki j w$'$U$j ctgj qrf gtu"cu"qp"yj g"f cvg"qh"yj ku"F tchv"Rtqur gewu" }$

380 Y g'j gtgd{"eqphto ''yj cv''

Gzegr v'cu'uvcvgf "dgrqy ."vj gtg"j cu'dggp"pq"ces wkukkqp."ucrg"qt"vtcpuhgt"qh"Gs wkv{ "Uj ctgu"d{ "qwt"Rtqo qvgtu."Rtqo qvgtu I tqwr ."F ktgevqtu"cpf "vj gkt"ko o gf kcvg"tgrcvkxgu"kp"vj g"hcuv'8"o qpvj u"r tgegf kpi "vj g"f cvg"qhihkrkpi "qh"vj ku'F tchv'Rtqur gewxx<""

Fcvg'qh'	Pco g'qh'	PqOqh'Gs wls{''	' 'qh'Rt g/	Uwduet kdgf 'I''	Ecvgi qt{'qh'Cmqvvggu'
Cmpvo gpv''	Uj ctgj qıf gt''	Uj ct gu'cmywgf ''	Kumg''	Ces wit gf 'I'	*Rt qo qvgt u'I'
1'Vtcpuhgt''	-J B - 1 B -	TVtcpuhgttgf 'T'	Ecrksch'	Vt cpulgt "	Rt qo qvgt 'I t qwr 'I'
111		Ces wit gf "		1	Fkt gevqt 'I'T grc vkxgu+''
Cwi wu\'43."	Lci lk/Ukpi j "	3"	/2022"	I khv" vq" Lcuy kpf gt"	Rtqo qvgt'I tqwr'"
4245"	Fj kmpp"			Ukpi j "	1 10 1
Cwi wuv'43."	Lci lk/Upi j "	3"	/2022"	I lb.#a" btodlk!Moyt"	Rtqo qvgt"I tqwr"
4245"	Fj kmp"			I khv'\q'Uctcdlkv'Mcwt''	
Cwi wuv'43."	Lci lk/'Ukpi j "	3"	/2022"	I khv" vq" Reny kpfgt"	Rtqo qvgt"I tqwr"
4245"	Fj kmpp"			Mcwt"	
Cwi wu\'43."	Lci lk/'Ukpi j "	3"	/2022"	I khv'' vq'' Rcto lkv''	Rtqo qvgt"I tqwr"
4245"	Fjkmqp"			Ukpij"	
Cwi ww'43."	Ici lk/Ukpi j "	3"	/2022"	I khv" vq" J cty kpf gt"	Rtqo qvgt"I tqwr"
4245"	Fj kmpp"			Mwo ct"	
Cwi wuv'43."	Lci lk/'Ukpi j "	3"	/2022"	I khv" vq" Dj wr kpf gt"	Rtqo qvgt"I tqwr"
4245"	Fj kmpp"			Ukpij"	
F gego dgt"	P cxpggv'Mcwt"	5.22.222"	54048"	Uwduetkdgf " yj tqwi j "	Rtqo qvgt"
44.'4244"				Dqpwu' Ku wg''	
F gego dgt"	Lci lk/Ukpi j "	7.; ; .: 42"	86072"	Uwduetkdgf " yj tqwi j "	Rtqo qvgt"
44.'4244"	Fj kmpp"			Dqpwu' Ku wg"	
F gego dgt"	Leuy kpf gt"	52"	'2022'"'	Uwduetkdgf " yj tqwi j "	Rtqo qvgt"I tqwr"
44.'4244"	Ukpij"			Dqpwu' Ku wg''	
F gego dgt"	Uctedlk/Mewt"	52"	'2022'"'	Uwduetkdgf " yj tqwi j "	Rtqo qvgt'I tqwr"
44.'4244"	CCCCCIIN IV IC VIC			Dqpwu' Ku wg''	
F gego dgt"	Reny kpf gt "Mewt"	52"	'2022'"'	Uwduetkdgf " yj tqwi j "	Rtqo qvgt"I tqwr"
44."4244"	Today Apri gi TVICWI			Dqpwu' 'Ku wg''	
F gego dgt"	Rctco lk/Ukpi j "	52"	'2@2'"'	Uwduetkdgf " yj tqwi j "	Rtqo qvgt"I tqwr"
44.'4244"	Twice in one j			Dqpwu' Ku wg''	
F gego dgt"	J cty kpf gt"	52"	'2022'"'	Uwduetkdgf "vj tqwi j "	Rtqo qvgt'I tqwr"
44."4244"	Mwo ct"			Dqpwu' Ku wg"	



F gego dgt"	Dj wrkpfgt"	52"	'2022'"'	Uwduetkdgf 'vj tqwi j "	Rtqo qvgt"I tqwr"
44."4244"	Ukpij"			Dqpwu'Kuuwg''	

Pq"hlpcpekpi "cttcpi go gpvu"j cxg"dggp"gpvgtgf "kpvq"d{"yi g"o go dgtu"qh"yi g"Rtqo qvgt"I tqwr."yi g"Fktgevqtu."qt"yi gkt" dwukpguu'qh'yj g'hkpcpekpi "gpvks{ "f wtkpi "c'r gtkqf "qh'ukz"o qpyj u'r tgegf kpi 'yj g'f cvg'qh'hkrkpi "qh'yj ku'F tchv'Rtqur gewu0'

390 F gvckni'qh'Rtqo qvgtuø'Eqpvtkdwkqp"cpf "Nqem/kp'hqt"Vj tgg"[gctu"

 $Rwtuwcpv'vq'Tgi\ wrcvkqp''458"cpf\ ''45:\ ''qh'UGDK'*K\!EFT+Tgi\ wrcvkqpu.''423:\ ..'cp''ci\ i\ tgi\ cvg''qh'42022' \quad ''qh''vj\ g''r\ quv''kuuwg''ecr\ kcn''$ j grf "d{ "qwt "Rtqo qvgtu"uj cm'dg "eqpulf gtgf "cu"Rtqo qvgtøu"Eqpvtkdwkqp" "õRtqo qvgtøu"Eqpvtkdwkqpö+"cpf "uj cm'dg "rqengf/kp" hqt'c'r gtlqf 'qh'y tgg'{ gctu'htqo 'y g'f cyg'qh'cmqvo gpv'qh'Gs wlx{ 'ij ctgu'kuwgf 'r wtuwcpv'vq'y ku'Kuwg0Vj g'hqemllp'qh'Rtqo qygtøu' Eqpvtkdwkqp"y qwf "dg"etgcvgf "cu"r gt"cr r necdrg"rcy "cpf "r tqegf wtg"cpf "f gvcknu"qh"vj g"uco g"uj cml'cnuq"dg"r tqxkf gf "vq"vj g" Uvqem'Gzej cpi g'dghqtg'hkuvkpi 'qh'vj g'Gs wkv{ ''Uj ctgu0'

Cu''qp" y g'f cvg"qh' y ku''F tchv'Rtqur gewu. "qwt''Rtqo qvgtu" j qrf "; .4; .: 36' Gs wks{ "Uj ctgu''eqpuvkwwkpi "; ; 0; :' %qh' y g''Rquv'' o'' Kuwgf."uwduetklgf"cpf"rckf/wr"Gswkx{"Ujctg"Ecrkscn'qh'qwt"Eqorcp{."yjkej"ctg"grkiklrg"hqt"yjg"Rtqoqvgtøu"eqpvtklwkqp0" "Cuuwo kpi 'Hwnd'Uwduet kr skqp'"

Qwt "Rtqo qvgtu"j cxg"i kxgp"y tkwgp"eqpugpv"vq "kpenwf g"4.8; .637, "Gs vkw{ "Uj ctgu"j grf "d{ "'y go "cpf "uwduetkdgf "d{ "'y go "cu"r ctv" qh'Rtqo qygtøu'Eqpvtkdwkqp''eqpuvkxwkpi "42023' "qh''y g'r quv'kuuwg'Gs wkx{ "Uj ctgu''qh''qwt''Eqo r cp{0Hwtyj gt.''y g{ ''j cxg''ci tggf '' $pqv'vq''ugm'qt''vtcpuhgt''qt''r ngfig''qt''qvjgty kug'f kur qug''qh''kp''cp{"o cppgt."vjg''Rtqoqvgtøu''eqpvtkdwkqp."hqt''c''r gtkqf''qh''vjtgg''}$ { gctu'htqo ''y g'f cvg''qh''cmqvo gpv'kp''y g''Kuuvg0'''

Fevg'qh' Cmqwo gpv'I' vt epuligt 'epf'' o cf g'' hwn('r clf 'wr''	P q0\qh'Gs wkv{'' Uj ct gu'tqengf 'kp, ''	Hceg" Xcnwg" Rgt" Uj ctg" * +''	Kunwg'I' Ces whikkqp'' I' Vtcpulgt'' Rt leg'' * +''	Pewtg'qh' vtepucevkqp''	Rquv/Kumg'' Ujctgjqnfkpi''	Nqenikp'' Rgt kqf ''
Ot'Lcilk/Upij'Fj	kmp''					
Wr qp" Kpeqtr qtcvkqp'"	32.222"	32022"	32@2"	Uwduetkdgtu'\q" Ogoqtcpfwo"] _"	5"{ gctu"
Ugr vgo dgt "52." 4243"	; .; ; 6"	32022"	/"	I khv'htqo "I wto gn' Ukpi j "Fj kmqp"] _"	5"{ gctu"
F gego dgt"44." 4245"	3.7; .7; : "	32022"	/"	Dqpwu'Kuwg''] _"	5"{ gctu"
Vqvcn'	3.9; .7; 4, "	"	"	"] _''	"
			"			
O tuOP cxpggv'Mcw	t"					
Wr qp"	32.222"	32@2"	32@2"	Uwduetkdgtu'\q"] _"	5"{ gctu"
Kpeqtr qtcvkqp'"				O go qtcpf wo "		
F gego dgt "44." 4245"	9; .: 45"	32022"	/"	Dqpwu' 'K uwg''] _"	5"{ gctu"
Vqvcn'	: ; .: 45, "	"	"	"] _''	**

, Cuuwo kpi 'Hwnd'Unduet krykgp'"

Vj g'Gs wkx{ "Uj ctgu'\j cv'ctg'dgkpi ''nqengf/kp''ctg''pqv.''cpf''y knt'pqv'dg.''kpgnki kdng''hqt''eqor wcvkqp''qh''Rtqoqvgtuø'Eqpvtkdwkqp'' wpf gt "Tgi wrcvkqp"459"qh"vj g"UGDK*KEFT+"Tgi wrcvkqpu."423: 0'Kp"vj ku"eqo r wcvkqp."cu"r gt "Tgi wrcvkqp"459"qh"vj g"UGDK *KEFT+'Tgiwncvkqpu."qwt"Eqorcp{"eqphktou"yjc√yjg"Gswkx{"Ujctgu"nqengf/kp"fq"pqv."cpf"ujcm"pqv."eqpukuv'qh≮""

Vj g"Gs wkv{"Uj ctgu"qhhgtgf "hqt"o kpko wo "42' "Rtqo qvgtøu"Eqpvtkdwkqp"j cxg"pqv'dggp"ces wktgf "kp"vj g"vj tgg"{gctu" r tgegf kpi "vj g'f cvg'qh'vj ku'F tchv'Rtqur gewwi'hqt'eqpulkf gtcvkqp''qvj gt''vj cp''ecuj "cpf 'tgxcnvcvkqp''qh'cuugvu''qt''ecr kvcnk¦ cvkqp'' qt"ci ckpuv'Gs wkx{ "Uj ctgu'y j kej "ctg"qyj gty kug"kpgrki kdrg'hqt"eqo r wxcvkqp"qh"Rtqo qvgtøu"eqpvtkdwkqp="

Vj g'o kpko wo 'Rtqo qvgtøu'eqpvtkdwklqp'f qgu'pqv'kpenwf g'Gs wkx{ "Uj ctgu'ces wktgf 'f wtkpi "vj g'qpg"{ gct'r tgegf kpi "vj g'f cvg" qh''y ku'F tchv'Rtqur gewu''cv'c''r tleg''nqy gt''y cp''y g''Kuwg''Rtleg="

Pq"gs wkv{"uj ctgu"j cxg"dggp"kuwgf "vq"qwt"Rtqo qvgtu'wrqp"eqpxgtukqp"qh'c"r ctypgtuj kr "hkto "f wtkpi "vj g"r tgegf kpi "qpg" $\{ gct "cv"c" r t keg "nguu" 'y cp" 'y g" Knuwg" Rt keg="$



 $\label{lem:continuous} Vj g"Gs wkw{ "Uj ctgu" j grf "d{ "vj g"Rtqo qvgtu" cpf "qhhgtgf "hqt" o kpko wo "Rtqo qvgtøu" eqpvtkdwkqp" ctg" pqv'uwdlgev'vq" cp{ "r ngf i g=" }$

 $Cm'yj\ g'Gs\ wkw\{\ ''Uj\ ctgu'qh'qwt'Eqo\ r\ cp\{\ ''j\ grf\ ''d\{\ ''yj\ g'Rtqo\ qvgtu'ctg'kp'f\ go\ cvgtkcnk\ gf\ ''hqto\ ''cpf\ ''d\{\ ''yj\ g'Rtqo\ qvgtu'ctg'kp'f\ go\ cvgtkcnk\ gf\ ''hqto\ ''cpf\ ''d\{\ ''yj\ g'Rtqo\ qvgtu'ctg'kp'f\ go\ cvgtkcnk\ gf\ ''hqto\ ''cpf\ ''d\{\ ''yj\ g'Rtqo\ qvgtu'ctg'kp'f\ go\ cvgtkcnk\ gf\ ''hqto\ ''cpf\ ''d\{\ ''yj\ g'Rtqo\ qvgtu'ctg'kp'f\ go\ cvgtkcnk\ gf\ ''hqto\ ''cpf\ ''d\{\ ''yj\ g'Rtqo\ qvgtu'ctg'kp'f\ go\ cvgtkcnk\ gf\ ''hqto\ ''cpf\ ''d\{\ ''yj\ g'Rtqo\ qvgtu'ctg'kp'f\ go\ cvgtkcnk\ gf\ ''hqto\ ''cpf\ ''d\{\ ''yj\ g'Rtqo\ qvgtu'ctg'kp'f\ go\ cvgtkcnk\ gf\ ''hqto\ ''cpf\ ''d\{\ ''yj\ g'Rtqo\ qvgtu'ctg'kp'f\ go\ cvgtkcnk\ gf\ ''hqto\ ''cpf\ ''d\{\ ''yj\ g'Rtqo\ qvgtu'ctg'kp'f\ go\ cvgtkcnk\ gf\ ''hqto\ ''cpf\ ''d\{\ ''yj\ g'Rtqo\ qvgtu'ctg'kp'f\ go\ cvgtkcnk\ gf\ ''hqto\ ''cpf\ ''d\{\ ''yj\ g'Rtqo\ qvgtu'ctg'kp'f\ go\ cvgtkcnk\ gf\ ''hqto\ ''cpf\ ''d\{\ ''yj\ g'Rtqo\ qvgtu'ctg'kp'f\ go\ cvgtkcnk\ gf\ ''hqto\ ''cpf\ ''d\{\ ''yj\ g'Rtqo\ qvgtu'ctg'kp'f\ go\ cvgtkcnk\ gf\ ''hqto\ ''cpf\ ''g'\ g'' Rtqo\ qvgtu'ctg'kp'f\ go\ cvgtkcnk\ gf\ ''hqto\ ''cpf\ ''hqto\ ''cpf\ ''g'' Rtqo\ qvgtu'ctg'kp'f\ go\ cvgtkcnk\ gf\ ''hqto\ ''cpf\ ''g'' Rtqo\ qvgtu'ctg'kp'f\ go\ cvgtkcnk\ gf\ ''hqto\ ''cpf\ ''hqto\ ''cpf\ ''hqto\ ''cpf\ ''hqto\ ''cpf\ ''hqto\ ''cpf\ ''hqto\ ''hqto\ ''cpf\ ''hqto\ ''hqt$

Vj g"Gs wkx{"Uj ctgu"qhhgtgf "hqt"Rtqo qvgtøu"eqpvtkdwkqp"fq"pqv'eqpukuv'qh'Gs wkx{"Uj ctgu"hqt"y j kej "ur gekhke"y tkwgp" eqpugpv'j cu'pqv'dggp"qdvckpgf 'htqo "vj g'Rtqo qvgtu'hqt'kpenwukqp"qh'kwu'uwduetkr kkqp'kp''yj g'Rtqo qvgt "eqpvtkdwkqp'uwdlgev' vq'nqem'kp0'

Y g'hwt vj gt ''eqpht o ''vj cv''qwt ''Rt qo qvgt øt.' Eqpvt klwwkqp''qh'42' ''qh''vj g''Rquv''Kuwg''Gs wkv{ ''f qgt''pqv''kpenwf g''cp{ ''eqpvt klwwkqp'ht qo ''Cngt pc vkxg''Kpxguvo gpv''Hwpf u''qt 'HXEK'qt 'Uej gf wgf 'Eqo o gt ekcn'Dcpmu''qt ''Rwdrke''Hkpcpekcn''
Kpuwkswwkqpu'\qt 'Kpuwt cpeg'Eqo r cplgtt!'

 $\textbf{3:0} \quad \text{Gs wks{"Uj ctgu"iqengf/kp"iqt"qpg"{gct"qyj gt"yj cp"O kpko wo "Rtqo qvgt"Eqpvtkdwkqp"}}$

Kp"vgto u"qh"Tgi wcvkqp"463"qh"vj g"UGDK*KEFT+"Tgi wcvkqpu."423: ."vj g"Gs wkv{ "Uj ctgu"vj j kej "ctg"uvdlgev"vq"mem/kp"uj cm" ectt{ "kpuetkr vkqp"-pqp/vtcpulgtcdngø"cmpi "vj ksj "vj g"f wtcvkqp"qh"ur gekligf "pqp/vtcpulgtcdng"r gtkqf "o gpvkqpgf "kp"vj g"hceg"qh" vj g"ugewtkv{ "egtvkhlecvg0Vj g"uj ctgu"vj j kej "ctg"kp"f go cvgtkcnk gf "hqto ."kh"cp{ ."tij cmidg"inqengf /kp"d{ "vj g"tgur gevkxg"f gr qukxqtkgu0" Vj g"f gvcknu"qh"mqem/kp"qh"vj g"Gs wkv{ "Uj ctgu"uj cm"cnuq"dg"r tqxkf gf "vq"vj g"F guki pcvgf "Uvqem'Gzej cpi g"dghqtg"vj g"nkuvkpi "qh" vj g"Gs wkv{ "Uj ctgu0"

3; 0 Kpuetkr vkqp"qt"Tgeqtf kpi "qh"pqp/vtcpuhgtcdkrkx{"

Ko''vgto u'qh'Tgi wrcvlqp"463"qh'vj g"UGDK*KEFT+"Tgi wrcvlqpu."423: ."qw'Eqo r cp{ 'eqphlto u'vj cv'egtvlkhecvgu'qh'Gs wlw{ 'Uj ctgu'' y j lej ''ctg'uwdlgev'vq'nqem'lop"vj gmenlop"vj gmenlop"vlopulgtcdngö"cpf 'ur gelh(''vj g'nqem'lop"r gtlqf ''cpf 'lop'ecug'uwej '' gs wlw{ ''uj ctgu''ctg'f go cvgtlcnk| gf ."vj g"Eqo r cp{ ''uj cm'gpuwtg'vj cv'vj g'nqem'lop"ku'tgeqtf gf ''d{ ''vj g"F gr qulxqt{0''

420 Rngf i g''qh' Nqengf 'kp''Gs wkv{ ''Uj ctgu''

 $Rwtuwcpv''q'Tgi\ wrcvlqp''464"qh''j\ g''UGDK'''REFT+''Tgi\ wrcvlqpu.''423:.''j\ g''nqengf/lp''Gs\ vks{"Uj\ ctgu''j\ gf''d{''qwt''Rtqo\ qvgtu''ecp''\ dg''r\ ngf\ i\ gf\ ''y\ kj \ ''cp{"uej\ gf\ wrgf\ ''eqo\ o\ gtekcn''dcpm'qt"'r\ wdrke''hlpcpekcn''hpukwwkqp''qt''u{uvgo\ cvkecm{''bo\ r\ qt\ vcpv''pqp/dcpm'pi\ ''hlpcpeg''eqo\ r\ cp{''qt''c''j\ qwukpi ''hlpcpeg''eqo\ r\ cp{''cu''eqmcvgtcn''ugewtks{''hqt''nqcpu''i\ tcpvgf''d{''yj\ go\ .''r\ tqxkf\ gf''yj\ cvc'''}}$

- c+ kh'yi g''gs wkx{ "uj ctgu''ctg''nqengf /kp''kp''vgto u''qh'encwug''*c+''qh'Tgi wrcvkqp''45: .''yi g''nqcp''j cu''dggp''i tcpvgf ''vq''yi g''eqo rcp{" qt''ku''uwdukf kct{ *kgu+'hqt''yi g''r wtr qug''qh'hkpcpekpi "qpg''qt''o qtg''qh''yi g''qdlgewi''qh''yi g''Kuwg''cpf ''r ngf i g''qh''gs wkx{ ''uj ctgu'' ku''qpg''qh''yi g''ygto u''qh''ucpevkqp''qh''yi g''nqcp=" ...
- d+ kh'yj g'ur gekhkgf 'ugewtkkgu'ctg'hqengf/kp'kp'\gto u'qh'encwug'*d+'qh'Tgi wrc\kqp''45: "cpf '\yj g'r ngf i g'qh'ur gekhkgf 'ugewtkkgu' ku'qpg'qh'\yj g'\gto u'qh'ucpe\kqp''qh'\yj g'\nqcp0'

 $Rtqxkf gf "'y cv'uwej "mem'kp"uj cm'eqp\kpwg"r wtuwcpv'vq"vj g"kpxqec\kqp"qh'vj g"r ngf i g"cpf "uwej "tcpulgtgg"uj cm'pqv'dg"gnki kdng" vq"tcpulgt "yj g"gs wkx{ "uj ctgu"\km'vj g"nqem'kp"r gtkqf "uxkr wrc\ygf "kp"vj gug"tgi wrc\kqpu"j cu"gzr ktgf 0'$

430 Vtcpuhgtcdkrkv{ "qh"Nqengf "kp"Gs wkv{ "Uj ctgu"

Kp'\gto u'qh'Tgi wrc\kqp"465"qh'\j g"UGDK*KEFT+'Tgi wrc\kqpu."423: "cpf 'uwdlgev'\q'r tqxkukqpu'qh'UGDK*UCUV+'Tgi wrc\kqpu."4233"cu'cr r nkecdrg="

- c+ Vj g'Gs wk/ 'Uj ctgu'j grf 'd{ "qwt'Rtqo qvgtu'cpf "nqengf "kp"cu'r gt"Tgi wcvkqp"45: "qh'vj g'UGDK*ÆFT+"Tgi wcvkqpu"423: " o c{ "dg"\tcpuhgttgf "\q"cpq\j gt"Rtqo qvgt"qt"cp{ "r gtuqp"qh'\j g"Rtqo qvgt"I tqwr "qt"\q"c"pgy "r tqo qvgt\"\n+"qt"r gtuqpu"\p" eqpvtqn'qh'qwt'Eqo r cp{. 'hwdlgev'\q'eqpvkpwcvkqp"qh'nqemkp'hqt'\j g'tgo ckpkpi 'r gtkqf 'y k,j '\tcpuhgtgg'cpf 'hwej '\tcpuhgtgg'' uj cm'pqv'dg'gnki kdng'\q'\tcpuhgt"yj go '\km'\j g'nqem/kp'r gtkqf 'uvkr wrcvgf 'j cu'gzr ktgf 0'
- d+ Vj g"gs wkv{ "uj ctgu"j grf "d{ "r gtuqpu"qvj gt"vj cp"r tqo qvgtu"cpf "rqengf "kp"cu"r gt"Tgi wævkqp"45; "qh"vj g"UGDK*KEFT+" Tgi wævkqpu."423: "o c{ "dg"vtcpuhgttgf "vq"cp{ "qvj gt"r gtuqp "*kpenwf kpi "Rtqo qvgtu"cpf "Rtqo qvgtøu"I tqwr+"j qrf kpi "vj g" gs wkv{ "uj ctgu"y j kej "ctg"rqengf /kp"crqpi "y kej "vj g"gs wkv{ "uj ctgu"r tqr qvgf "vq"dg"vtcpuhgttgf ."uvvdlgev'vq"eqpvkpvcvkqp"qh" rqenfkp'hqt"vj g"tgo ckpkpi "r gtkqf "y kej "vtcpuhgtgg"cpf "uvej "vtcpuhgtgg"uj cm'pqv'dg"grki kdrg"vq"vtcpuhgt"yj go "vkni'vj g"rqenr kp"r gtkqf "uvkr wævgf" j cu"gzr ktgf 0"

...



- 440 Qwt "Eqorcp{."qwt "Fktgevqtu"cpf "vjg"Ngcf "Ocpcigt"vq"vjku"Kuwg"jcxg"pqv"gpvgtgf "kpvq"cp{"dw{/dcem'qt"ukokrct" cttcpigogpvu'ykj "cp{'rgtuqp'hqt'rwtejcug"qh'qwt'Gswk{"Ujctgu"kuwgf "d{"qwt'Eqorcp{0'}
- 450 Cu'qp'f cvg'qh''y ku'F tchv'Rtqur gewwu.'y gtg'ctg'pq'r ctvs('r ckf/wr 'gs wkx{ 'Uj ctgu'cpf 'cm'y g'Gs wkx{ 'Uj ctgu'qh'qwt'Eqo r cp{'' ctg'hwm{ 'r ckf 'wr 0Hwtyj gt.'ukpeg'y g'gpvktg'o qpg{ 'kp'tgur gev'qh'y g'Kuwg'ku'dgkpi 'ecngf 'qp'cr r nlecvkqp.'cm'y g'uweeguuhwn' cr r nlecpvu'y km'dg'kuuwgf 'hwm{ 'r ckf/wr 'gs wkx{ 'Uj ctgu0' ...
- 460 Cu"qp"yi g"f cvg"qh"hkdpi "qh"yi ku"F tchx"Rtqur gewu."yi gtg"ctg"pq"qwuxcpf kpi "y cttcpvu."qr vkqpu"qt"tki j vu"vq"eqpxgtv" f gdgpwtgu."nqcpu"qt"qyi gt"kpuxtwo gpvu"y j kej "y qwrf "gpvkng"Rtqo qvgtu"qt"cp{"uj ctgj qnf gtu"qt"cp{"qyi gt"r gtuqp"cp{" qr vkqp"vq"ces wktg"qwt"Gs wkx{"Uj ctgu"chygt"yi ku"KpkxkrnRwdrhe"Qlhtgt""
- 470 Cu"qp"yi g"f cvg"qh"yi ku"F tchv"Rtqur gewu."yi g"Ngcf "O cpci gt"cpf "yi gkt"tgur gevkxg"cuuqekcvgu"*cu"f ghkpgf "wpf gt"yi g"
 Ugewtkkgu"cpf 'Gzej cpi g"Dqctf 'qh"kpf kc"*O gtej cpv"Dcpngtu+"Tgi wcvkqpu."3; ; 4+"f q"pqv"j qnf 'cp { 'Gs wkx{ "Uj ctgu"qh"qwt"
 Eqo r cp { 0'Vj g"Ngcf "O cpci gt"cpf "yi gkt"chhklcvgu"o c { "gpi ci g"kp"yi g"vtcpucevkqpu"y kyi "cpf "r gthqto "ugtxkegu"hqt"qwt"
 Eqo r cp { "kp"yi g"qtf kpct { "eqwtug"qh"dwukpguu"qt"o c { "kp"yi g"hwwtg"gpi ci g"kp"eqo o gtekch'dcpmkpi "cpf "kpxguvo gpv"
 dcpmkpi "vtcpucevkqpu"y kyi "qwt"Eqo r cp { 'hqt"y j kej "yi g{ 'o c { "kp"yi g"hwwtg"tgegkxg"ewuvqo ct { "eqo r gpucvkqp0"
- 480 Koxgunqtu'o c{ 'pqvg'ij cv'kp'ecug'qh'qxgt/uwduetkr vkqp."cmqvo gpv'y km'dg'qp'r tqr qt vkqpcvg'dcuku'cu'f gvckrgf 'wpf gt 'õDcuku' qh'Cmqvo gpvö'kp'ij g'ej cr vgt 'vkurgf '\$Kuuwg'Rtqegf wtg\$'dgi kppkpi "qp'r ci g'3: 8"qh'vj ku'F tchv'Rtqur gewu0'Kp'ecug'qh'qxgt/uwduetkr vkqp'kp'cm'ecvgi qtkgu'vj g'cmqecvkqp'kp'ij g'Kuuwg'uj cm'dg'cu'r gt'vj g'tgs wktgo gpvu'qh'Tgi wrcvkqp'475'*4+"qh'UGDK' *KEFT+"Tgi wrcvkqpu."cu'co gpf gf 'htqo 'vko g'vq'vko g0'
- 490 Cp"qxgt/uwduetkr vkqp"vq"y g"gz vgpv'qh'32' "qh''y g"P gv'Kuwg"ecp"dg"tgvckpgf "hqt"y g"r wtr qug"qh''tqwpf kpi "qlth'vq"y g" pgctguv'kpvgi gt"f wtkpi "hkpcrk kpi "y g'cmqvo gpv."uwdlgev'vq"o kpko wo "cmqvo gpv."y j kej "ku'yj g'o kpko wo "cr r nkecvkqp"ukl g" kp"y ku'Kuwg0Eqpugs wgpvn(."y g'cewcn'cmqvo gpv'o c{"i q'wr "d{"c'o czko wo "qh'32' "qh'y g'Kuwg."cu'c'tguwn'qh'y j kej ." y g"r quv'Kuwg"r ckf "wr "ecr kcn'chygt"y g'Kuwg"y qwrf "cnuq"kpetgcug"d{"y g"gzeguu"co qwpv'qh'cmqvo gpv'uq"o cf g0'Kp'uwej "cp"gxgpv."y g'Gs wkx{"Uj ctgu"j grf "d{"y g"Rtqo qvgtu"cpf "uwdlgev'vq"nqem'kp"uj cm'dg'uwkxcdn{"kpetgcugf ="uq"cu"vq"gpuwtg" y cv'42' "qh'y g'r quv'Kuwg"r ckf/wr "ecr kcn'ku'nqengf "kp0'
- 4:0 Qwt"Eqorcp{"jcu"pqv"tckugf"cp{"dtkfig"mqcp"cickpuv"yjg"rtqeggfu"qh"vjku"Kuuwg0'Jqygxgt."fgrgpfkpi"qp"dwukpguu"tgswktgogpvu."yg"okijv'eqpukfgt"tckukpi"dtkfig'hkpcpekpi "hcekkkgu."rgpfkpi"tgegkrv'qh'vjg"Pgv'Rtqeggfu0'
- 4; 0 Qwt "Eqorcp{ "wpf gt wngu" y cv'cv'cp{ "i kxgp" wog." y gtg" uj cm'dg" qpn{ "qpg" f gpqo kpc wqp "hqt" qwt "Gs wkw{ "Uj ctgu." wpnguu" qyi gty kug" r gto kwgf "d{ "ncy 0"
- 520 Vj g"wpuwduetkdgf "r qt vkqp" kp" cp{ "tgugtxgf "ecvgi qt{ "%th" cp{+"o c{ "dg" cf f gf "vq" cp{ "qvj gt "tgugtxgf "ecvgi qt{0" "
- 530 Vj g"wpuwduetkdgf "r qtvkqp"kh"cp{. "chwgt"uwej "kpvgt"ug"cf lwuvo gpvu"co qpi "vj g"tgugtxgf "ecvgi qtkgu"uj cm'dg"cf f gf "dcem'vq" yj g"pgv'kuuwg"vq"vj g"r wdnke"r qtvkqp0'
- 540 Qwt 'Eqorcp{ 'uj cm'eqorn('y ky 'uwej 'ceeqwpvkpi 'cpf 'f kuenquwtg'pqtou'cu'ur gekhkgf 'd{ 'UGDK'ntqo 'vkog'vq'vkog0'
- 550 Vj gtg"ctg"pq"Gs wkx{ "Uj ctgu"ci ckpuv"y j kej "f gr qukxqt { "tgegkr vu"j cxg"dggp"kuuwgf 0"
- 560 Cu'r gt 'TDK'tgi wrc klqpu. ''QEDu'ctg''pqv'cmqy gf ''vq'r ct klekr c vg'kp''vj ku'kunwg''''
- 570 Vj ku'Kuuwg'ku'dgkpi 'o cfg'vj tqwi j 'Hkzgf'Rtkeg'Kuuwg'''
- 580 Kp"\gto u"qh"Twg"3; *4+\d-\frac{n}{k}-\delta h"\k-\delta h"\kgu"Eqp\tce\u"\Tgi wrc\kqp+\Twgu."3; 79."cu"co gpf gf."\delta j g"\UETT+\delta j g"\Umang" ku"wg" ku"\dgkpi "o cf g"\delta t"cv"rgc\under\delta 7' "qh"\delta j g"r quv\kurwg"r ckf/wr "Gs\uk\delta "\Uj\ctg"ecr\kcn"qh\delta Teqo r cp{0H\undert\delta y\text{ tu} \wedge ku"\delta kurwg"\ku" dg\under\delta i o cf g"\delta \delta t\delta t'\delta i g"\UGD\under\delta FT+\Tgi wrc\delta qpu."423: ."cu"co gpf gf "\taqo "\delta g'\delta \delta g\text{ tu} \delta \delta
- 590 Pq"r gtuqp"eqppgevgf "y kj "vj g"Kuwg"uj cm"qlhgt"cp{ "kpegpvkxg."y j gvj gt "f ktgev"qt "kpf ktgev."kp"vj g"pcwttg"qh"f kueqwpv." eqo o kuukqp. "cpf "cmqy cpeg. "qt"qvj gty kug. "y j gvj gt "kp"ecuj . "nkpf . "ugtxkegu"qt "qvj gty kug. "vq"cp{ "Crrnkecpv0" ..."
- 5:0 P qpg "qh"qwt "Rtqo qvgtu"cpf "Rtqo qvgt" I tqwr "y km"r ctvkekr cvg"kp" y g"Kuuwg0"



5; 0 Qwt"Eqo r cp{"uj cm'gpuwtg"\j cv'\tcpuce\lqpu"\p"\j g"Gs wkv{"Uj ctgu'd{"\j g"Rtqo q\gtu"cpf "\j g"Rtqo q\gt" tqwr "dgw ggp" y g"f c\g"\qt"\pti kulpi "\j ku"F tchv'Rtqur gewu"cpf "\j g"Kuwg"Enqulpi "F c\g"\uj cm'dg"tgr qt\gf "\q"\j g"U\qem'Gzej cpi g"y kj \p" y gp\{/hqwt"j qwtu"qh'uwej "\tcpuce\lqp"

" "



UGEVKQP'XKK?RCTVKEWNCTU'QH'VJ G'KUWG''

QDLGEVU'QH'VJ G'KUWG"

Vjg"Kuuwg"eqortkugu"qh"c"htguj"Kuuwg"qh"wrvq"6.38.622"Gswkx{"Ujctgu"qh"qwt"Eqorcp{"cv"cp"Kuuwg"Rtkeg"qh"]_"rgt"Gswkx{"Ujctg0"

Ht guj 'Kuwg''

Vj g'f gvcku'qh'vj g'r tqeggf u'qh'vj g'Htguj 'Kunng'ctg'uwo o ctk gf 'dgnqy <'

* 'kp'Ncmj u+"

Rct dewetu'	Co qwpv''
I tquu'Rtqeggf u'htqo ''y g'Htguj 'Kuwg''] _"
Nguuk Knwg 't grovgf 'gzr gpugu, "] _"
P gv'Rtqeggf u'qh'vj g'Htguj "Kuwg"] _"

Tgs wkt go gpv'qh'Hwpf u''

Qwt'Eqorcp{'kpvgpfu'vq'wkrkkg'vjg'Pgv'Higuj'Kuwg'Rtqeggfu'hqt'vjg'hqmqykpi'Qdlgewi'võQdlgewi'qh'vjg'Kuwgö⊢<

- c+ Hwpf kpi "ecr kıcıı"gzır gpf kwt.g"\qy ctf u'l\puvcınc\kqp"qh'r rcpv'("o cej kpgt { "kp"qwt "gzkırkpi "r tgo kıgu'''
- $e + \quad I \ gpgtcn' Eqtr qtcvg' Rwtr qugu 0'$

Kp"cffkkqp"vq"y g"chqtgo gpvkqpgf "qdlgevu."qwt"Eqorcp{"kpvgpfu"vq"uvtgpiy gp"kuu"ecrkscn"dcug"cpf "gzrgevu"vq"tgegkxg"y g"dgpghkuu"qh"hknkpi "qh"y g"Cs wkx{"Uj ctgu"qp"y g"Uvqem"Gzejcpigu."kpenwfkpi"coqpi"qyjgt"y kpiu."gpjcpekpi"y g"xkukdkrkx{"qh"qwt"dtcpf"cpf "qwt"Eqorcp{"coqpi"qwt"gzkurkpi"cpf"rqygpvkcn"ewuvqogtu0"

Y g"dgrkgxg"ý cv'rkuskpi "y kni'gpj cpeg"qwt"eqtr qtcvg"ko ci g"cpf "dtcpf "pco g"cpf "etgcvg"c"r wdrke"o ctngvihqt"Gs wks{"Uj ctg"qh" qwt "Eqo r cp{"kp" kpf kc" cpf "y kni'hwty gt" gpcdrg" wu" q" cxckri'hwwtg" i tqy yi "qr r qtwpkskgu0' Y g" ctg" kp" yi g" dwskpguu" qh" o cpwhcewtkpi "cpf "uwr r n{kpi "hcdtkecvgf "r ctwl"cpf "r tguu"r ctwl"rkng" Vgrgeqo o wpkecvkqp"r ctwl"f kgugni'gpi kpg"r ctwl."f kgugni'gpi kpg"dtcengvu. "Y gki j dtkf i gu."f ggr "f tcy p"r ctwl0'Y g"r quuguu'c'ur gekcns{"qh'j qvf kr"i crxcpk kpi "qh'o gxch'r ctwl'y j kej "ku'y g" tgcuqp"y g" j cxg"c" i qqf "pgw qtm' vgrgeqo "kpf wwt {."pco gn{"Eqo o Ueqr g"I tqwr."y j kej "ku"WUC" dcugf "i tqwr "cpf" ctg" eqpukf gtgf "cu"qpg"qh"y g"y qtrf "rgcf gtu"kp"yi gkt "tgur ge-kxg"hkgrf 0'Vj g"o ckp"qdlgev'encwug"cpf "yi g"cpekrut {"qdlgev'encwug"qh" yi g'O go qtcpf wo "qh'Cuuqekcvkqp"qh'qwt "Eqo r cp{"gpcdrg'wu'\q'wpf gt vcng'qwt "gzknrkpi "cevkxkkgu'cpf" yi g"cevkxkkgu'hqt'y j kej "y g"ctg"tckukpi "hwpf u"yi tqwi j "yi g" Kurwg0' Vj g"gzknrkpi "cevkxkkgu"qh"qwt"Eqo r cp{"ctg"y kyi kp" yi g"qdlgev'encwug"qh"qwt" O go qtcpf wo 0"

Uej gf wrg'qh'Ko r ngo gp vc vlqp'qh'P gv'Ht guj 'Kunwg'Rt qeggf u''

Vj g'P gv'Htguj 'Kuwg'Rtqeggf u'ctg'r tqr qugf '\q'dg'\wgf 'lp'\j g'o cppgt '\gv'qw'lp'\j g'hqmqy kpi '\cdng<'

* 'kp'hcmj u+''

Ut0' Pq0'	Rct vlewret u''	VqvcriGusko cvgf '' Gzr gpf lswt g'tq'' dg'hspf gf 'lt qo '' IRQ'Rt qeggf u''	Gundo cvgf 'f gr m{ o gpv'hh' P gv'Rt qeggf u'd{ 'tj g'' Hlpcpekcn[gct 'gpf gf '' O ct ej '53.'4246''	Gudo cvgf 'f grm{ o gpv'dh' Pgv'Rt qeggf u'd{ 'tj g'' Hlpcpekcn[gct 'gpf gf '' O ctej '53.'4247''
3"	Hwpf kpi "Ecrken' Gzrgpf kwtg" vqy etf u'kpuvemevkqp"qh'Rrepv'(" Ocej kpgt {"kp"qwt"gzkuvkpi" rtgo kugu"		72@2"	;: 87"
4"	Y qtmkpi 'Ecrkxcn'Tgswktgo gpvu''	422@2"	72@2"	372022"
5"	I gpgtcn'Eqtrqtcvg'Rwtrqugu"] _"] _"] _"
"	Vqven'] _"] _"] _"

Upeg. 'lý g'gpvktg'hwpf 'tgs wktgo gpv'ctg'hwpfgf 'lt qo 'lý g'rt qeggf u'qh'lý g'Kunwg. 'lý gtg'hu'pq'tgs wktgo gpv'lq'b cng'hkto ''
cttcpi go gpvu'qhhhpcpeg'wpfgt 'Tgi wrcvkqp'452*3+½+\qh'lý g'UGDKNEFT'Tgi wrcvkqpu'lý tqwi j 'kgthhcdng'b gcpu'lqy ctfu''
cv'lgcuv'97' 'qh'lý g'locvgf'b gcpu'qhhhpcpeg. 'gzenwfhpi 'lý g'co qwpvu'lq'dg'tchugf 'lý tqwi j 'lý g'rt qr qugf 'Kunwg0''



Vj g'hwpf "tgs wktgo gpvu"ctg"dcugf "qp"kpvgtpcn'o cpci go gpv"gurko cvgu"cpf "j cxg"pqv"dggp"crrtckugf "d{"cp{"dcpm'qt"hpcpekcn" kpurkwrkqp"qt"cp{"qvj gt kpf gr gpf gpv"ci gpe{0"Vj gug"ctg"dcugf "qp"ewttgpv"eqpf kkqpu"cpf "ctg"uwdlgev"q"ej cpi g"kp"vj g'nki j v"qh"ej cpi gu"kp"gzvgtpcn'ektewo uvcpegu"qt"equru"qt "qvj gt"hpcpekcn'eqpf kkqpu"cpf "qvj gt"gzvgtpcn'hcevqtu0"

Cu"y g"qr gtcvg"kp"eqo r gvkkxg"gpxktqpo gpv."qwt "Eqo r cp{"o c{"j cxg"vq"tgxkug"ku"dwukpguu"r ncp"htqo "vko g"vq"vko g"cpf" eqpugs wgpvn{"qwt"hwpf "tgs wktgo gpvu"o c{"cnuq"ej cpi g0'Qwt "Eqo r cp{ øu"j kunqtkecn'gzr gpf kwtg"o c{ "pqv'dg"tghngevkxg"qh'qwt" hwwtg"gzr gpf kwtg"b ncpu'0Qwt "Eqo r cp{"o c{"j cxg"vq"tgxkug"kuu'guvko cvgf "equvu."hwpf "cmqecvkqp"cpf "hwpf "tgs wktgo gpvu"qy kpi " vq"xctkqwu"ncevqtu"uwej "cu"geqpqo ke"cpf "dwukpguu"eqpf kkqpu. "kpetgcugf "eqo r gvkkqp"cpf "qvj gt "gzvgtpcn"ncevqtu"y j kej "o c{" pqv'dg"y kyj kp"yj g"eqpvtqn'qh'qwt"o cpci go gpv0'Vj ku'o c{"gpvckn'tgwej gf wrkpi "qt'tgxkukpi "yj g"r ncppgf "gzr gpf kwtg"cpf "hwpf kpi " tgs wktgo gpvu. "kpenwf kpi "yj g"gzr gpf kwtg"hqt"c"r ctvkewrct"r wtr qug"cv'yj g"f kvetgykqp"qh'yj g"Eqo r cp{øu"o cpci go gpv0'V

Hqt'hwt y gt "f gvckru"qp "y g't kumi'kpxqrxgf "kp"qwt "dwukpguu'r rcpu"cpf "gz gewkpi "qwt "dwukpguu'uvt cvgi kgu. "r rgcug"ugg "y g "ej cr vgt " vkrgf "õ*TkunHtc evqt uö "*dgi kppkpi "qp"r ci g"46"qh'y ku'F tchv'Rtqur gewu0'

F gvckn/qh/Qdlgev/qh/tj g'Kuwg''

3+ Hwpf kpi 'Ecrken'Gzrgpf kwtg'\qy ctf u'kpuwemevkqp"qh'Rrepv('O cej kpgt{'kp"qwt"gzkwkpi "rt go kugu"

Qwt'Eqo r cp{'ku'o cpwhcewtgt'cpf 'hwr r nkgt'qhh'hcdtkecvgf 'r ctwt'cpf 'r tguu'r ctwt'nkng"Vgrgeqo o wpkecvkqp'r ctwt' kgugn'gpi kpg'' r ctwt''f kgugn'gpi kpg''dtcengvu. "Y gki j dtkf i gu. "f ggr "f tcy p''r ctwt'j cxkpi ''ur gekcn\{ "kp"j qv'f kr ''i crxcpk\ kpi "qh'o gvcn'r ctwt'Y g" r tqr qug''q'ko r tqxg''y g''s wcnk\{ "cpf ''s wcpk\{ "qh''qwt''r tqf wewt'hqt''y j kej ''y g''kpvgpf ''q''kpuxcm'ncyguv'gs wkr o gpv'cpf ''wpf gtvcng'' o qf khecvkqp"kp''y g''gzkuvkpi ''o cej kpg'cnqpi ''y kyj ''hgy ''pgy ''ci g''o cej kpgtkgut'Y g''dgnkgxg''y cv'yj g''uckf ''gs wkr o gpv'y knt'gpcdrg'' wu''kp''o cpwhcewtkpi ''dgwgt''s wcnk\{ ''r tqf wewt'y j kej ''y knt'kpetgcug''qwt ''ucrgu''cpf ''tgf weg''qwt 'f ktgev'gzr gpf kwtgut''

Guwko cvgf 'Equvu'"

C"dtkghlf guetkr vkqp"qhlguvko cvgf "equvlkpxqnxgf"ku"o gpvkqpgf "dgnqy <'''

Rrcpv'O cej lpgt { .'Elxln'Grgevt lecrlcpf 'Hcdt lecvlqp<"

Vjg"huv'qh"Rncpv'cpf"Ocejkpgt{"rtqrqugf"\q"dg"kpewttgf"ku"fgvckrgf"dgrqy<"

UtO' PqO'	EcrlscnGzrgpf kwtg'' Pcwtg''	F guet kr vkqp''	Co qwpv'lp'' *Ej lpgug'' [wcp+''	Со qwpv'' *Tu��\' Ncmj u+, ''	F gwku'կh'S wqwvkgp''
3"	Rrcpv'('O cej kpgt {"	Cpqfk, kpi "U{uvgo "	7.: 4.222"	8: 066"	S wqwdqp'tgegkxgf'htqo"
4"	Rrcpv'('O cej kpgt {"	Eqrqtkpi 'u{uvgo "	4.93.222"	530 9"	Itcpf'Korqtv'('Gzrqtv'Eq0'
5"	Rrcpv'('O cej kpgt {"	Eqqrepv'U{ uvgo "	6.33.222"	6: 055"	Nko kgf 'f cvgf 'F gego dgt '36 ^{y'."} 4245'xcnff 'hqt'8'o qpy u'htqo "
					f cvg"qh"s wqvcvkqp0"
"	Vqwn'		34.86.222"	36: 087''	"

, Ewtt gpe{ "eqpxgtukqp"tcvg"qliF gego dgt "52."4245"j cu'dggp"\cmpp"cv'3"Ej kpgug"[wcp? "3308"Kpf kcp"Twrggu0" &Vj g"co qwpv"kpenvf gf "kp"vj g"s wqwxkqp"o c{"dg"uwdlgev'\q"rt keg"t gxkukqpu."dcuku."kpvgt "cnkc."rt gxckrkpi "o ct mgv"eqpf kskqpu." rt keg'qhlt cy "o cvgt kcnu 'kpet gcug'kp"s czgulf wkgu'hgxkgf "d{"i qxgt po gpwn'cwoj qt kskgu0Kp"ecug'qh'cp kpet gcug'kp's wqvgf "co qwpv" mg"\q"c "rt keg"t gxkukqp."qwt "Eqo rcp{"y kn'dgct "vj g"f khgt gpeg"qwv'qh'kpvgt pcn'ceet wcnu"

Pqvgu<'/'"

- Y g"j cxg"eqpulf gt gf "ij g"cdqxg"s wqw lqpullqt "ij g"dwf i gwt {"gurko cvg"rwt r qug"cpf "j cxg"pqv"rwegf "qtf gt u'lqt "ij go 0' Vj g"cewwrlequr'qllrt qewt go gpv'cpf "cewwrllwr r nlgt lf gcngt "o c {"xct {0"}
- Cnd's wqvc vkqpu't gegkxgf "lt qo "\j g"xgpf qtu"o gpvkqpgf "cdqxg"ct g"xcnlf "cu"qp"\j g'f cvg"qh\j ku'Ftch\Rt qur gewu0J qy gxgt."

 y g'f cxg"pqv"gpvgt gf "kpvq"cp{ 'f glkpkikxg"ci t ggo gpvu"y kj "cp{ "qh\j gug"xgpf qtu"cpf "\j gt g"ecp"dg"pq"cuunt cpeg"\j cv\'j g"

 uco g"xgpf qtu"y qwif "dg"gpi ci gf "\q"gxgpwcnq" 'uwr rn\" "\j g"o cej kpgt kgul"gs wkr o gpv\qt "cv\'j g"uco g"equu0""



- Vj g'o cej kpgt { lgs wkro gpv'o qf gnu'cpf 's wcpvk\{ '\q'lag'r wtej cugf 'ct g'dcugf 'qp'\j g'rt gugpv'guko cvgu'\diqwt 'o cpci go gpv0' Vj g'Ocpci go gpv'uj cnt'j cxg'\j g''ngzkdkt\{ '\q't gxkug''uwej "guko cvgu'\dipmony kpi "dwv'pqv'hko kgf "\q''ej cpi g'qh'xgpf qt "qt" cp\{ 'o qf khecvkqp lcf f kkqp lf grgvkqp 'qh'o cej kpgt kgu'qt 'gs wkro gpv\c'cv'\j g''ko g'qh'cewcn'r rcego gpv'qh'\j g''qt gt 0'Kp''uwej "ecug. '\j g'Ocpci go gpv'ecp 'wkht\g'\j g''ut rnnu'qh'rtqeggf u. 'hticp\{.'ctkukpi "cv'\j g''\ko g'qh'cewcn'r rcego gpv'qh'\j g''qtf gt." vq''o ggv'\j g''equv'qh'uwej "qy gt 'o cej kpgt \{."gs wkro gpv'qt "wkhtkgu."cu''t gs wkt gf 0'Hwt vj gt o qt g. "hti'cp\{ "unt rnnu''ht qo "vj g" rt qeggf u't go ckpu''chgt 'o ggvkpi "vj g''uqvcn'equv'qh'o cej kpgt kgu."gs wkro gpv'cpf "wkhtkgu''hqt "vj g''chyt guc\f "rwt rqug."\j g" uco g'\y kn'dg''uugf 'hqt 'qnt 'i gpgt cn'eqt rqt cvg'r wt rqugu. "undl gev'\q'hko kv'qh'47' "qh'\j g''co qwpv't ckugf "d\{ "qwt 'Eqo rcp\{" vj tqwi j '\j ku'Kuwg0"
- Y g"ctg"pqv"ces wkt kpi "cp{"ugeqpf/j cpf "o cej kpgt{0"
- Vj g"s wqwckqpu't grkgf "wr qp"d{ "wu'lp"cttkxkpi "cv'ij g"cdqxg"equv'ct g"xcrlf "lqt"c"ur gelike"r gtkqf "qh'iko g"cpf "o c{ "wr ug" chgt "ij g"gzrkt { "qh'ij g"uckf" r gtkqf 0'Eqpugs wgpv' wr qp" y j kej ." vj gt g"eqwrf "dg"c" r quukdrg "guecrc kqp" lp" vj g"equv' qh' o cej kpgt kgu'rt qr qugf "iq"dg"ces wkt gf "d{ "wu'cv'ij g"cewwch'iko g"qh'r wt ej cug. "t guwnkpi "lp" lpet gcug' lp" ij g"gusko cvgf "equo" Hwt vj gt. "equv'y kn'idg" guecrc vgf "qp" ceeqwpv' qh'Rcenlpi "("Hqt y ctf kpi ." Vt cpur qt w vkqp. "Vt cpulv' Kpuwt cpeg. "Qevt qk' I" Gpvt { "wz"kh'cp{ "gve0'Uwej "equv'guecrc vkqp" y qwrf "dg"o gv'qwv'qh'qwt "kpvgt pcn'ceet wcno"

Rt qr qugf 'Uej gf wrg'hliko r ngo gpwcwlqp'''

Vj g'r tqr qugf "uej gf wrg"qh'ko r rgo gpvcvkqp"hqt"gzr cpukqp"qh'o cpwhcewtkpi "hcekrkkkgu"ku"cu"hqrnqy u<"

Rct dewct u'	Gurko cvgf	Gusto cvgf 'O qpvj 'qhi'		
	Eqo o gpego gpv''	Eqorgykqp''		
Qtf gt "qh'Rrcpv'('O cej kpgt { "	Hgdtwct { "4246"	Hgdtwct { "4246"		
F grkxgt { "qh'O cej kpgt kgu"	Cr tkd4246"	O c{ "4246"		
Kpuvcmcvkqp"('Gtgevkqp"qh'O cej kpgtkgu"	O c { "4246"	Lwn("4246"		
Vtk:n'Twp"cpf "T(F"	Cwi wuv'4246"			
Eqo o gtekn'Rtqf wevkqp"	dgt"4246"			

O gcpu'qh'Hpcpeg'''

Qwt'Eqo r cp{ 'r tqr qugu'\q'o ggv\ij g'gp\ktg'tgs wktgo gpv\qh'hmpf u'hqt'\ij ku'r tqr qugf 'Qdlgev\qh'\ij g'Kuwg'htqo '\ij g'P gv\Rtqeggf u' cpf "kp\gtpcn'ceetwcnu0'Ceeqtf kpi n\{."qwt"Eqo r cp{ "eqphkto u"\ij cv'\ij gtg"ku"pq"tgs wktgo gpv\'\q"o cmg"hkto "cttcpi go gpwu"qh' hkpcpeg"\ij tqwi j "xgtkhcdng"o gcpu"\qy ctf u"cv\'ngcuv\'97' "qh'\ij g"uvc\gf"o gcpu"qh'hkpcpeg."gzenwf kpi "\ij g"co qwpv\'\q"dg'tckngf" htqo "\ij g'Kuwg0'

4+ Vq'O ggv'Y qt mkpi 'Ecr kv:n'T gs wkt go gpvu''

 $Y \; kj \; "ij \; g"gzr \; cpukqp"qh"ij \; g"dwukpguu"eqo \; r \; cp \{"y \; kn"idg"kp"ij \; g"pggf "qh"cf \; f \; kkqpcn"j \; qtnkpi \; "ecr \; kcn"tgs \; wktgo \; gpw0"Y \; g"hwpf "c" o \; clqtkk{ "qh"qwt"j \; qtnkpi "ecr \; kcn"tgs \; wktgo \; gpw1"kp"ij \; g"qtf \; kpct{ "eqwtug"qh"dwukpguu"htqo "dqttqy \; kpi u"htqo "f \; ktgevqt"cpf "kpvgtpcn" ceetwcnt0"Qwt"Eqo \; r \; cp{ "tgs \; wktgu"cf \; f \; kkqpcn"y \; qtnkpi "ecr \; kcn"tqt "hwpf \; kpi "ku"kpetgo \; gpvcn"y \; qtnkpi "ecr \; kcn"tgs \; wktgo \; gpw1"cpf "tgrgcukpi "ij \; g"kpvgtpcn"ceetwcnt" \; gr \; m{ gf \; "kp"y \; qtnkpi "ecr \; kcn"0"$

Qwt'Eqo r cp{ 'r tqr qugu'\q' wkrk| g" ''72022"Ncmj ''qh'\j g"P gv'Rtqeggf u''lp''Hkuecn'4246"cpf " ''372022"Ncmj ''qh'\j g"P gv'Rtqeggf u''lp''Hkuecn'4246"cpf " ''372022"Ncmj ''qh'\j g"P gv'Rtqeggf u''lp''Hkuecn'4247'\qy ctf u'qwt'Eqo r cp{ øu'y qtmkpi 'ecr kcn'tgs wktgo gpw0Vj g''dcmcpeg'r qt\kqp''qh'qwt'Eqo r cp{ 'y qtmkpi 'ecr kcn'tgs wktgo gpw0Vj g''dcmcpeg'r qt\kqp''qh'qwt'Eqo r cp{ 'y qtmkpi 'ecr kcn'tgs wktgo gpw0''y g''htqo ''y g''y qtmkpi 'ecr kcn'tcekrkkgu''cxckrgf ''cpf ''kpvgtpcn'ceetwcm0Vj g''kpetgo gpwn''cpf ''r tqr qugf '' y qtmkpi 'ecr kcn'tgs wktgo gpw1''cpf ''ng{ ''cutwo r \kqpu'y ky ''tgur gev'\q''y g''f gvgto \kpc\kqp''qh'\y g''tco g''ctg''o gp\kqpgf ''dgrqy <''

* <u>'kp''nc nj u+</u>"

Rct vlewretu''	Octej '' 53.'4243''	O ctej '53.'' 4244''	Octej '53.'' 4245''	Ugr vgo dgt'' 52.'4245''	O ctej '53.'' 4246''	O ctej '53.'' 4247''
"	Tguvcvgf''	Tguvc vgf ''	Tguvcvgf''	Tguvc vgf ''	Gusto cvgf ''	Gusto cvgf ''
Ewttgpv'Cuugvu''	"	"	•	"	"	"
Kpxgpvqtkgu"	/"	40 7"	50,5"	4; 037"	54037"	620;"
Vtcf g'Tgegkxcdrgu"	/"	3570 9"	3720,3"	36; 046"	433048"	4; 3076"
Ecuj "cpf "Ecuj "Gs wkxcngpvu"	4087"	: \$6"	880 9"	88036"	420 4"	45052"
Uj qtv'Vgto 'Nqcpu'(" Cf xcpegu"	/"	2024"	3; 07: "	3702; "	53\&4"	74069"
Qyjgt 'Ewttgpv'Cuugvu''	/"	40 8"	80,9"	4504: "	: 5092"	77052"
Vqveri* K ''	4087''	36; Ø6"	46: 048''	4: 40, ''	59; 047''	6840 2"
"	"	"	"	"	"	"
Ewttgpv'Nkcdkkklgu''	"	"	"	"	"	"
Uj qt√vgto 'Dqttqy kpi u''	2"	2"	2"	2"	/"	/"



Vtcf g'Rc{cdrgu"	/"	; 9084"	323085"	335077"	359042"	327044"
Qyj gt 'Ewttgpv'Nkcdkrkkgu'	2036"	940 6"	; 50; : "	; 40, 3"	93059"	88045"
Uj qt√vgto "Rtqxkukqpu"	/"	60 6"	3; 04: "	4603: "	53054"	74069"
Vqwnl*H&"	2086''	39705''	4360;"	452086"	45; 0; "	4450,4"
Pgv'Y qtmlpi 'Ecrlscn'*K/*KK''	4073"	/47078"	55059"	74048''	35; 058"	45: 0 : "
Kpetgo gpvcnY qtmkpi '' Ecrkscn'	"	**	"	"	"	"
Hwpf kpi 'Rcwgt p<'	"	"	"	"	"	"
Kpvgtpcn'Ceetwcnu''	4073"	2"	55059"	74048"	:;058"	: 40 : "
Rctv'qh'vj g''RRQ''Rtqeggf u''	"	"	"	"	72@2''	372022''

Cuuwo r skapu'hat 'y at mkpi 'ecr ksc dt gs wkt go gp v''

Cuuwo r vkqpu'hqt'J qnf kpi 'Ngxgnu''

 $'*Ko'fc{u+''}$

Ret wewet u'	J qrf kpi 'tgxgri' cu'tp'O ctej '' 53.'4243''	J qrf kpi 'hgxgrl' cu'qp'Octej '' 53.'4244''	J qrf lpi 'lgxgrl' cu'qp'O ctej '' 53.'4245''		J qrf kpi 'hgxgrl' cu'qp'O ctej '' 53.'4247''
Ewttgpv'Cuuguu''	"	"	"	"	"
Kpxgpvqtkgu"	2"	32"	8"	55"	4: "
Vtcf g'Tgegkxcdrgu"	2"	578"	375"	375"	356"
Ewttgpv'Nkcdkdskgu''	"	"	"	"	"
Vtcf g'Rc { cdrgu"	2"	848"	429"	39; "	; 4"

Lwwhitecvkqp'hqt'I qrfkpi'Rgtkqf'Ngxgnu''

Rct vlewrct u''	Fgvcki'
Kpxgpvqtkgu'"	Kpxgpvqt { "j qnf kpi "r gtkqf "y cu'8"f c { u'hqt 'hkpcpekcn' { gct '4244/450"Y g'j cxg''cuuwo gf ''cp'kpetgcugf "
	j qnfkpi "rgtkqf"qh"55"fc{u"hqt"hkpcpekcn"{gct"4246"cpf"4: "fc{u"hqt"4247"cuuwokpi "vjcv'yg"ykm"
	tgs wktg"o qtg"tcy "o cvgtkcnı'vq"f grkxgt kpetgcugf "qtf gtu"cu"c "tguwn/qh"kpetgcug kp"wtpqxgt0"
Vtcf g'T gegkxcdrgu"	Qwt"fgdvqt"jqrfkpi"rgtkqf"ycu"375"fc{u"kp"hkpcpekcn"{gct"4245"cpf"yg"kpvgpf"vq"kortqxg"yg"
	uco g"lip"eqo lipi "{gctu"d{"dgwgt"o cpci go gpv"eqpvtqr0Y g"guwlo cvg"tgeglxcdrg"r gtliqf "vq"dg"375"
	f c{u'hqt'hhpcpelcn' {gct''4246''cpf ''356''f c{u'lxp'hxpcpelcn' {gct''42470'
Vtcf g'Rc{cdrgu"	Qwt '\tcf g'r c{cdrg'ku'429'f c{u'hqt'O ctej '53.'4245'cpf 'y g'gunko cvg'kv'\q'dg'39; 'f c{u'kp'hkpcpekcri'
	gct"4246"cpf"; 4"fc{u"kp"hkpcpekcn"{gct"42470"Qwt"etgfkxqt"rgtkqf"ku"tgncvkxgn("jkijgt"cu'yg"igv"
	dgwgt "etgf kv" vgto u 'htqo "qwt 'uwr r nkgtu" cu 'r gt "yj g "kpf wuxt { "pqto u0"

4243'htqo "yj g"Tgurcygf 'Hlpcpekcn'lYphqto cykqp'cpf 'y qtmkpi 'ecr kscn'gurko cygu'hqt'yj g'hlpcpekcn'lYgtc' (stej '53.'4246'cpf '4247'' cu''cr r tqxgf 'd { ''y g 'Dqctf 'r wtuwcpv'\q 'ku'tguqnwkqp'f cygf 'F gego dgt '48. '42450'

5+ I gpgtcn/Eqtrqtcvg'/Rwtrqugu''

Vj g'P gv'Rtqeggf u'y km'dg'hktuv'wkrk gf ''vqy ctf u''y g''Qdlgevu''cu''o gpvkqpgf ''cdqxg0'Vj g''dcrcpeg'P gv'Htguj ''Kuwg''Rtqeggf u''vq'' $\label{eq:continuity} yi g''wpg''qh'' \quad] \quad _''Ncmj \ u''ku''r \ tqr \ qugf \ ''q''dg''wkrk \ gf \ ''hqt''i \ gpgtcn''eqtr \ qtcvg''r \ wtr \ qugu. ''uwdlgev''vq''uwej \ ''wkrk \ cvkqp''pqv''gzeggf \ kpi \ '' \ and \ '$ $47' \quad \text{"qh''y'} \ g''P \ gv''Rt qeggf \ u. \text{"kp''eqo} \ r \ \text{rkcpeg''y'} \ k j \quad \text{"y'} \ g''UGDK''' KEFT+''T gi \ wrc \ \text{kqpu}. \ \text{"}423: 0'Qwt'' Eqo \ r \ cp \{ \text{"kpvgpf } u \text{"vq''f } gr \ rq \{ \text{"y' } g'' \text{ } g'' \text{$ o cpci go gpv. kpenví kpi "dw'pqv't guvt kevgí "vq. "vj g'hqmy kpi <"

*k+ Utcvgi le'lpkkcvkxgu"

Dtcpf "dwkrf kpi "cpf "urtgpi yi gpkpi "qh"o ctngvkpi "cevkxkkgu="cpf ""

Qp/i qkpi 'i gpgtcn'eqtrqtcvg'gzki gpekgu'qt'cp{ 'qvj gt'r wtrqugu'cu'crrtqxgf 'd{ 'vj g'Dqctf 'uwdlgev'vq'eqornkcpeg'y kj " *kk+ yj g'pgeguuct { 'tgi wrcvqt { 'r tqxkukqpu0'

Vj g's wcpwo "qh'wkrk ckqp"qh'hwpf u'\qy ctf u'gcej "qh'\j g'cdqxg'r wtr qugu'y km'dg'f gygto kpgf "d{ "qwt"Dqctf "qh'F ktgevqtu'dcugf " qp"yj g"r gto kulkdrg"co qwpv'cewcm("cxckredrg"wpf gt"yj g"j gcf "õI gpgtcri'Eqtr qtcvg"Rwtr quguö"cpf "yj g"dwulpguu"tgs wktgo gpwu" qh'qwt "Eqorcp{."htqo "vkog"vq"vkog0"Yg."kp"ceeqtfcpeg"ykj "vjg"rqnkekgu"qh'qwt "Dqctf."ykntjcxg"hrgzktlktk{ "kp"wkrk{kpi "vjg" P gv'Rtqeggf u'hqt"i gpgtcn'eqtr qtcvg"r wtr qugu. "cu'o gpvkqpgf "cdqxg0"



Rt qr qugf '[gct 'y kug'F gr m{o gpv'qh'Hwpf u'l'Uej gf wug'qh'Kor ngo gpvcvkqp'''

 $\label{eq:linear_var_sum} Vj \; g"gp\ktg"P\; gv'Htguj \; "\textit{Kuwg}"Rtqeggf\; u"ctg"r\; tqr\; qugf\; "\q"dg"f\; gr\; m\\ \{gf\; "\p"'j\; g"Htpcpekcn"[\;\; gct" 4245/46"cpf\; "4246"6"470" + 1000" + 1$

Rwdrle'Kurwg'Gzrgpug''

twante iss

Vj g" gurko cvgf " Kurwg" tgrcvgf " gzr gpugu" kpenxf g" Kurwg" O cpci go gpv' Hgg." O ctngvkpi " Hgg." Wpf gty tkkkpi " cpf " Ugntkpi " Eqo o kuukqpu. "Rtkpvkpi "cpf "F knvtkdwkqp" Gzr gpugu. "Ngi cn' Hgg." Cf x gtvkugo gpv' Gzr gpugu. "Tgi knvtctøu ' Hggu. "F gr quksqt { "Hgg" cpf "Nkrvkpi "Hgg0' Vj g" vqvcn' gzr gpugu "hqt "vj kn' Kurwg" ctg" gurko cvgf " vq" dg" cr r tqzko cvgn { " "] _"Ncnj u0' Cm' vj g" Kurwg" tgrcvgf " gzr gpugu 'uj cm' dg" o gv' qw' qh' vj g' r tqeggf u'qh' vj g' Kurwg" cpf "vj g' dtgcm' vr "qh' vj g' uco g' ku' cu' hqmy u<"

Rct vlewrct u'	Gzrgpugu'' * 'Ko'Ncnj +''	' 'qhVqvcn' Qhgt 'Gzr gpugu''	' 'qh'Vqvcn' Qhgt 'tik g''
Rc{o gpv'vq''y g'Ngcf 'O cpci gt"] _"] _"] _"
O ctngv'O cnlpi "Hggu"] _"] _"] _"
Wpf gty tkkpi "Hggu"] _"] _"] _"
Hggu'r c{cdrg'\q'Tgi kıntct'\q'Kunvg''] _"] _"] _"
Hggu'\q'Ngi cn'Cf xkuqt"] _"] _"] _"
Cfxgtvkugo gpv'Gzrgpugu"] _"] _"] _"
Hggu'r c{cdrg'\q'Tgi wrc\qtu'kpenxfkpi "UqentGzej cpi g"] _"] _"] _"
Rtkpvkpi '('Fkuvtkdwkqp'Gzrgpugu''] _"] _"] _"
Octnyskpi "("Ugmkpi "Gzr gpugu"] _"] _"] _"
Rc{o gpv'\q'Ur qpuqt'Dcpni'] _"] _"] _"
Ucwwqt{'('Qyj gt'Tgrqtwl''] _"] _"] _"
Vqveri'] _"] _"] _"

^{, , &}quot;UEUDu'y knddg"gpvkngf "\q"c"rtqeguukpi "lgg"qk"] _"rgt"Crrnkecvkqp"Hqto 'hqt"rtqeguukpi "qk'yj g'Crrnkecvkqp"Hqto u'rtqewtgf" d{"qyj gt"Crrnkecvkqp"Eqngevkpi "Kpvgto gf kct{"cpf" luwdo kwgf" \q"i go 0"

Ugnkpi "eqo o kukqp"rc{cdng"vq"Tgi kwgtgf "dtqngt."UEUDu."TVCu."EFRu"qp"vj g"rqtvkqp"f ktgevt["rtqewtgf "htqo "Tgwktl" kpf kxkf wcnlCrrnkecpvu"cpf "Pqp/KpukkwvkqpcnlCrrnkecpvu."y qwnf "dg"] _' "qp"vj g'Cnqvo gpv'Co qwpv/aqt"] _'y j kej gxgt 'ku'nguu" qp"vj g'Crrnkecvkqpu'y j gtgkp"vj ctgu"ctg"cnqwgf 0'

Vj g"eqo o kudqpu"cpf "rtqegudpi "lggu"uj cm'dg"rc{cdrg"y kj kp"52"y qtmkpi "fc{u"rquv'vj g"fcvg"qh't gegkrv'qh'lkpcn'lpxqkegu"qh' vj g"t gur gevkxg"kpvgt o gf kct kgu0"

"Ko qwpv'Cnqwgf 'ku'\j g'r t qf wev'qh\j g'pwo dgt ''qh\Gs wk\f ''Uj ct gu'Cnqwgf ''cpf '\j g'Kuwg'Rt keg0'

Crrtckend ('Crrtckepi 'Hwpf'''

"

 $\label{eq:power_power} Pqpg"qh" yi g"Qdlgew" j cxg" dggp"crrtckugf" d{"cp{"dcpn"qt" hpcpekcn" kpukkwkqp"qt"cp{"qyi gt"kpf gr gpf gpv" yi ktf /r ctv{"qti cpk{ cvkqp0"Vj g"hwpf kpi "tgs wktgo gpw"qh"qwt"Eqo r cp{"cpf "yi g"f gr qq o gpv"qh"yi g"r tqeggf u"qh"yi g"Kuwg"ctg"ewttgpv{"dcugf "qp"o cpci go gpv"guko cvgu0"Vj g"hwpf kpi "tgs wktgo gpw"qh"qwt"Eqo r cp{"ctg"f gr gpf gpv'qp"c"pwo dgt"qh"hcevqtu"y j kej "o c{"pqv"dg"kp"yi g"eqpvtqn"qh"qwt"o cpci go gpv."kpenwf kpi "xctkckqpu"kp"kpvgtgw'tcvg"uvtwewtgu."ej cpi gu"kp"qwt"hkpcpekcn" eqpf kkqp"cpf "ewttgpv"eqo o gtekcn"eqpf kkqpu"cpf "ctg"uwdlgev"vq"ej cpi g"kp"rki j v"qh"ej cpi gu"kp"gz vgtpcn"ektewo uvcpegu"qt"kp" qwt "hkpcpekcn"eqpf kkqp."dwukpguu"qt "uvtcvgi {0'}$

Uj qt vhc miqhi Hwpf u''

Cp{"uj qt \hcmlkp"o gg\kpi "vj g'hwpf 'tgs wktgo gp\u'y km'dg"o gv'd{"y c{"qh'kp\gtpcn'ceet\wcnu'cpf "lqt 'wpugewtgf 'Nqcpu0'

Dtlf i g'Hlpcpelpi 'Hceldslgu''

יי

••

Cu'qp''y g''f cvg''qh''y ku''F tchv'Rtqur gewu. "y g''j cxg''pqv'tckugf "cp{"dtkf i g''nqcpu."y j kej "ctg''r tqr qugf "'q''dg''tgr ckf ''htqo "'y g''P gv'' Rtqeggf u0'J qy gxgt."y g''o c{"f tcy "f qy p"uwej "co qwpw."cu''o c{"dg''tgs wktgf."htqo "cp"'qxgtf tchv''cttcpi go gpvl''ecuj "etgf kv'' hcekrkv{ "y ky "qwt''ngpf gtu."\q''hpcpeg''cf f kwlqpcn'y qtmkpi "ecr kxcn'pggf u'wpvkn'y g''eqo r ngwlqp''qh'y g''Kunwg0''

...



O qplsqt lpi 'Wlkk cvkqp'qh'Hwpf u''

Cu'ý g'uk g'qh'ý g'Hrguj 'Kuwg'f qgu'pqv'gzeggf '' 32.222'Ncnj u.'kp'vgto u'qh'Tgi wrcvkqp'484'qh'ý g'UGDK*KEFT+'Tgi wrcvkqpu.'' 423: .''qwt ''Eqo r cp{ ''ku'pqv'tgs wkrgf ''vq''cr r qkpv'c''o qpkqtkpi ''ci gpe{ ''hqt''ý g''r wtr qugu''qh''ý ku''Kuwg0'Qwt ''Dqctf ''cpf ''Cwf kv' Eqo o kwgg'uj cm'o qpkqt''ý g''wkrk cvkqp''qh'ý g''P gv'Rtqeggf u0'

Kovgt ko 'Wig'qh'Rt qeggf u''

Rgpf lpi "wkrk cvkqp"qh"yj g"Kuwg"r tqeggf u"qh"yj g"Kuwg"hqt"yj g"r wtr qugu"f guetkdgf "cdqxg."qwt"Eqo r cp{ "y kmif gr qukv"yj g"P gv" Rtqeggf u"y kj "uej gf wrgf "eqo o gtekcn"dcpmu"kpenwf gf "kp"uej gf wrg"KKqh"yj g"TDKCev0"

Qwt'Eqo r cp{ 'eqphto u''y cv'kv'uj cm'pqv'wug''y g'P gv'Rtqeggf u'hqt''dw{ kpi .''tcf kpi ''qt''qyj gty kug''f gcnkpi ''kp''uj ctgu'qh''cp{ ''hungf'' Eqo r cp{ ''qt''hqt''cp{ ''kpxguvo gpv'kp''y g''gs wkv{ ''o ctngwu'qt''kpxguvkpi ''kp''cp{ ''tgcn'guvcyg''r tqf wev'qt''tgcn'guvcyg''nkpngf''r tqf wevu''0' ...

Xctkcvkqp'kp'Qdlgevu''

 $\label{eq:control_co$

Qvj gt 'Eqpht o cvkqpu'

Vj gtg"ctg"pq"o cvgtkcn"gzkuvkpi "qt"cpvkekrcvgf" vtcpucevkqpu"y kj "qwt"Rtqo qvgtu."qwt"Fktgevqtu."qwt"Eqo rcp{øu"Mg{"O cpci gtkcn"Rgtuqppgn"kp"tgrcvkqp"vq"vj g"wkrk|cvkqp"qh"vj g"P gv'Rtqeggf u0P q"rctv'qh"vj g"P gv'Rtqeggf u"y kmi'dg"rckf "d{"wu"cu" eqpukf gtcvkqp"vq"qwt"Rtqo qvgtu."qwt"Fktgevqtu"qt"Mg{"O cpci gtkcniRgtuqppgnigzegrv"kp"vj g"pqto cnieqwtug"qhi'dwukpguu"cpf"kp" eqo rnkcpeg"y kj "vj g"crrnkecdng"rcy u0"



DCUNU'HQT'NUUWG'RTNEG''

Kozguqtu'tij qwrf 'tgcf 'lj g'lqnqy kpi 'two o ct{'y kj 'lj g'ej crvgt 'kkngf '5TkunlHcevqtuö.'lj g'f gwku'cdqwv'qwt 'Eqo rcp{'' wpf gt 'lj g'ej crvgt 'lkngf '5Qwt 'Dwulpguuö'cpf 'ku'lhpcpekchlocvgo gpvu'kpf gt 'lj g'ej crvgt 'lkngf '5Hlpcpekchlocvgo gpvu'cu''
Tguocvgf ö'dgi kppkpi 'qp'rci gu'46.', 5"cpf '359't gur gevkxgnf 'ldtij g'Ftchv'Rtqur gevwuUVj g'ttcf kpi 'rtkeg'ldtij g'Gs wkv{'Uj ctgu'' qltQwt 'Eqo rcp{'eqwrf 'f genlpg'f wg'lq'ij gug't kunu'cpf 'lj g'kpxguqt'b c{'lqug'cmlqt 'rctv'qltj ku'kpxguoo gpvU''

Vj g'Kuwg'Rtkeg'j cu'dggp'f gvgto kpgf 'd{ 'vj g'Eqo r cp{ 'kp'eqpuwncvkqp'y kj 'vj g'Ngcf 'O cpci gt'qp'vj g'dcuku'qh'vj g'ng{ 'dwukpguu' uvtgpi vj u'qh'qvt'Eqo r cp{0'Vj g'hceg'xcnwg'qh'vj g'Gs wkw{ "Uj ctgu'ku" 32022'gcej "cpf "vj g'Kuwg'Rtkeg'ku"] __'vj kej 'ku'] __'vko gu' qh'vj g'hceg'xcnwg0'

S werksevkxg'Heevqtu''

Uqo g"qh"yi g"s wcrkxcvkxg"hcevqtu."y j kej "hqto "yi g"dcuku"hqt "yi g"Kuvwg"Rtkeg"ctg<

- 30' Gzr gtkgpegf 'Rtqo qvgtu'cpf 'O cpci go gpv'Vgco '''
- 40' Uecredrg'Dwukpguu'O qf gn'
- 50' Y kf g"cpf "F kxgtug"Tcpi g"qh"Rtqf wev'Qhhgtkpi "
- 60' O ctngvkpi '(''Dtcpf kpi 'Ghhqtvu''
- 70' Hqewu'qp'Kpetgcug'kp'Xqnwo g'qh'Ucrgu''
- 80' Kpetgcukpi 'y g'pwo dgt"qh'Erkgpw"
- 90' Dwkrf kpi /wr "cu"qp"Rtqhguukqpcn'Qti cpk cvkqp"
- : 0' Eqpvkpwg'\q'cwtcev'cpf 'tgvckp'\crgpv'

Hqt'hwtyj gt'f gycknu."ugg"õ*ThunHcewqt u*ö"cpf "õ*Qwt'Dwulp guu*ö"dgi kppkpi "qp"r ci gu"46"cpf "; 5. 'tgur gevkxgn(0'

S wcpvlscvlxg'Hcevqtu'

Ugo gʻqhʻyi gʻlphqto cvlqpʻr tgugpvgfʻlpʻyi kuʻej cr vgtʻluʻf gtkxgfʻltqoʻyi gʻTguvcvgfʻlhpcpekcnʻlfphqto cvlqpOʻHqtʻlmtyi gtʻlphqto cvlqp." uggʻoʻHlpcpekcn'lfphqto cvlqpoʻdgi lpplpi ''qp'r ci gʻ3590'

Uqo g'qh'y g's wcpukcukxg'hceuqtu'y j kej "o c{ 'hqto "vj g'dcuku'hqt"eqo r wkpi "vj g'Kuwg'Rtkeg'ctg'cu'hqmqy u<"

Dcuke 'Gctpkpi u'cpf 'F knwgf 'Gctpkpi u'r gt 'Gs wks{ "Uj ctg'*GRU+"cu'r gt 'Ceeqwpvkpi "Uvcpf ctf "42"''

Cu'r gt 'Tguwcygf 'HlpcpelcriUvcygo gpvu'*Rt g/Dqpwu+''

Rgt kqf ''	Dcule'cpf 'F knwgf 'GRU*lp'' +''	Y gli j v''
O ctej "53."4243"	*2067+"	3"
O ctej "53."4244"	67078"	4"
O ctej "53."4245"	3: 20; "	5"
Y gli j vgf 'Cxgtci g''	327@2"	11
Hqt" yj g" r gtlqf " htqo " Cr tkr" 23." 4245" vq" Ugr vgo dgt " 52." 4245" *P qv"	332 9 7"	
Cppwcnk gf +"		**

Cu'r gt 'Tgurc vgf 'HlpcpelcriUvc vgo gpwi'*Rquv'Dqpwu+''

Dcule'cpf 'F knwgf 'GRU'lp'' +''	Ygkij v''
*2023+"	3"
3069"	4"
70 6"	5"
5063''	11
5079"	,,
	+" *2@3+" 3@9" 70 6" 5@3"

[,] Pavgu<

30 Deuke"cpf "f knwgf "getpkpi ul"*quu+"rgt "gs wks{ "uj etg<"Deuke"cpf "f knwgf "getpkpi u"rgt "gs wks{ "uj etg"eqo rwsgf "kp" ceeqtf cpeg"y kj "Ceeqwpvkpi "Ucpf etf "42"6"6Getpkpi u"rgt "U etgö "knuwgf "d{ "vj g"Kpurkwwg"qhEj etvgtgf "Ceeqwpvcpvu"qh" Kof ke0"



40 Vj g't c kqu'j cxg'dggp'eqo r wxgf 'cu'dgrqy <'

- Dcuke 'GRUkı'ec newrcvgf 'cu'Rt qlkvPrquu+'lqt 'i j g' { gct lr gt kqf 'cwt kdwc drg 'i q' gs wlo{ 'i j ct gj qıf gt u'f kxlf gf 'd{ 'i j g'cf lwagf '' y gki j vgf "cxgt ci g"pwo dgt "dcuke"gs wk/ "uj ct gu"qwwcpf kpi "f wt kpi "vj g"{ gct lr gt kqf 0"
- Flowing GRUkul'ecrewic vgf "cu'Rt qlkvl"rquu+lqt "ij g'[gct lr gt kqf "cwt kdwcdrg" 'g "ks wksf "ij ct gj qrf gt u'f kxlf gf "d['ij g'cf lwungf " y gki j vgf "cxgt ci g"pwo dgt "qh'cf lwwgf "f kwngf "gs wk\f" lij ct gu"qwwccpf kpi "f wt kpi "\j g"{ gct lr gt kqf 0'
- 50′ Y gki j vgf "cxgt ci g"pwo dgt "qh'gs wkx{ "uj ct gu"ku" vj g"pwo dgt "qh'gs wkx{ "uj ct gu"qwuxcpf kpi "cv" vj g"dgi kppkpi "qh' vj g" {gct lr gt kqf "cf lwwgf "d{"vj g"pwo dgt "qhl'gs wkx{"uj ct gu"kuwgf "f wt kpi "vj g"{gct lr gt kqf "o wnkr rkgf "d{"vj g"kbo g"y gki j vkpi " kevqt0Vj g"iko g"y gki j ikpi "kevqt"ku"ij g"pwo dgt "qhf c{u'hqt"y j kej "ij g"ur gekke"uj ct gu"ct g"qwuncpf kpi "cu"c"r tqr qt ikqp" qh'\qvcn'pwo dgt "qh'f c $\{$ uf' wt kpi "\j g" $\{$ gct $\}$ r gt kqf \emptyset "
- 60 Y ghi j vgf "cxgt ci g'hu'ci i t gi cvg"qhl{ gct/y hug'y ghi j vgf "GRUf kxkf gf "d{ '\j g'ci i t gi cvg"qhly ghi j vu'klg0} *GRUz'Y ghi j v+lqt" gcej "{gct;"T'}Vqwdqhygkij w;0'

Hqt'lwtvj gt'f gvcku."ugg'ð **Qvj gt'Hkpcpek:nKphqto cvkqp**ö"qp"rci g'336"

Rt keg 1Gct plpi '*õR1Gö+'T cvkq'kp't grc vkqp'tq'tj g'Kunvg'Rt keg'qh'] _'r gt 'Gs vkv{ 'Uj ct g<'

Rct vlewet u''	RIG'cv'Kung'Rt leg'' *pqttjH'sko gu+''
Dcugf 'dp'Tguvcvgf 'HlpcpekcnlUvcvgo gpvu'	"
RIG"tokq"dougf "qp" yj g"Douke" ("Fknwgf"GRU."cu"t guvovgf "hqt"H["4244/45"] _"
RIG'tcvkq''dcugf "qp''y g''Y gki j vgf "Cxgtci g'Dcuke" ("F knwgf "GRU."cu'tgurcvgf"] "

Pqvg<Vj g'R1G'tcvkq'j cu'dggp'eqo rwxgf 'd{ 'f kxkf kpi 'Kunwg'Rt keg'y kj 'GRU'

Tgwtp'qp'Pgv'Yqtyj 'cu'rgt'Tgwcygf 'HoppekcnUcygo gpw'

Rgt kqf ''	TQPY '** +''	Y gli j v''
O ctej "53."4243"	*7093' +"	3"
O ctej "53."4244"	: 7039' "	4"
O ctej "53."4245"	9903; '"	5"
Y gli j vgf 'Cxgtci g''	88@5' ''	"
Hqt 'vj g'r gt lqf 'lt qo 'Crt ld23.'4245'vq'Ugr vgo dgt '52.'4245'*P qv'	5402:' ''	"
Cppwcnk gf +''		

Pqvg<'Vj g'TQPY 'j cu'dggp'eqo rwgf 'd{ 'f kxlf kpi 'pgv'rtqlkv'chgt '\cz'*cu't guacvgf +'d{ 'Pgv'y qtvj '*cu't guacvgf +'cu'cv'ij g'gpf'' qhyj g'{{ gct0'

Cu'r gt 'Tguwc vgf 'HlpcpelcriUvc vgo gpvu≺'

O kpko wo "tgwtp"qp"Rquv'Qhhgt"P gv'Y qtvj "vq"o ckpvckp"vj g"Rtg/Qhhgt"GRU*Rquv'Dqpwu+'hqt"vj g'hkpcpekcn'{gct"gpf gf "qp" 53[™]O ctej .'4245'6''] _' "

Pgv'Cungv'Xcnwg'*PCX+'rgt'Gs wkw{ 'Uj ctg''

Cu'r gt 'Tguwcygf 'HlpcpelcriUvcygo gpwl'*Rtg/Dqpwu+'''

Ut0' Pq0'	Rct vlewret u'	Qp'vj g'dculu'qh'T guvcvgf 'Hlpcpelcn' Uvcvgo gpvu'* +''
c+"	Cu''qp''O ctej ''53.''4243''	90,5"
d+"	Cu'qp'O ctej '53.'4244"	75072"
e+"	Cu''qp''O ctej "53."4245"	45606: "
f +"	Hqt"yj g"r gtlqf "Itqo "Crtkri23."4245"\q"Ugr vgo dgt"52."4245"	567045"

Cu'r gt 'Tguwc vgf 'Hlpc pelcriUvc vgo gpwl'*Rquv'Dqpwu+"

Ut0' Pq0'	Rct vlewet u'	Qp'\'j g'dculu'\qh'T guvc\vgf 'Hlpcpelcn' Uvc\vgo gp\vu'* +''
c+"	Cu''qp''O ctej "53."4243"	2048"
d+"	Cu'qp'O ctej '53.'4244"	395"
e+"	Cu''qp''O ctej "53."4245"	9078"
f +"	Hat "vig"r gtkaf "htqo" (Crtkri23."4245" va "Ugrvgodgt" 52."4245"	33\(\mathbb{G}\)6"



g+"	Pgv'Cungv'Xcnwg'rgt 'Gs wls{ 'Uj ct g'chygt 'vj g'Kunwg'cv'Kunwg'' Rt leg''] _"
h+"	Kung'Rt leg, ''] _"

Pqvgu<"

- 30 PCX'j cu'dggp'ecnewrcygf "cu'Pgv'y qtyj 'f kxlf gf "d{ 'pwo dgt "qh'Gs wkx{ "Uj ct gu'c v'yj g"gpf "qh'y g"{ gct 0" '
- 40' Pgv'cuugv'xcnwg"rgt "gs wk\{ "uj ct g"? "pgv'y qt yj "cwt kdwwcdng"\q"\y g"qy pgt u"qhl'yj g"rct gpv'cu"cv'\y g"gpf "qhl'y g"\{ gct lr gt kqf "
 f kxkf gf 'll { "cf lwungf "pwo dgt "qhl'gs wk\{ 'uj ct gu'qwnncpf kpi "cu"cv'\y g"gpf "qhl' { gct lr gt kqf 0'}
- 50 Pgv'y qtyj 'o gcpu'ij g'ci i t gi cvg'xcnwg'qh'ij g'r clf/wr'uj ctg'ecr kcnlcpf 'cmlt gugt xgu'et gcvgf 'qww'qh'ij g'r t qhku'cpf 'ugewt khgu" rt go kwo "ceeqwpv'cpf 'f gdkv'qt "et gf kv'dcrcpeg'qh'iwcvgo gpv'qh'r tqhkv'cpf 'rquu."chygt 'f gf werkpi 'vj g'ci i t gi cvg'xcnwg'qh'ij g" ceewo wrcvgf 'nquugu. 'f ghgt t gf 'gzr gpf kwt g'cpf 'o kuegrocpgqwu'gzr gpf kwt g'pqv'y t kwgp'qhlicpf 'pqp/eqpvt qntpi 'lpvgt guv."cu" r gt 'vj g'T guwcvgf 'Hhpcpekch'Kphqt o cvkqp. 'dww'f qgu'pqv'kpenwf g't gugt xgu'et gcvgf ''qww'qh't gxcrwcvkqp''qh'cuugvu. 'y t kg/'dcem'qh' f grt gekcvkqp''cpf ''co cni co cvkqp0'
- 60' Pgv'Y qty' "cpf" 'vj g"pwo dgt" qh'gs wks{"uj ctgu"cu"cv'vj g"gpf" qh'vj g"{gct lrgtkqf"j cxg"dggp"cf lwwgf" 'vq"i kxg"ghlgev" vq" y g" eqpugs wgpv" kpet gcug" kp" uj ctg" ecr kxn'qp" vj g"cuwo rvkqp" vj cv'qrvkqpu" qwwwxpf kpi "vq" uwduet klg" lqt" cff kkqpcn'gs wks{" ecr kxn' *KQO'qwwxpf kpi "uj ctg" y cttcpw' cpf "go rnq{gg" uwqem'qrvkqpu+" y j gt gxgt "crrnkecdng." y gt g"gzgt ekugf "kp" y g" tgur gevkxg" hpcpekcn' {gct lrgtkqf 0' Vj g" eqo rwxvkqp" eqpukf gt kpi " chqt go gpvkqpgf" ghlgew" j cu' dggp" ectt kgf" qww' kp" ceeqtf cpeg'y kj "j g't gs wkt go gpvu'qh'UGDKKE FT" Tgi wxvkqpu" cpf "j gt glqt g'ij g'pgv'y qt yj "cpf 'ij g'pwo dgt 'qh'gs wks{ 'lij ct gu" qwwxpf kpi "cu"cv'yj g"gpf 'qh'y g' [gct lrgt kqf 'j cu'pqv'dggp'f gt kxgf 'lt qo "Tguxvgf" Hkpcpekcn'Kphqto cvkqpO'

Hqt 'hwt vj gt 'f gw ku. ''ugg'ō **Qvj gt 'Hkpcpek: nKphqt o c skqp** ö ''qp''r c i g''3590'

Eqo rctkup 'y kj 'Nkogf 'Kpf wot { 'Rggt <'

 $\label{thm:continuity:continuit$

Vj g'hoeg'xonwg'qh'qwt'uj ctg'ku" '32022'r gt'uj ctg'opf 'vj g'Kuuwg'Rtkeg'ku'qh'' '] _'r gt'uj ctg'otg'] _'vko gu'qh'vj g'hoeg'xonwg0'

Mg{ 'Rgt hqt o cpeg' Kpf kec vqt u''

 $\label{thm:condition} Vj g'MRKi'f kwenqugf 'dgny 'j cxg'dggp''wugf 'j kwqtkecm('d{ 'qwt'Eqo r cp{ ''q''wpf gtuvcpf ''cpf ''cpcn{ ug''y g''dwukpguu''r gthqto cpeg.'' y j kej ''kp''tguwnx''j grr ''wu''kp''cpcn{ ukpi ''y g''i tqy y ''qh''qwt''eqo r cp{ ''kp''eqo r ctkuqp''vq''qwt''r ggtu0'''} \\$

Vj g"MRKi'f kuenugf "dgrqy "j cxg"dggp"crrtqxgf "d{"c'tguqnwkqp"qh'qwt"Cwf ki'Eqo o kwgg"f cvgf "F gego dgt "48."4245"cpf "yj g" o go dgtu'qh'yj g'Cwf ki'Eqo o kwgg"j cxg'xgtkhlgf "yj g'f gwku'qh'cmi'MRKi'r gtvckpkpi "vq"qwt"Eqo r cp{0Hwtyj gt."yj g'o go dgtu'qh' yj g"Cwf ki'Eqo o kwgg"j cxg"eqphkto gf "yj cv'yj gtg"ctg"pq"MRKi'r gtvckpkpi "vq"qwt"Eqo r cp{"yj cv'j cxg"dggp"f kuenugf "vq"cp{" kpxguvqtu"cv'cp{"r qkpv'qh'hkrlpi "yj g"y tgg"{gctu"r gtkqf "r tkqt "vq"yj g"f cvg"qh'hkrlpi "qh'yj ku'F tchv'Rtqur gewu0'Hwtyj gt."yj g" MRKi'j gtglp"j cxg'dggp"egtvkhlgf "d{"IO R'Cunqekcvgu."Ej ctvgtgf "Ceeqwpvcpu."d{"yj gkt "egtvkhlecvg"f cvgf "F gego dgt "48."42450"

Vj g'MRKi'qhi'qwt'Eqo r cp{'j cxg''dggp''f kuenqugf 'kp''yj g''uge-kqpu''knrgf 'ö*Qwt 'Dwrlp guu*ö''cpf 'ö*O cpci go gpwtt'F kuewurlqp''cpf'''*Cpcn(uku''qh'Hhpcpekcn'Eqpfkklqp''cpf''Tguwnu''qh'Qrgtcvkqpu''o''Mg{''Rgthqto cpeg''Yof kecvqtuö"qp"r ci gu"; 5"cpf"362"
tgur ge-kxgn(0"

Qwt"Eqo r cp{"eqphkto u"ij cv"ki"uj cml'eqphkpwg"vq"f kuenqug"cml'ij g"MRKi"kpenwf gf "kp"ij kul'ugevkqp"qp"c"r gtkqf ke"dcuku. "cv"rgcuv" qpeg"kp"c"{gct"\qt"cp{"rgutkqf "cu'f gvgto kpgf "d{"ij g"Dqctf "qhl'qwt"Eqo r cp{+:hqt"c'f wtcvkqp"qhl'qpg"{gct"chvgt"ij g"f cvg" qh'hkurkpi "qhl'ij g"Gs wkx{"Uj ctgu'qp"ij g"UvqemlGzej cpi g"qt"\knn'ij g"eqo r ngvg"wkrk| cvkqp"qhl'ij g"r tqeggf u'qhl'ij g"Kuwg"cu'r gt "ij g" kuenquwtg"o cf g"kp"ij g"Qdlgewl'qhl'ij g"Kuwg"Ugevkqp."y j kej gxgt "ku'ncvgt"qt"hqt"uwej "qvj gt"f wtcvkqp"cu"o c{"dg"tgs wktgf "wpf gt" y g"UGDKKEFT"Tgi wrcvkqpu0'

Mg{ 'Rgt hqto cpeg' Kpf kecvqt u'qh' Qwt 'Eqorcp{ ''

Mg{ 'HlpcpekcilRgt htto cpeg'	Hqt 'Rgt kqf 'gpf gf '' Ugr vgo dgt '52.'4245''	Ң '4244/45''	Ң '4243/44''	Ң '4242/43''
Tgxgpwg'htqo ''qrgtcvkqpu*3+''	4540, 8"	57: 0, 6"	35; 063"	2022"
GDKVF C*4+"	73084"	: 306: "	44064"	*206+"
GDKVF C'O cti kp*5+"	44088' "	44092' "	3802: ' "	/"
RCV"	55044"	76052"	35089"	*206+"
RCV'O cti kp*6+"	36048' "	37035' "	; 0 2' "	/"
P gw qtyj *7+"	325079"	92056"	38027"	405: "
TqG" *8+"	5: 043' "	34708; '"	36: 056' "	*7077+' "
TqEG' '*9+"	54066' "	; 3033' "	92088' "	*7049+' "

-



P qvgu<'

*3+"Tgxgpwg'Itqo "Qrgtcvkqpu"o gcpu"\j g'Tgxgpwg'Itqo "Qrgtcvkqpu"cu"crrgctkpi "kp"\j g'Tguxvgf "Hkpcpekcn"Uxvgo gpw""

##GDNVFC'ku'ecrewrcygf "cu'Rtqlky'dghqtg'\vz"- "F grtgekcykqp"- "Kpygtguv'Gzrgpugu'/"Qyj gt"Kpeqo g'"

*5+"-GDKVF C"Octi kpø'ku"ecrewrcvgf "cu"GDKVF C"f kxkf gf "d{ "T gxgpwg"ht qo "Qr gt cvkqpu"

"^{%+}"#RCV"O cti kpø'ku'ecrewrcvgf "cu'RCV"lqt"\j g'r gtkqf I{ gct 'f kxkf gf 'd{ 't gxgpwg'lt qo "qr gt cvkqpu0"

*7+Pgv'y qtyj "o gcpu'\j g''ci i tgi cvg''xcnwg''qh'\j g''rchf/wr''uj ctg''ecrhwn''cpf 'tgugtxgu''cpf 'umtrnwu''qh'\j g''eqo rcp{ 'nguu'f ghgttgf ''
vcz''cuugvu<mark>0</mark>'''

*8+'Tgwtp"qp'Gswkx{ 'ku'tcvkq"qh'Rtqlkx'chygt"Vcz"cpf "Cxgtci g"Uj ctgj qyf gt"Gswkx{ ""

*9+Tgwtp'qp'EcrkxdGorm{gf 'ku'ecnewrcvgf 'cu'GDKV'f kxlf gf 'd{ 'ecrkxdgorm{gf.'y j kej 'ku'f glkpgf 'cu'uj ctgj qnf gtuø'gs wkv{ ''rnwu'nqpi 'vgto'dqttqy kpi u0'

Gzr repedqpu'hqt 'MRKO gvt leu''

MRK'	Gzræpcskqp''
Tgxgpwg'htqo 'Qrgtcwqp''	Tgxgpwg"htqo "Qr gtcwlqpu"ku"wugf "d{"qwt"o cpci go gpv"vq"vtcem"yj g"tgxgpwg"rtqhkng"
	qh'y g'dwukpguu'cpf 'kp'wtp'j gn u'vq'cuuguu'y g'qxgtcm'hkpcpekcn'r gthqto cpeg'qh'qwt''
	Eqorcp{"cpf"xqnwog"qh"qwt"dwukpguu"kp"ng{"xgt \kecnu"
GDK/FC"	GDK/FC"rtqxkfgu'kphqtocvkqp"tgictfkpi 'y g'qrgtcvkqpcn'ghhekgpe{ 'qh'y g'dwukpguu'
GDKVF C'O cti kp'₩ +"	GDK/FC"Octi kp"* +"ku"cp"kpf kecvqt"qh"vj g"qr gtcvkqpcn"r tqhkscdkrkx{ "cpf "hkpcpekcn"
	r gthqto cpeg"qh"qwt"dwukpguu"
RCV"	Rtqhkv"chygt"vcz"rtqxkfgu"kphqtocvkqp"tgictfkpi"yjg"qxgtcm"rtqhkvcdkrkx{"qh"yjg"
	dwukpguu"
RCV'O cti kp'₩ +"	RCV" Octi kp" * +" ku" cp" kpf kecvqt" qh" yj g" qxgtcm' r tqhkxcdkrkx{ "cpf "hkpcpekcn'
	r gthqto cpeg"qh"qwt"dwukpguu0'
P gv'Y qtyj "	P gv'y qtyj "ku'wugf "d{"yj g"o cpci go gpv'vq"cuegtvckp"yj g"vqvcn'xcnwg"etgcvgf "d{"yj g"
	gpvks/{ "cpf "rtqxkf gu"c"upcr uj qv"qh"ewttgpv"hkpcpekcn"rqukskqp"qh"yj g"gpvks/{ 0"
TqG' "	TqG"rtqxkfgu"jqy "ghhkekgpvn{"qwt"Eqorcp{"igpgtcvgu"rtqhksu"htqo""Ujctgjqnfgtuø"
	Hwpf u"
TqEG' "	TQEG"rtqxkfgu"jqy "ghhkekgpvn{"qwt"Eqorcp{"igpgtcvgu"gctpkpiu"htqo"vjg"ecrkxcn"
	gorm(gf'kp''yjg''dwukpguu0'

Y gli j vgf 'Cxgt ci g'Equv'qh'Ces wlulslqp''

*c+ Vj g'r tkeg'r gt 'tij ctg'qh'qwt 'Eqo r cp{ 'ku'dcugf 'qp' vj g'r tko ct{ 'kuuwcpeg'qh'gs wkx{ 'tuj ctgu0''

Gzegr v'cu'f kuenqugf ''dgrqy .''y gtg'j cu'dggp'pq'kurwcpeg'qh'Gs wkx{ 'Uj ctgu.'qy gt''y cp'Gs wkx{ 'Uj ctgu'kurwgf 'r wtuwcpv'vq'c'dqpwu' kurwg'cmqwgf ''qp'F gego dgt''44.''4245'f wtkpi ''y g'3: ''o qpvj u'r tgegf kpi ''y g'f cwg'qh''y ku'F tchv'Rtqur gewu.''y j gtg'uwej ''kurwcpeg'' ku'gs wcn''vq''qt''o qtg''y cp''7' ''qh''y g'hwmf ''f krwgf ''r ckf / wr ''uj ctg''ecr kcn'qh''y g'Eqo r cp{ ''*ecrewrcygf ''dcugf ''qp''y g''r tg''kurwg'' ecr kcn'dghqtg'uwej ''tcpucevkqp''y g'' gzenwf kpi ''go r mq{ gg''uvqem'qr vkqpu''i tcpvgf ''dw''pqv'xgurygf + ''kp''c''ukpi rg''tcpucevkqp''qt'' o wnkr rg''tcpucevkqpu''eqo dlpgf ''vqi gyj gt''qxgt''c''ur cp''qh'52'f c{u0'}

*d+ Vjg"rtkeg"rgt"ujctg"qh"qwt"Eqorcp{"dcugf"qp"vjg"ugeqpfct{"\tcpucevkqp"qh"gswkw{"ujctgu""

Vj gtg"j cxg"dggp"pq"ugeqpf ct{"ucrg"l"ces wkukkqpu"qh"Gs wkv{"Uj ctgu."y j gtg"yj g"rtqo qygtu."o go dgtu"qh"yj g"rtqo qygt"i tqwr "qt"uj ctgj qrf gt*tu+"j cxkpi "yj g"tki j v"vq"pqo kpcvg"f ktgevqt*tu+"kp"yj g"dqctf "qh"f ktgevqtu"qh"yj g"Eqo r cp{"ctg"c"r ctv{"vq"yj g" tcpucevkqp"*gzenwf kpi "i khwu+"f wtkpi "yj g"3: "o qpvj u"rtgegf kpi "yj g"f cyg"qh"yj ku"egt whkecvg."y j gtg"gkyj gt"ces wkukkqp"qt"ucrg"ku" gs wcn'vq"to qtg"yj cp"7' "qh"yj g"hwn("f knwygf"r ckf "wr "uj ctg"ecr kcn'qht"yj g"Eqo r cp{"*ecrewrcygf"dcugf"qp"yj g"rtg/knuwg"ecr kcn'dghtg"uwej "vtcpucevkqp lu"cpf "gzenwf kpi "go r rq{gg"uvqen'qr vkqpu'i tcpvgf"dw"pqv'xguvgf + "kp"c"ukpi rg' vtcpucevkqp"qt"o wnwr rg" vtcpucevkqpu"eqo dkpgf "vqi gvj gt"qxgt"c"ur cp"qh"tqmkpi "52"f c{u0'

*e+ Rtkeg'r gt'uj ctg''dcugf ''qp''yj g''rcuv'hkxg'r tko ct{ ''qt''ugeqpf ct{ ''tcpucevkqpu=''

Ulpeg" yi gtg"ctg" vtcpucevlqpu" vq"tgr qtv" vq" wpf gt"*t+" ("*d+" yi gtglytg." kphyto cvlqp" dcugf "qp" mcuv" 7" r tko ct { "qt" ugeqpf ct { "vtcpucevlqpu" y j gtg" Rtqo qvgt" I "Rtqo qvgt" I tqvr "gpvkkgu" qt" Ugmkpi "uj ctgj qnf gt" qt" uj ctgj qnf gt*v+" j cxkpi "yi g"tki j v'vq" pqo kpcvg" fk tgevqt*v+" kp" yi g"Dqctf "qh" qwt" Eqo r cp { ."ctg" c"r ctv{ "vq" yi g"tcpucevlqp+" pqv'qnf gt" yi cp" 5" { gctu" r tkqt" vq" yi g"f cvg" qh' yi ku" F tchv' Rtqur gewwu'ktgur gevkxg" qh' yi g" yi ktpucevlqpu ku" cu "hymqy <"



Fevg'qh' vt epulgt''	Pco g'qh' vi epulgt qt '''	Pco g'qh' vt c pulgt gg''	Pq0' qh' Gswkv {'' ujctg u'''	Rt leg" Rgt " Gs wlsv {" Uj ctg" * +"	P cvwt g'lqhivt cpucevkqp'''	Vqvcn' Eqpulf gt cvk qp'' * 'lp'icmj u+''
Cwi wuv'43." 4245"	Lci lk/"Ukpi j " Fj kmpp"	Uctcdlk/Mcwt"	3022"	/"	Eqpukf gtcvkqp"qvj gt"vj cp" Ecuj "	/"
Cwi ww'43." 4245"	Lci lk/Ukpi j " F j kmpp"	Reny kpf gt "Mewt"	3@2"	/"	Eqpukf gtcvkqp"qvj gt"vj cp" Ecuj "	/"
Cwi wuv'43." 4245"	Lci lk/"Ukpi j " F j kmpp"	Rctco lk/"Ukpi j "	3022"	/"	Eqpukf gtcvkqp"qvj gt"vj cp" Ecuj "	/"
Cwi wuv'43." 4245"	Ici lk/Ukpi j " F j kmpp"	J cty kpf gt" Mwo ct"	3@2"	/"	Eqpukf gtcvkqp"qyj gt'yj cp" Ecuj "	/"
Cwi ww'43." 4245"	Ici lk/"Ukpi j " F j kmpp"	Dj wr kpf gt"Ukpi j "	3022"	/"	Eqpulf gtc\lqp"qyj gt"yj cp" Ecuj "	/"

$\label{eq:continuous} \begin{tabular}{ll} $^*f + Y ghi j vgf "cxgtci g"equv"qh"ces whukhqp. "hqqt"r theg"cpf "ecr "r theg<" \end{tabular}$

V{ r guˈկhˈɨt c puc evkqpu'	Y gli j vgf 'cxgt ci g'equv'qh'ces wlulslqp'* 'r gt'' Gs wlw{ 'Uj ctgu+''	Kumg'Rt leg, '*10g0' '']_+''
Y gki j vgf " cxgtci g" equv' qh' ces wkukkqp" qh'	P 0C 0'	P (C 0'
rtko ct{"kuuwcpeg"cu"rgt"rctci tcrj "*c+"cdqxg`"		
Y gki j vgf " cxgtci g" equv" qh" ces wkukkqp" hqt"	P0C0'	P 0C 0'
ugeqpf ct { " vtcpucevkqp" cu" r gt" r ctci tcr j " *d+"		
cdqxg`"		
Y gki j vgf "cxgtci g"equv"qh"ces wkukkqp"hqt "ncuv"	P KN"] _"
hkxg"rtkoct{"qt"ugeqpfct{"vtcpucevkqp"cu"rgt"		
retei terj "Kedqxg"		

Pqvg<"

`'Vj gtg'y gtg'pq'rtko ct{'qt'igeqpfct{'icngu'I'ces wkukkqp'qhlij ctgu'qhlgs wkv{'ij ctgu'kp'rcw'3: 'b qpvj u'cpf''y tgg'{gctu'' ktqo 'ij g'fcvg'qhlij ku'Ftch'Rtqurgewnd''

Vj g'Eqo r cp{ 'kp''eqpuwncvkqp''y kj ''y g'Ngcf 'O cpci gt''dgrkgxgu''y cv'y g'Kunwg''Rtleg''qh' ''] _'r gt''uj ctg'hqt''y g''Rwdrke''Kunwg'ku'' lwnkhlgf ''kp''xkgy ''qh''y g''cdqxg''r ctco gwgtuO'Kpxguvqt''uj qwrf ''tgcf ''y g''cdqxg/o gpvkqpgf ''kphqto cvkqp''cmpi ''y kj ''y g''ej cr vgt'' vkngf ''ō*TkunHcevqt u*ö'dgi kppkpi ''qp''r ci g''46'qh''y ku'F tchv'Rtqur gewu'cpf ''y g''hpcpekcnu'qh''qwt'Eqo r cp{ ''kpenwf kpi 'ko r qtvcpv'' r tqhkcdkrks{ ''cpf ''tgwtp''tcvkqu ''cu''ugv''qwv'kp''y g''ej cr vgt ''vkngf ''ō*HlpcpekcnUcvgo gpwt'cu'Tgwcvgf ö'*'dgi kppkpi ''qp''r ci g''359'' qh''y ku'F tchv'Rtqur gewuO'



UVCVGO GP V'QH'URGEKCN'VCZ'DGP GHKVU''

Vq"
Vj g'Dqctf 'qhlFktgewqtu''
CUUQEKCVGF 'EQCVGTU'NKO KVGF"
Cuj wk'Mj cpdgtkc'O cj guj vcrc'NR'''
421: 5168."Mqmcvc."Xkxgmcpcpf cr wt.'''

Uqwj "46"Reti epeu.""
Vj enwtr wnwt "O ej guvqre.""
Y guv'Dgpi en "922363"

Fgct"Ukt."

Uwd<'Uvcvgo gpv''qhi'Rquuldng''Ur gelcni'Vcz''Dgpghlau''*ővj g''Uvcvgo gpvö+''cxckrcdng''vq''CUUQEKCVGF''EQCVGTU''NKO KVGF''*ővj g'Eqo rcp{ö+'cpf 'ku'tj ctgj qnf gtu'rtgrctgf 'kp'ceeqtf cpeg'y kvj 'vj g'tgs wltgo gpwi'kp'Rqkpv'Pq0'; '*N+''qh'Rctv'C''qhl'Uej gf wng'XK'qhl'vj g''Ugewt kslgu'Gzej cpi g'Dqctf ''qhl'Kpf kc''*Kunwg''qhl'Ecr kvcnl'F knenquwtg'Tgs wltgo gpwu+''Tgi wncvlqpu'423: .'cu'co gpf gf ''ővj g'Tgi wncvlqpuö+''

Y g"j gtgd{"tgrqtv"yi cv"yi ku"egtvkhecvg"cmpi "y kyi "yi g"cppgzwtg" y gtgkpchtgt"tghgttgf "vq"cu"\tilde{\

Ugzgtcn'qh''y gug''dgpghku''ctg''f gr gpf gpv'qp''y g''Eqo r cp{ "qt''kw''uj ctgj qnf gtu''hwhknkpi "'y g''eqpf kkqpu''r tguetkdgf "wpf gt''y g'' uckf ''tgngxcpv'r tqxkukqpu''qh'y g''cz''ncy u''cpf ''tgi wcwkqpu''cr r necdng''q''y g'Eqo r cp{0J gpeg. "yj g''cdkrk\{ "qh''y g''Eqo r cp{ "qt'' kw''uj ctgj qnf gtu'' q''f gtkxg''y g''ur gekcn''vcz''dgpghku. "kh''cp{ ."ku''f gr gpf gpv''wr qp''hwhknkpi "uwej "eqpf kkqpu."y j kej "dcugf "qp'' dwukpguu'ko r gtcvkxgu. 'y j kej ''y g'Eqo r cp{ "o c{ "qt''o c{ ''pqv''ej qqug''q 'hwhkn'qt''hceg'kp''y g'hwwtg0''}

Vj g"dgpghku" f kuewuugf "kp" yi g"gperqugf "cppgzwtg" eqxgt"qpn("ur gekch" vz "dgpghku"cxckrcdng" vq" yi g"Eqo r cp{"cpf "ku" uj ctgj qrf gtu"cpf "f q"pqv'eqxgt"cp{"i gpgtch"vz "dgpghku"cxckrcdng"vq" yi g"Eqo r cp{"qt"ku"uj ctgj qrf gtu"OHwtyj gt."yj g"Rtgr ctcvlqp" qh"gperqugf "uvcvgo gpv"cpf "yi g"eqpvgpvu"uvcvgf "yi gtgkp"ku"pqv"gzj cwnkxg"cpf "ku" yi g"tgur qpukdktk{"qh"yj g"Eqo r cp{\piu" o cpci go gpv"0'Vj ku"uvcvgo gpv"ku"qpn{"kpvgpf gf "vq"r tqxkf g"i gpgtch"kphqto cvkqp"vq"yj g"kpxguvqtu"cpf "ku"pgkyj gt "f guki pgf "pqt" kpvgpf gf "vq"dg"c"uwduvkwwg"hqt"r tqhguulqpcn'vcz"cf xkeg0'C"vji ctgj qrf gt"ku"cf xkugf "vq"eqpuwnv"j kul"j gt l"kuu"qy p"vcz"eqpuwnvcpv" y kj "tgur gev"q"yj g"kcz"ko r necvkqpu"ctkukpi "qw"qh"j kul"gt lkuu"ctvlekr cvkqp"kp"yj g"r tqr qugf "kuuwg."r ctvlewrctn{"kp"xkgy "qh"gxgt/ej cpi kpi "vcz "kcy u"kp"kpf kc0Hwtyj gt."y g"i kxg"pq"cunwtcpeg"yj cv"yj g"kpeqo g"vcz"cwyj qtkkkgul"qyj gt kpf ktgev"vcz "cwyj qtkkkguleqwtwu" y kn"eqpewt"y kyj "qwt"xkgy u"gzr tguugf "j gtgkp0"

Y g'f q'pqv'gzr tguu'cp{ ''qr kpkqp''qt''r tqxkf g''cp{ ''cuuwtcpeg''cu''\q''y j gyj gt<''

- yj g'Eqo r cp{ "qt "ku"uj ctgj qrf gtu"y kmleqp\kpwg"\q"qdvckp"\j gug"dgpghku"kp"hwwtg="qt"
- y g'eqpf kkqpu'r tguetkdgf 'hqt'cxckrlpi 'y g'dgpghku'j cxg'dggp ly qwrf 'dg'o gv0'

Vj g"eqpvgpvu"qh"yj ku"cppgzwtg"ctg"dcugf "qp"kphqto cvkqp."gzr rcpcvkqpu"cpf "tgr tgugpvcvkqpu"qdvckpgf "htqo "vj g"Eqo r cp{"cpf" qp"yj g"dcuku"qh"qwt"wpf gtuvcpf kpi "qh"yj g"dwukpguu"cevkxkkgu"cpf "qr gtcvkqpu"qh"yj g"Eqo r cp{"cpf "yj g"r tqxkukqpu"qh"yj g"vcz" rcy u0'

P q"cuuntcpeg"ku"i kxgp"\j cv\'j g"tgxgpwg"cwj qtkkgul"eqwtu"y kni'eqpewt"y kj "\j g"xkgy u"gzr tguugf "j gtgkp0Vj g"xkgy u"ctg"dcugf "qp"\j g"gzku\kpi "t tqxkukqpu"qh"hcy "cpf "ku"kpvgtr tgvc\kqp."y j kej "ctg"uvdlgev\'q"ej cpi g"ltqo "\ko g"\q"\ko g0Y g"y qwrf "pqv'cuuwo g" tgur qpuklkrk\{"vq"wr f cvg"\j g"xkgy ."eqpugs wgpeg"\q"uwej "ej cpi g0'

 $Qwt''xkgy\ u''ctg''dcugf\ ''qp''hcewi'kpf\ kecvgf\ ''vq''wu\ ''y\ g''gzknkpi\ ''r\ tqxknkqpu'qh'vcz''rcy\ ''cpf\ ''kwt'lpvgtr\ tgvckqpu.''y\ j\ kej\ ''ctg''uwdlgev'vq''$ ej cpi g''qt''o qf\ khkecvkqp''ltqo\ ''vko\ g''q''ko\ gO'Cp\ ''uwej\ ''ej\ cpi\ gu.''y\ j\ kej\ ''eqwf\ ''cnuq''dg''tgvtqur\ gevkxg.''eqwf\ ''j\ cxg''cp''ghlgev'qp''\ y\ g''xcnkf\ kk\ ''qh''qwt''xkgy\ u''uvcvgf\ ''j\ gtgkpO'Y\ g''cunvo\ g''pq''qdnki\ cvkqp''q''wr\ f\ cvg''y\ ku''uvcvgo\ gpv'qp''cp\ ''uwej\ ''gxgpvu''uwdugs\ wgpv.''\ y\ j\ kej\ ''o\ c\ (''j\ cxg''c'')\ cvgtkcn'ghlgev'qp''y\ g''f\ kuewunkqpu''j\ gtgkpO'Qwt''xkgy\ u''ctg''gzenwnkxgn\ ''hqt''y\ g''ho\ kxgf\ ''wug''qht'y\ g''ecr\ kqpgf\ ''Eq\ r\ cp\ ''kp''eqppgevkqp''y\ ky\ ''kwt''r\ tqr\ qugf\ ''r\ wdnke''kunvg''tghgt\ tgf\ ''vq''j\ gtgkp''cdqxg''cpf\ ''uj\ cm''pqv.''y\ ky\ qw''qwt''r\ tkqt''y\ tkwgp''



eqpugpv."dg"f ku
equgf '\q"cp{ "qyj gt "r gtuqp0'

 $Y g''uj cm'pqv'dg''hcdng''q''Eqo r cp{'hqt'cp{'encko u.'hcdkrkkgu'qt''gzr gpugu''tgncvkpi ''q''yj ku''cuuki po gpv''gzegr v'vq''yj g''gzvgpv'qh'' hggu''tgncvkpi ''vq''yj ku''cuuki po gpv.''cu''hkpcm{''lvf kekcm{''f gvgto kpgf ''vq''j cxg''tguwngf ''r tko ctkn{''lhtqo ''dcf ''lnckj ''qh''kpvgpvkqpcn'' o kneqpf wev0Y g''ctg''pqv'hcdng''vq''cp{''lvf kekcm{''lvf kek$

 $\label{thecvg} Vj ku'' egt \mbox{$'$ ku''' egt \mbox{$'$ ku'''' egt \$

Hqt'LO R'Curqek vgu''
Ej ct vgt gf 'Ceeqwp wcpwu''
HTP <546457G''
"
Uf I''
O cpkıj 'I cf kc''
*Rct vpgt +''
O go dgt vj kr 'P q0<27; 899''
WF KP <4527; 899DI WKML: 757''
"
F c vg<F gego dgt '48. '4245''

Rrceg<Mqmcvc" "



CPPGZWTG" VO" VJ G" UVCVGO GPV" QH' RQUUNDNG" URGEICN" VCZ" DGPGHNVU' CXCKNCDNG" VO" CUUQEKCVGF"EQCVGTU'NKO KVGF"*6VJ G"EQO RCP[ö+"CPF"KVøU"UJ CTGJ QNF GTU'WPF GT"VJ G" CRRNÆCDNG'VCZ'NCY U'R' 'R'FKC"

Qwwłopg "dgny "ctg" i g'r quuldng ur gelen 'ez "dgoghku 'exchedrg 'e g' g "Eqor cp { "cpf "ku 'e i ctgi qnf gtu 'wpf gt 'e g ewttgov'f le gev vcz "ncy u"kp"kf kc"hqt" i g"hkpcpekcn" {gct "4245/460 Ki"ku "pqv"gz j cwwkxg"qt "eqortgj gpukxg"cpf "ku "pqv"kpygf gf "vq"dg"c "uwdurkwwg" hqt"r tqhguukqpcn"cf xkeg0"kpxguvqtu"ctg"cf xkugf "vq"eqpuvnv"vj gkt"qy p"vcz"eqpuvnvcpv'y kji "tgur gev'vq"vj g"vcz "ko r n'ecvkqpu"qh"cp" kpxguvo gpv"kp"yj g"Gs vkx{ "Uj ctgu"r ct vkevrctn{ "kp"xkgy "qh"yj g"lcev"yj cv"egt vckp"t gegpvn{ "gpcevgf "rgi kurcvkqp"o c{ "pqv"j cxg"c" f ktgevi'rgi cni'r tgegf gpvi'qt"o c{ "j cxg"c"f kthgtgpvi'kpvgtr tgvcvkqp"qp"vj g"dgpghkuu "y j kej "cp"kpxguvqt"ecp"cxckr0"

30 Ur gekcn'Vcz 'Dgpghku'\q'\j g'Eqo r cp{''

Vj gtg"ctg"pq"Ur gekcn'\cz "dgpghku'cxckrcdrg'\q'\j g'Eqo r cp{0'

40' Ur geken'Vez 'Dgpghku'exekredng'\q'\j g'\ij et gj qnf gt u''qh\'j g'Eqo r ep{''

Vj gtg"ctg"pq"Ur geken'\cz "dgpghku"exekredrg'\q"\j g"\ij etgj qrf gtu"qh'\j g"Eqo r cp{0" "

Pqvgu<'

- 30Á Cní\j g"cdqxg"dgpghku"ctg"cu'r gt '\j g"ewttgpv\\cz"rcy u"cpf '\y kni'dg"cxckrcdrg"qpn('\q'\j g'luqrg"Tht uv'pco g"j qrf gt '\y j gt g" vj g'luj ct gu''ct g''j grf ''d{ ''lqkpv''j qrf gt u0'
- 40Á Vj g"cdqxg"uwvgo gpv'eqxgtu"qpn("egtwkp"tgngxcpv"f ktgev"wz"rvy "dgpgkku"cpf "f qgu"pqv"eqxgt"cp{"kpf ktgev"wz"rvy " dgpglkw'qt 'dgpglkv'wpf gt 'cp{ 'qvj gt 'rcy 0'
- 50Å Vj g"cdqxg"iwcvgo gpv'qh'r quuldng'ur gelcn'\cz''dgpghku"ct g"cu'r gt "vj g"ewtt gpv'f kt gev'\cz''ncy u't gngxcpv'hqt "vj g"HQ 04245/ 46"t grgxcpv'\q'CQ 04246/470"
- 60Å Pq"cuunt cpeg"ku'i kxgp"ij cv'ij g't gxgpwg"cwij qt kkguleqwt uu'y kni'eqpewt "y kij "ij g"xkgy u'gzrt guugf "j gt gkp0'Qwt "xkgy u''ct g" dcugf "qp"\j g"gzkukpi "rtqxkukqpu"qlircy "cpf "kwi'kpvgtrtgvcvkqp."y j kej "ctg'uwdlgev\\q"ej cpi gu'ltqo "\ko g'\q"ko g0Y g"f q" $\label{eq:continuous} \textit{yi g''xkgy u''eqpugs wgpv''vq''uwej "ej cpi guOY g''uj cm''pqv''dg''hcdrg''vq''cp{ "ercko u." nkcdkrkkgu''qt "gzr gpugu''t grc klpi "vq''vj ku''} \\$ cuski po gpv"gzegrv"vq"i g"gzvgpv"qh"lggu"t grc vkpi "vq"vj ku"cuski po gpv. "cu"lkpcn("lwf kekcn("f gvgt o kpgf "vq"j cxg"t guwngf" rtko ctkd "ht qo "dcf "hckj" "qt "kpvgpvkqpcn"o kueqpf wev0'Y g"y kn"pqv"dg"nkcdng"vq"cp{ "qvj gt "rgtuqp"kp"t gur gev"qh"vj ku" uwvgo gpv0'

[QWUJ QWNF'EQPUWNV'] QWT'QY P'VCZ'CFXKUQTUEQPEGTPKPI 'VJ G'KPFKCP'VCZKO RNKECVKOPU'CPF'' EQP UGS WGP EGU" QH" RWTEJ CURPI ." QY P KPI " CPF" FKURQURPI " QH" GS WKV[" UJ CTGU" KP" [QWT" RCTVKEWNCT'UKVWCVKQP0'

Y g"j gtgd{"i kxg"qwt"eqpugpv'\q"kpenwf g"qwt"cdqxg"tghgttgf "qr kpkqp"tgi ctf kpi "\j g"\cz "dgpghku"cxckrcdrg"\q"\j g"Eqo r cp{"cpf" vq'ksu'uj ctgj qnf gtu'kp''yj g''qhhgt''f qewo gpv0'

Hqt 'LO R'Cuuqekc vgu'' Ej ct wgt gf 'Ceeqwpwcpwi' HTP<546457G" Uf 1/" Ocpkuj 'I cf kc'' *Rct vpgt +'' O go dgtuj kr 'Pq0<27; 899" WF KP < 4527; 899DI WKML: 757" Fcvg<Fgego dgt '48.'4245" Rrceg<Mqmcvc" "



UGEVKQP'XKKKCDQWV'VJ G'KUUWGT'EQO RCP["

QWT'PFWVT["

Vj g'kphqto cvkqp'kp'\j ku'ligevkqp'j cu'dggp'gz vtcevgf 'htqo 'xctkqwu'\y gdukogu'cpf 'r wdrken' 'cxckvcdrg'f qewo gpvu'ltqo 'xctkqwu'' lpf wut {'liqwt eguOVj g'f c w 'b c {'j cxg'dggp't g/ew uddigf'd} \'wu'hqt'ij g'f wtr qug'qhlrt gugp w viqp OP gloj gt'y g'pqt'ic p {'uni dig f'uni hqt'ij g'f wtr qug'qhlrt gugp w viqp OP gloj gt'y g'pqt'ic p {'uni dig f'uni hqt'ij g'f wtr qug'qhlrt gugp w viqp OP gloj gt'y g'pqt'ic p {'uni dig f'uni hqt'ij g'f wtr qug'qhlrt gugp w viqp OP gloj gt'y g'pqt'ic p {'uni dig f'uni hqt'ij g'f wtr qug'qhlrt gugp w viqp OP gloj gt'y g'pqt'ic p {'uni dig f'uni hqt'ij g'f wtr qug'qhlrt gugp w viqp OP gloj gt'y g'pqt'ic p {'uni dig f'uni hqt'ij g'f wtr qug'qhlrt gugp w viqp OP gloj gt'y g'pqt'ic p {'uni dig f'uni hqt'ij g'f wtr qug'qhlrt gugp w viqp OP gloj gt'y g'pqt'ic p {'uni dig f'uni hqt'ij g'f wtr qug'qhlrt gugp w viqp OP gloj gt'y g'pqt'ic p {'uni dig f'uni hqt'ij g'f wtr qug'qhlrt gugp w viqp OP gloj gt'y g'pqt'ic p {'uni dig f'uni hqt'ij g'f wtr qug'qhlrt gugp w viqp OP gloj gt'y g'pqt'ic p {'uni dig f'uni hqt'ij g'f wtr qug'qhlrt gugp w viqp OP gloj gt'y g'pqt'ic p {'uni dig f'uni hqt'ij g'f wtr qug'qhlrt gugp w viqp OP gloj gt'y g'pqt'ic p {'uni dig f'uni hqt'ij g'f wtr qug'qhlrt gugp w viqp OP gloj gt'y g'pqt'ic p {'uni dig f'uni hqt'ij g'f wtr qug'qhlrt gugp w viqp OP gloj gt'y g'pqt'ic p {'uni dig f'uni hqt'ij g'f wtr qug'qhlrt gugp w viqp OP gloj gt'y g'pqt'ic p {'uni dig f'uni hqt'ij g'f wtr qug'qhlrt gugp w viqp op quality g'uni hqt'i qu'qhlrt g' rgtuqp'eqppgevgf'y kij 'lj g'knawg'j cu'kpfgrgpfgpw('xgtkHgf'lj g'kphqto cwqp'rtqxkfgf'lp'lj ku'igevkqp0Kpfwat{'iqwtegu'' cpf 'r wdnkecvkapu 't glytt gf 'ba'lip 'bj ku'ligevkap. 'i gpgt cna 'liwc vg'bj cv'bj g'kphat o cvkap 'eap wchogf 'bj gtglip 'j cu'liggp 'adwchogf '' ht qo'liqwt egu'i gpgt cn('ldgnlgxgf'liq'dg't gnlcdng.'ldwv'lj ght'lceewt ce{.'eqo r ngwgp guul'cpf'lwpf gtn(hpi'lcuuwo r whqpul'ct g'p qv'' i wetepyggf'lpf'lj glt't grledlike{'leeppqv'dg'leuwtgf.'lpf.'leeqtflpi nf.'lpxguo gpvfgelulqpu'lj qwrf'pqv'dg'lleugf'lpp'lwej' kphqtocvkqp0'

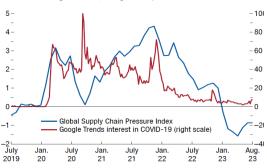
I NQDCN'GEQPQO['CV'NCTI G'''

Pcxki cvkpi 'I mdcnFkxgt i gpegu''

Vj g"dcugrlpg"hqtgecuv'ku"hqt"i nqdcn'i tqy vj "\q"unqy "htqo "50" 'r gtegpv'kp"4244"\q"502 'r gtegpv'kp"4245 "cpf "40, "r gtegpv'kp"4246." y gmidgny "y g"j kwqtkecn'%422263; +"cxgtci g"qh"50 "r gtegpv0Cf xcpegf "geqpqo kgu"ctg"gzr gevgf "vq"unqy "htqo "408"r gtegpv1bp" 4244"vq"307"r gtegpv"kp"4245"cpf "306"r gtegpv"kp"4246"cu"r qnke{ "vki j vgpkpi "uvct vu"vq"dksg0'Go gti kpi "o ctmgv"cpf "f gx gnqr kpi " geqpqo kgu"ctg"rtqlgevgf "vq"j cxg"c"o qf guv'f gerkpg kp"i tqy yj "htqo "b0b"r gtegpv'kp"4244"vq"b0b"r gtegpv'kp"dqyj "4245"cpf "42460" I nqdcn'lphrcylqp"ku'hqtgecuv'vq"f genlpg"uvgef kn{ .'htqo ": 09"r gtegpv'kp"4244"vq"80, "r gtegpv'kp"4245"cpf "70 "r gtegpv'kp"4246. "f wg" vq"\ki j vgt"o qpgvct{"r qrke{"ckf gf "d{"nqy gt"kpvgtpcvkqpcn'eqo o qf kx{"r tkegu0/Eqtg"kphrcvkqp"ku"i gpgtcm("r tqlgevgf "vq"f genkpg" o qtg"i tcf wcm(."cpf "kphrcykqp"ku"pqy'gzr gevgf "vq"tgwtp"vq"vcti gv'wpykn'4247 "kp"o quv'ecugu0"

I nqdcriRt qur gewicpf 'Rqrielgu''





Sources: Federal Reserve Bank of New York, Global Supply Chain Pressure Index;

Google Trends.

Note: On right scale, numbers represent search interest relative to the highest point (100) during 2008–23 worldwide.

O qtg"yi cp"yi tgg"{ gctu"chygt"yi g"i mqdcn'geqpqo { "uwhlgtgf "yi g"rcti guv" uj qem'qh'yj g'r cuv'97"{ gctu. 'yj g'y qwpf u'ctg'uvkm'j gcrkpi. 'co kf 'y kf gpkpi " i tqy yj "f kxgti gpegu"cetquu'tgi kqpu0Chygt"c"uvtqpi "kpkkcnltgdqwpf 'htqo " \dot{y} g"f gr \dot{y} u"qh" \dot{y} g"EQXIF/3; "r cpf go le." \dot{y} g"r ceg"qh"tgeqxgt{"j cu" o qf gtcvgf 0Ugxgtcrlhqtegu'ctg'j qrf kpi 'dcem'y g'tgeqxgt { 0Uqo g'tghrgev' yj g'hqpi /vgto 'eqpugs wgpegu'qh'ij g'r cpf go ke. "T wuukcøu'y ct'kp'Wntckpg." cpf 'kpetgcukpi 'i gqgeqpqo ke'htci o gpvcvkqp0Qvj gtu'ctg'o qtg'e{erkecn'' kpenwf kpi " vj g" ghhgevu" qh" o qpgvct {" r qnke {" vki j vgpkpi " pgeguuct {" vq" tgf weg"kphrcvkqp."y kyj f tcy cn'qh"hkuecn'uwr r qtv'co kf "j ki j "f gdv."cpf " gzwgo g'y gcyj gt"gxgpw0'

Fkxgti gpv" i tqy yj " r tqur gevu" cetquu" yj g" y qtrf øu" tgi kqpu" r qug" c" ej cmgpi g'\q'tgwtpkpi '\q'rtgrcpf go ke''qwrw'\tgpf u0F gur kg'uki pu''qh'' tgukrkgpeg"gctrkgt"kp"4245."vj g"ko r cev'qh'r qrke{ "vki j vgpkpi "vq"tgf weg" kphrcvkqp "ku"gzr gevgf "vq"eqqn"geqpqo ke"cevkxkv{ "i qkpi "hqty ctf 0'Y j krg" tkumu"vq"yj g"qwxqqm"ctg"o qtg"dcrcpegf "yj cp"gctrkgt"kp"yj g"{gct."qp"

ceeqwpv'qh"Uy kuu"cpf "WU"cwj qtkkguø"j cxkpi "cevgf "f gekukxgn("vq"eqpvckp"hkpcpekcn'wtdwrgpeg. "vj g{ "tgo ckp"vkrugf "vq"vj g" f qy pulfg. 'korn{kpi 'hkwg'o ctikp'hqt'rqrke{ "gttqtu0O qpgvct{"rqrke{"uj qwrf"uvc{"yj g"eqwtug"vq"ldtkpi "kphrcvkqp"vq"vctigv."yj krg" hkuecnieqpuqnkf cykqp kui þggf gf "vq" vcemg" uqctkpi "f gd vul OU t wewt cnit ghqt o u' ct g' et wek cni'q 't gxkxg' o gf kwo /vgt o 'i t qy yj 'i t qur ge wu'' co kf "eqpuvtckpgf" r qrke{ "ur ceg0'Ceegrgtcvkpi "vj g"i tggp" vtcpukktqp. "kpetgcukpi "tgukrkgpeg" vq"erko cvg" uj qemu. "cpf "ko r tqxkpi " hqqf "ugewtkı("hqt"o kırkqpu"qh"r gqr ng"tgs wktg"uxtgpi vj gpgf "o wnktrcvgtcn"htco gy qtmu"cpf "cf j gtgpeg"vq"twngu/dcugf "r ncvhqto u" hqt'kpvgtpcvkqpcn'eqqr gtcvkqp0'

Vj g'ircvguv'r tqlgevkqpu'eqphkto "vj cv'vj g'i mdcn'geqpqo { 'ku'unqy kpi "cu'kphrcvkqp"f genkpgu'htqo "rcuv'{ gctøu'o wnxlf gecf g'r gcm0' C'eqpvtcevkqp'kp'i nqdcnit gt'ecr kc'tgcniI FRô y j kej 'qhvgp'j cr r gpu'kp'c'i nqdcnit geguukqpô ku'pqv't ctv'qh'vj g'dcugrkpg'i uegpctkq0' I tqy yj "cpf "go rnq{o gpv'kp"yj g'hktw'j cnh'qh'yj g"{gct'tgo ckpgf "o qtg'tguknkgpv'yj cp'hqtgecuv'kp"yj g"Crtkn'4245"Y GQ0Cnxj qwi j " yj gtg"ku'rkwrg"ej cpi g"kp"yj g"hqtgecuv'hqt"yj g"i rqdcn'cxgtci g"ukpeg"yj g"Lwn("4245"Y GQ"Wr f cvg. "ugxgtcn'uj khwl'kp"i tqy yj "cpf" kphrcvkqp"rtqurgevu"ctg"qdugtxgf"cetquu"eqwpvtkgu0'Kp"cffkkqp."ogfkwo/vgto"rtqurgevu"hqt"geqpqoke"itqyyj"tgockp"yjg" ny gur'hp"f gecf gu. "y kij "o kf f ng/"cpf "ny gt/kpeqo g"eqwpvtkgu"hcekpi "c"uny gt"r ceg"qh"eqpxgti gpeg"vqy ctf "j ki j gt"rkxkpi " uvcpf ctf u0'

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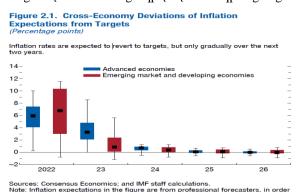
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gzr gewikqpu."eqo r neckpi "egpvtcn'dcpmw'r cy u'vq" gwhpi "kphrckqp"dcen'vq" y gkt"cti gw0Ki'uwo o ctk gu't gegpv'f gxgmr o gpwl kp"kphrckqp"gzr gewikqpu'cetquu"geqpqo kgu."ci gpw."cpf "j qtk qpu0Go r ktecn'cpcn(uku"wpeqxgtu"cp"kpetgcukpi "tqng"qh'pgct/ ygto "kphrckqp"gzr gewikqpu'hqt'kphrckqp"f {pco keu0Wukpi "c"o qf gn/dcugf "crrtqcej."vj g"ej cr ygt'hkpf u'vj cvkphrckqpct {"twrrn{" uj qemu" ctg" mpi /ncukpi "cpf" o qpgwct{"r qnke{" ku" nguu" ghhgekxg" y j gp" gzr gewikqpu" ctg" dceny ctf/mqnhkpi 0' J qy gxgt." ko r tqxgo gpwu"kp"o qpgwct{"r qnke{" htco gy qtmu."kpenwf kpi "eqo o wpkeckqp"untcvgi kgu."ecp" j gn "vq"dgwgt "kphqto "ci gpww" gzr gewikqpu"cpf "vq"dtkpi "kphrckqp"dcem'vq"cti gv'o qtg"s wkemn{"cpf" cv'c"nqy gt"qwr w'equv."eqo r ngo gpvkpi "wcpf ctf" e{enkecn' r qnkekgu0'

Kô'ij g'y cng'qh'ij g'uj qemu'qh'ij g'EQXKF/3; 'r cpf go ke'cpf 'T wuukcøu'lpxcukqp'qh'Wntckpg.'kphrckqp'ctqwpf ''ij g'y qtnf 'tgcej gf '' o wnkf gecf g''j ki j u''lp''42440'Cu''r qnke { "ki j vgpkpi "i tcf wcm("tgdcrcpegu"ci i tgi cvg''f go cpf "vqy ctf "r qvgpvkcn'qwr w: "uwr r n("ej ckp'f kutwr vkqpu'j cxg'gcugf .'cpf 'eqo o qf kv('r tkegu'j cxg'f genkpgf .'j gcf nkpg'kphrcvkqp'ku'eqo kpi 'f qy p. 'dw'wpf gtn(kpi 'r tkeg'' r tguuwtgu''*cu'ecr wtgf ''d{ "eqtg'kphrcvkqp+'tgo ckp''grgxcvgf 0'Rtqhguukqpcn'hqtgecuvgtu''gzr gev'kphrcvkqp'tcvgu'y km'tgwtp'equygt "q''egpvtcn'dcpmwo'cti gw'kp'4246.'y kyj 'c'uj khv'kp'y gkt'o gf kcp'f gxkcvkqp'vqy ctf '| gtq'cpf 'c'uj ctr 'pcttqy kpi 'qh'y g'f kwtkdwkqp'' *Hki wtg'40S+"''

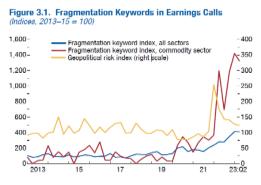
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y ci g/ugwkpi "rtqeguugu"rctvn("tghrgev"j qwugj qrf uø'cpf "hkto uø'gzr gewcklqpu"cdqww"y g"hwwtg"rceg"qh"rtkeg"ej cpi gu "kphrckqp" gzr gewcklqpu"rre{"c"etkkecn'tqrg"kp"uj cr kpi "kphrckqp"f {pco keu0'Co kf "yj g"ewttgpv"j ki j gt "kphrckqp"gxktqpo gpv."uqo g"qdugtxgtu" j cxg" gzr tguugf "eqpegtpu" yi cv' gzr gewcklqpu" eqwf "tgo ckp" grgxcvgf "qt "gxgp"tkug"hwtyj gt "cpf "nqpi /vgto "gzr gewcklqpu"eqwf "f g/cpej qt "htqo "cti gv"kphrcklqp"tcvgu0"kp"wtp."gzr gewcklqpu"eqwf "hwwtg"kphrcklqp"y knitkug"eqwf "hggf "kpvq"ewttgpv"kphrcklqp"tcvgu." nggr kpi "yi go "j ki j 0"Ki"cp"gzr gewcklqpu"ej cppgn"hqt "kphrckqp"ku" ko r qtwcpv."kv"cnuq"o gcpu"yi cv"r qrkekgu"yi cv"dtkpi "gzr gewcklqpu"f qy p"eqwrf "j grr "vq"ny gt "kphrckqp"o qtg's wkemn("cpf "gcukn(0V) g" kf gc"ku"yi cv"yi g"o qtg"ghtgekxg"o qpgwct {"r qrke{o cngtu"ctg"kp" kphrckqp"gzr gewcklqpu."yi g"ny gt"yi g"equv'kp"hqti qpg" qwr ww' kpxqrxgf " kp" egpvtcn' dcpmu" cej kgxkpi " yi gkt" kphrckqp"qdlgekxgu" **Ucti gpv" 3; : 5=" Dcm" 3; ; 6+0' Kp" qyi gt" y qtf u." yi g"

gzr gevcvkqpu'ej cppgn'ku'etkskecn'vq'y j gyj gt 'egpvtcn'dcpmu'ecp'cej kgxg''

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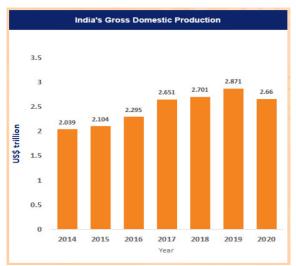


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f wg''\q''y gkt''j ki j "tgrkcpeg"qp"ci tlewnwtcriko r qtvu0'Hqwtyj ."Itci o gpvgf "o kpgtcrui'o ctngvu"y qwrf "o cng"yj g"gpgti { "vtcpukkqp" o qtg"equwr{ ."tgf welpi "kpxguvo gpv"kp"tgpgy cdrgu"cpf "grgevtle"xgj kergu"d{ "qpg/yj ktf "d{ "4252"kp"cp"kmwntcvkxg"uegpctkq0'C" i tggp"eqttlf qt"ci tggo gpvi'eqwrf "i wctcpvgg"yj g"kpvgtpcvkqpcrilmqy "qh'etkkecn'o kpgtcnu0'Uvo krct"ci tggo gpvu'hqt"guugpvkcrilqqf" eqo o qf kklgu"eqwrf "uvcdkrkj g"ci tlewnwtcn'o ctngvu0'Uvoj "ci tggo gpvu"y qwrf "uchgi wctf "yj g"i rqdcn'i qcru"qh"cxgtvkpi "erko cvg" ej cpi g"cpf 'lqqf 'kpugewtkx{"

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vq" tguj qtg" eqo o qf ks{" uwr r n{" ej ckpu" hqt" pcskqpcn" ugewtks{." i gqr qrkskecn"qt"qyj gt"tgcuqpu0'O gcuwtgu"kpensf g"yj qug"hqt"etkskecn" o kpgtcnu" hqt" engcp" gpgti {" yeej pqmi kgu." ugo keqpf wevqtu." cpf" f ghgpug"*gzco r rgu"qh"ceskqpu"ctg"yj g"WU"Kphrcskqp"Tgf weskqp"Cev." yj g'Gwtqr gcp'Ej kr u'Cev."cpf "Ej kpcøu"gzr qtvtguwtkeskqpu"qp"i cmkwo " cpf "i gto cpkwo +0'

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*Uqwt eg<'

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Utqpi "geqpqo ke"i tqy y "kp"y g"hktuv's wctvgt "qh"H[45"j grr gf "Kpf kc"qxgteqo g"yj g"WM"vq"dgeqo g"yj g"hktny/ rcti guv'geqpqo {"chgt 'kv't geqxgt gf 'htqo 'yj g'EQXKF/3; 'r cpf go ke'tij qenf0T gcrlI F R'cv'eqpuvcpv'r tkegu'*4233/34+'kp"yj g'hktuv's wctvgt 'qh'42456 46"ku"guvko cvgf "cv'Tu0'62059"vtkntqp"*WU&'6: 60,6"dkntqp+"uj qy kpi "c"i tqy yj "qh'90' "cu"eqo r ctgf "vq"yj g"hktuv's wctvgt "qh'4244/45"guvko cvgf "cv'Tu0'59066"vtkntqp"*WU&'6: 60,6"dkntqp+0'I kxgp"yj g"tgrgcug"qh"r gpv/wr "f go cpf "cpf "vj g"y kf gur tgcf" xceekpcvkqp"eqxgtci g. "yj g"eqpvcev/kpvgpukxg'ugtxkegu'ugevqt"y kni'r tqdcdn("dg"yj g"o ckp'f tkxgt "qh'f gxgnqr o gpv'kp'4244642450' Kp"4245/46"*Cr tkn'Ugr vgo dgt+"Kpf kcøu'ugtxkeg"gzr qtvu'uqqf "cv'WU&'3860; "dkntqp0'Hvtyj gto qtg. "Kpf kcøu'qxgtcmi'gzr qtvu'' "ugtxkegu''cpf "o gtej cpf kug+"kp'4245/46"*Cr tkn'Ugr vgo dgt+'y gtg"guvko cvgf "cv'WU&'59804; "dkntqp0'Tkukpi "go r nq {o gpv'cpf" uvduvcpvkcm("kpetgcukpi "r tkxcvg"eqpuwo r vkqp."uwr r qtvgf "d { "tkukpi "eqpuwo gt "ugpvko gpv."y km'uwr r qtv'I F R"i tqy yj "kp"yj g" eqo kpi "o qpyj u0'

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O CTMGV'UK G"

 $\label{thm:poly:thm:poly:wu:spin} $$ \footnote{Model} FR'-cv'ewtgpv'r tlegu'ku'guvko cvgf 'vq'dg''cv'Tu0523097'vkrhqp'*WU&5084''vkrhqp+'' kp'4245/460Cf f kkqpcm{.'vj g'P qo kpcn'I F R'cv'ewttgpv'r tlegu'kp'S 3'qh'4245/46'y cu'Tu092089'vkrhqp'*WU&5 6: 0, 4'dkntqp+'' cu'ci ckpuv'Tu087064''vkrhqp'*WU&9: 70 7'dkntqp+'kp'4244/45.'guvko cvkpi 'c'i tqy yj 'qh': '0'Y kj ''337''wpkeqtpu'xcnwgf 'cv'o qtg'' yj cp'WU&572'dkntqp.''cu'qh'Hgdtwct { ''4245.''Kpf kc''r tgugpvn{'j cu'vj g'yj ktf/ncti guv'wpkeqtp''dcug'kp''yj g'y qtnf 0'Vj g'i qxgtpo gpv' ku'cnvq''nqewkpi ''qp''tgpgy cdng''uqwtegu'd{ ''cej kgxkpi ''62' ''qh'ku''gpgti { ''htqo ''pqp/hquukri'uqwtegu'd{ ''42520'Kpf kc''ku''eqo o kwgf'' vq''cej kgxkpi ''yj g''eqwpvt{}\u'co dkkqp''qh''P gv''\ gtq''Go kuukqpu''d{ ''4292''yj tqwi j ''c''hkxg/r tqpi gf''uvtcvgi { .''+Rcpej co tkx60'' O qtgqxgt.''Kpf kc''tcpngf''5tf''kp''yj g''tgpgy cdng''gpgti { ''eqwpvt{ ''cwtcevkxg''kpf gz0''}}$

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Gzr qt vu'hctgf "tgo ctncdn("y gm'f wtkpi "y g'r cpf go ke "cpf "ckf gf "tgeqxgt ("y j gp "cm'q y gt "i tqy y "gpi kpgu"y gtg "nqukpi "uvgco " kp"ygto u"qh"yj gkt "eqpvtkdwkqp"vq"IFR0Iqkpi "hqty ctf."yj g"eqpvtkdwkqp"qh"o gtej cpf kug"gzr qtvu"o c{ "y cxgt"cu"ugxgtcn'qh" Kpf kcøu"tcf g'r ctypgtu"y kypguu'cp "geqpqo ke"ungy f qy p0Ceeqtf kpi "vq'O t0Rk[wuj 'I q{cn'O kpknygt"qh'Eqo o gteg"cpf "Kpf wwnt [." Eqpuwo gt 'Chhcku."Hqqf "cpf "Rwdrke"F kuxlkdwkqp"cpf "Vgz krgu."Kpf kcp"gzr qt ui'ctg"gzr gevgf "vq"tgcej "WU&'3"vtkrrkqp"d{ "42520"

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Kp"vj g"hktuv"j crh"qh"4245/46. "Kpf kc"ucy "c"vqvcn"qh"WU&'43"dkmkqp"kp"RG/XE "kpxguvo gpvu0"

 $O\:gtej\:cpf\:kug"gzr\:qt\:w"lp"Ugr\:vgo\:\:dgt"4245"uvqqf"cv'WU\&'56069"dkmlqp."y\:kj\:"vqvcn'o\:gtej\:cpf\:kug"gzr\:qt\:w"qh'WU\&'433062"$ dkmkqp'f wtkpi ''y g'r gtkqf ''qh'Cr tkn/Ugr vgo dgt'*4245/46+0'

Kpf kc"y cu"cnıq"pco gf "cu"yj g"6: yj "o quv"kppqxcvkxg"eqwpvt { "co qpi "yj g"vqr "72"eqwpvtkgu. "ugewtkpi "62 yj "r qukkkqp"qwv"qh" 354"geqpqo kgu"kp"yj g"I nqdcn"Kppqxcvkqp"Kpf gz"42450Kpf kc"tqug"htqo ": 3uv"r qukxkqp"kp"4237"vq"62yj "r qukxkqp"kp"42450' Kpf kc'tcpmu'5tf 'r qukkqp'kp''y g'i mdcn'pwo dgt''qh'uekgpvkhle'r wdnlecvkqpu0'

RO KUgtxkegu'tgo ckpgf "eqo hqtvcdn('kp''y g"gzrcpukqpct { "| qpg"cv'84(5"kp''y g"o qpyj "qh'Lvpg"42450'

Kp'Ugr vgo dgt'4245.'Vj g'i tquu'I qqfu'cpf'Ugtxlegu'Vcz'*I UV+tgxgpvg'eqngevkqp'uvqqf'cv'Tu08.84.934'etqtg'*WU&3; 076" dkmkqp+"qh"y j kej "EI UV"ku"Tu0'4; .: 3: "etqtg"¾WU&'507: "dkmkqp+:"UI UV"ku"Tu0'59.879"etqtg"¾WU&'6074"dkmkqp+:"II UV"ku" Tu0: 5.845'etqtg'**WU&'32026'dkmkqp+0'

Dgw ggp"Crtki'42226Lwpg"4245."ewo wrckxg"HF Kgs wkk["kphrqy u"vq"Kpf kc"uvqqf"cv"WU&; 5907: "dkrikqp0"

Kp"Cwi wuv'4245."yi g"qxgtcml"KKR™Kpfgz"qh"Kpfwuxtkcn"Rtqfwevkqp+"uvqqf"cv"367080"Vj g"Kpfkegu"qh"Kpfwuxtkcn"Rtqfwevkqp" hqt"yj g"o kpkpi ."o cpwbcewtkpi "cpf "grgevkekk{ "ugevqtu'uvqqf "cv'3330, ."36507"cpf "44207."tgur gevkxgn{ ."kp"Cwi wuv'42450" Ceeqtf kpi "vq"f cvc"tgrgcugf "d{ "vj g"O kpkmt{ "qh"Uvcvkmkeu"("Rtqi tco o g"Ko r ngo gpvcvkqp"*O qURK: "Kpf ko¢u"Eqpuwo gt" Rtleg"Kof gz"*ERK4"dcugf "tgvckilkphrcvkqp"tgcej gf "7024" "kp"Ugr vgo dgt "42450"

 $\label{lem:helicity} Hqtgki~p"\mbox{\colored}{\colored$ dkmkqp+"y j krg"F qo guvke "Koukwwkqpcri"Kpxguvqtu"*F KK4"uqrf "Tu06.722"etqtg"*WU&762078"o kmkqp+"kp"vj g'uco g"r gtkqf 0°Cu" r gt "f gr qukqt { "f cvc."Hqtgki p "Rqtvhqrkq"Kpxguvqtu"*HRKu+"kpxguvgf "Tu044.222"etqtg"*WU&4(89"dknkqp+"kp"Kpf kc"f wtkpi "vj g" hktuv'y ggm'qh'Lwn{ '42450'

Vj g"y j gcv'r tqewtgo gpv'f wtkpi "TO U'4245/46" km'O c{+"y cu"gurko cvgf "vq"dg"484"rcnj "o gvtke"vqppgu" NO V+"cpf "vj g" tkeg"r tqewtgf "kp"MO U''4245/46"y cu''5: 7"NO V0'Vj g"eqo dkpgf "uvqem'r qukkqp"qh'y j gcv'cpf "tkeg"kp" y g"Egpvtcn'Rqqn'ku" qxgt'79; 'NO V'*Y j gcv'534'NO V'cpf 'Tkeg'489'NO V+0'

I QXGTPO GPV'P KVKCVKXGU''

Qxgt"yj g"{gctu."yj g"Kpf kcp"i qxgtpo gpv'j cu"kpvtqf wegf "o cp{"kpkkcvkxgu"vq"uvtgpi yj gp"yj g"pcvkqp)u"geqpqo {0'Vj g"Kpf kcp" i qxgtpo gpv'j cu'dggp"ghgevkxg"kp'f gxgqqrkpi 'r qnlekgu'cpf 'r tqi tco o gu'yj cv'ctg"pqv'qpn("dgpghlekcn'hqt"ekk| gpu'\q'ko r tqxg" yj gkt 'hkpcpekcn'uvcdkrkx{ "dww'cnuq 'hqt 'yj g'qxgtcmii tqy yj "qhi'yj g'geqpqo {0'Qxgt 'tgegpv'f gecf gu. "Kpf kc)u'tcr kf ''geqpqo ke'i tqy yj " j cu'ngf "\q"c"uwduvcpvkcnkpetgcug'kp'knu'f go cpf 'hqt"gzrqtvu0Dgukf gu'\j ku "c"pwo dgt"qh'\j g'i qxgtpo gpv)u'hrci uj kr 'r tqi tco o gu." kpenwf kpi "O cng"kp"Kpf kc."Uct√wr "Kpf kc."F ki kscn'Kpf kc."yj g"Uo ctv'Ekx{"O kuukqp."cpf "'yj g"C vcn'O kuukqp"hqt"T glwx gpc vkqp"cpf " Włdcp"Vtcpuhqto cylqp."ku"cko gf "cy'etgcylpi "ko o gpug"qr r qtwpkkgu"kp"Kpf kc0Kp"yj ku"tgi ctf."uqo g"qh'yj g"kpkkcykxgu'ycngp"d{" yj g''i qxgtpo gpv'\q''kortqxg''yj g''geqpqo ke''eqpf kkqp''qh''yj g''eqwpvt { "ctg''o gpvkqpgf ''dgrqy <''

Qp"Cwi wuv'8yj."4245."Co tkv'Dj ctcv'Ucvkqp"Uej go g"y cu"ncwpej gf "vq"vtcpuhqto "cpf"tgxkxcnkt g"352; "tckny c{"uvcvkqpu" cetquu' ij g'pc liqp 0' Vj ku' iu ej go g''gpx kuci gu' if gxgrqr o gpv'qh' iu c liqp u'qp'' c'' eqp lipv qwu'' dcuku' y kij ''c'' rqpi / vgto ''x kukqp 0'' a liqpi / vgto ''x kukqp 0'' a

Qp"Lvpg"4: vj ."4245."vj g"O kpknt{"qh"Gpxktqpo gpv."Hqtguvu."cpf "Enko cvg"Ej cpi g"kpvtqf wegf "vj g":Ftch/Ectdqp"Etgf k/" Vtcf kpi ''Uej go g.''4245ø0'

 $\label{thm:linear} \begin{tabular}{ll} Hiqo "Crtki" 3uv." 4245." Hqtgki p"Vtcfg" Rqnke {"4245" y cu" wpxgkngf" vq" etgcvg" cp" gpcdnkpi "gequ{ uvgo "vq" uwr r qtv" yj g" proportion of the pr$ rj knquqrj { "qh":Cvo cP ktdj ct "Dj ctcvø"cpf ":Nqecn"i qgu"I mdcmø"

Kp"qtfgt"vq"gpjcpeg"Kpfkcøu"ocpwhcewtkpi "ecrodkhkkgu"d{"kpetgcukpi "kpxguvogpv"cpf"rtqfwekkqp"kp"vjg"ugevqt."vjg"

 $Rt lo g''O lpknygt \not o u''F gxgmr o gpv'' lpkklcvlxg'' lqt''P qt yj / Gcuv''T gi lqp''*RO / F gxlP G+''y cu''cppqwpegf'' lp''y g'''Wplqp'' Dwf i gv'' lpknygt \not o gpv'' lpkklcvlxg'' lqt'' P qt yj / Gcuv''T gi lqp''*RO / F gxlP G+''y cu''cppqwpegf'' lp''y g''' lpknygt o gpv'' lpknygt o$ $4244/45 \text{ 'y kj 'c''hlocpekch'qwnc} \{ \text{ ''qh'Tu03.722''etqtg''*} \text{WU\&'3: } 4057 \text{ 'o knlqp+0''} \}$



Rtlo g"O lpkngt"O t"P ctgpf tc"O qf k"j cu"kpcwi wtcvgf "c"pgy "hqqf "ugewtk{ "uej go g"hqt"r tqxkf kpi "htgg"hqqf "i tclpu"vq" Cpvqf c{c"Cpp"[qlpc"*CC[+"("Rtlo ct{"J qwugj qrf "*RJ J +"dgpghkekctkgu."ecngf "Rtcf j cp"O cpvtk'I ctkd"Mcn{cp"Cpp" [qlcpc"*RO I MC[+"htqo "Lcpwct{"3uv."}42450'

Kpf kc"ku"gzr gevgf "vq"cwtcev'kpxguvo gpv'qh''ctqwpf "WU&'322"dkmkqp"kp"f gxgrqr kpi "vj g"qkn'cpf "i cu"kphtcuvtwewtg"f wtkpi "423; /450'

Vj g'I qxgtpo gpv'qh'Kpf kc'ku'gzr gevgf 'vq'kpetgcug'r wdrke'j gcnij 'ur gpf kpi 'vq'407' 'qh'vj g'I FR'd{ '42470'

Vj g"Co tk/Dj ctcv'Ucvkqp"uej go g"hqt"Kpf kcp"Tckny c{u"gpxkuci gu"vj g"f gxgmqr o gpv'qh'uvcvkqpu"qp"c"eqpvkpwqwu"dcuku" y kj "c"nqpi /vgto "xkukqp. hqto wrcvgf "qp"F gego dgt"4; vj ."4244"d{"vj g"O kpknt{"qh!Tckny c{u0"

Qp'Qevqdgt'9vj .'4244.'vj g'F gr ct vo gpvlhqt'Rtqo qvlqp'qh'llfof wmt { 'cpf 'lfovgtpcn'Vtcf g''*F RKKV+'hcwpej gf 'Etgf kv'I wctcpvgg'' Uej go g''hqt''Ucttv'wr u''*EI UU+''cko kpi "vq''r tqxkf g''etgf kv'i wctcpvggu''wr "vq''c''ur gekhlef "rko kv'd { "uvctv'wr u."hcektkcvgf "d { "Uej gf wrgf 'Eqo o gtelcn'Dcpmu.'P qp/Dcpmkpi 'Hlpcpelcn'Eqo r cplgu'cpf 'Ugewtkkgu'cpf 'Gzej cpi g'Dqctf 'qh'lfof kc'*UGDK'' tgi knytgf 'Cngtpcvkxg''Kpxguvo gpv'Hwpf u'*CKHu+0'

Vgrgeqo "Vgej pqrqi {"F gxgrqr o gpv"Hwpf "*VVF H+"Uej go g"y cu"rcwpej gf "kp"Qevqdgt"4244"d{"yj g"Wpkxgtucri"Ugtxkeg" Qdrki cwlqp"Hwpf "*WUQH+"c"dqf {"wpf gt"yj g"F gr ct wo gpv"qh"Vgrgeqo o wpkecwlqpu0Vj g"qdlgevkxg"kt"vq"hwpf "T(F"kp"twtcn/ur gelkhe"eqo o wpkecwlqp"vgej pqrqi {"cr r rkecwlqpu"cpf"hqto "u{pgti kgu"co qpi "cecf go kc."uvctv/wr u."tgugctej "kpurkwwgu." cpf "yj g"kpf wurt {"vq"dwkrf"cpf" f gxgrqr "yj g"vgrgeqo "gequ{uvgo 0"

TQCF'CJ GCF"

"

Kp"yj g"ugeqpf "s wctvgt"qh"H 46."yj g"i tqy yj "o qo gpwo "qh"yj g"hktuv"s wctvgt"y cu"uwuckpgf ."cpf "j ki j /htgs wgpe { "kpf kecvqtu" *I HKu+"r gthqto gf "y gm"kp"Lwn ("cpf "Cwi wuv"qh"42450Kpf kc)u"eqo r ctcvkxgn ("uvtqpi "r qukkkqp"kp"yj g"gz vgtpcn"ugevqt"tghrgevu"yj g"eqwpvt {)u"i gpgtcm ("r qukkkg"qwwqqm"hqt"geqpqo ke"i tqy yj "cpf "tkukpi "go r m { o gpv"tcvgu0Kpf kc"tcpngf "7 yj "kp"hqtgki p"f ktgev" kpxguvo gpv"kphrqy u"co qpi "yj g"f gxgrqr gf "cpf "f gxgrqr kpi "pcvkqpu"hkvgf "hqt "yj g"hktuv"s wctvgt "qh"42440"

 $\label{thm:continuous} \begin{tabular}{l} $ Upeg'' for kexu'' tgukkgpv'' tqy \ y'' fgur kg''y g'' inden''r cpf go ke.'' for kexu'' tgr twu'' enko dgf'' cv''y g'' ugeqpf / j ki j guv'' tcyg' y kj '' c'' qxgt / {gct''* {q[+'' tqy \ y'' qh'' : 05; ' '' kp'' o gtej cpf kug'' gzr qtwu'' cpf ''c'' 4; 0 4' '' tqy y '' kp'' ugtxkeg'' gzr qtwu'' kmi' Cr tkn'' 42450 Y kj '' c'' tgf we kqp'' kp'' rqtv'' eqpi guvkqp.'' uwr r n {'' pgwy qtmu'' ctg'' dgkpi '' tguvqtgf 0' Vj g'' ERKE'' kphrckqp'' tgf we kqp'' htqo '' Lwpg'' 4244'' cnt gcf {'' tghrgewi' y g'' ko r ce v 0' Kp'' Ugr yoo dgt'' 4245' '' Rtqxkukqpcn+'' ERKE'' kphrckqp'' y cu'' 7024' . ''f qy p'' htqo '' 9023' '' kp'' Lwpg'' 42440 Y kj '' c'' r tqcekxg'' ugv'' qh'' c o kpkurtckxg'' ce kqpu'' d {'' y g'' axgtpo gpv.'' htgzkdng'' o qpgvct {'' r qnke { .'' cpf '' c'' uqhxgpkpi '' qh'' in qdcn'' eqo o qf ks {'' r tkegu'' cpf '' uwr r n { / ej ckp'' dqwrgpgemu.'' kphrckqpct { '' r tguuwtgu'' kp'' fsf kc'' nqm' kq'' dg'' qp'' y g'' f genkpg'' qxgtcm'' } \end{tabular}$

*Uqwteg<f wru<lly y y Odghlyti Igeqp qo {Ilpf lcp/geqp qo {/qxgt xlgy '\''

IPFICP'UGTXIEG'IPFWUVT["

Vj g'tghqto u'qh'iy g'3; ; 2u'j cxg'dggp''cuuqekcvgf 'y ky "iy g'gzr cpukqp''qh'iy g'ugtxkeg''ugevqt''kp''Kpf kc'0O kf y c{ 'iy tqwi j 'iy g'3; ; 2u." y g'ugtxkeg''ugevqt''dgi cp''vq''gzr cpf .''dw'k'vqqni'qhh'kp''y g'3; ; 2u'y j gp''Kpf kc''uvctvgf ''c''ugtkgu''qh''geqpqo ke''tghqto u'kp''tgur qpug'' vq''c''ugtkqwu''dcrcpeg''qh''r c{o gpvu''kuuwg0'

Vj g'ugtxlegu'ugevqt'ku'pqv'qpn{'vj g'T qo kpcpv'ugevqt'kp'Kpf kcøu'I FR'dwv'j cu'cnuq'cwtcevgf 'uki pkhlecpvhqtgki p'kpxguvo gpv'j cu' eqpvtkdwgf 'uki pkhlecpvh{'vq'gzr qtwi'cpf 'j cu'r tqxkf gf 'icti g/uecng'go r m{o gpvVKpf kcøu'ugtxlegu'ugevqt'eqxgtu'c'y kf g'xctlgv{' qh'cevkxkkgu'uwej "cu''vtef g."j qvgn'cpf "tguvcwtcpvu."vtcpur qtv."uvqtci g"cpf "eqo o wpkeckqp."hkpcpekpi ."kpuwtcpeg."tgcn'guvcyg." dwukpguu'ugtxlegu."eqo o wpkd ."uqekcn'cpf "r gtuqpcn'ugtxlegu."cpf "ugtxlegu'cuuqekcvgf "y kj "eqpuvtwekqp0'Vq"gpj cpeg"Kpf kc)u" eqo o gtekcn'ugtxlegu'gzr qtvu."uj ctg'kp'vj g'I mdcn'ugtxlegu'o ctngv'htqo '505' "cpf "r gto kv'c'o wnk/hqnf 'gzr cpukqp'kp'vj g'I F R." vj g'I qxgtpo gpv'ku'cnuq'o cmkpi 'uki pkhlecpv'ghtqtvu'kp'vj ku'f ktgevkqp0'

...



Vj g'ugtxkeg'ugevqt'j cu'qxgt'72' 'eqpvtkdwkqp'vq'Kpfkcøu'IFR.'' cpf 'kı'j cu'y kpguugf 'c'i tqy yj 'qh'320 ' 'f wtkpi 'yj g'hktuv'j crh'qh' 4243/440' Vj g" ugtxkeg" ugevqt" j cu" go gti gf " cu" yj g" j ki j guv' go r m{o gpv'i gpgtcvqt'y kj ''c'7/9' "{/q/{'i tqy yj ''kp''42440'}}

Kpf kc"ku"c"wpks wg"go gti kpi "o ctngv'kp"yj g"i nqdg"f wg"vq"kuu" wpls wg" umkmu" cpf " eqo r gwkkxg" cf xcpvci g" etgcvgf " d{" mpqy $\operatorname{ngf} i \operatorname{g/dcugf}$ " $\operatorname{ugtxkegu0'} \operatorname{Vj} \operatorname{g}$ " $\operatorname{Kpf} \operatorname{kcp}$ " $\operatorname{ugtxkegu}$ " $\operatorname{kpf} \operatorname{wuxt} \{..., v \in V\}$ y j kej "ku"uwr r qt vgf "d{ "pwo gtqwu"i qxgtpo gpv"kpkkcvkxgu"rkng" uo ctv"Ekkgu."engcp"Kpf kc."cpf "f ki kxcn"Kpf kc"ku"hquvgtkpi "cp" gpxktqpo gpv" yi cv" ku" uvtgpi yi gpkpi "yi g" ugtxkegu" ugevqt0 Vj g" ugevqt" j cu" yj g" r qvgpvkcn' vq" qr gp" wr " c" o wnwk/ vt kmkqp/f qmct" qrrqtwpkv{"yjcv'o kijv'uvko wrcvg"u{o dkqvke"i tqy yj "hqt"cm' pcvkqpu0' Ugtxkeg" r tqxkf gtu" kp" Kpf kc" eqpvkpwgf " vq" uki pcn' r qukkxg'f go cpf "tgpf u'kp'Lxpg."y j kej 'vpf gtr kppgf 'c'uxtqpi gt" kpetgcug'kp'pgy 'dwukpguu'xqnwo gu'cpf 'hwtyi gt'lqd'etgcvkqp0'



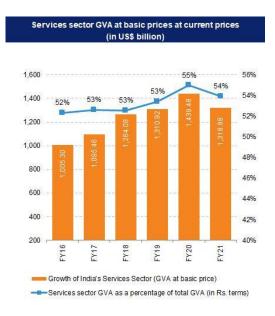
Ugtxkegu'gzr qtwi'ctg'r tqlgevgf "vq"ugv'c"pgy "tgeqtf "qh"WU&'544@4"dkmqp"y kij "c"eqo r qwpf "cppwcn'i tqy vj "tcvg"qh'48@; ' " f wt kpi "H[45"cu"eqo r ctgf "vq"H[440'Kpf kcøu"ugtxkeg"gzr qt vu"uvqqf "cv"WU&"544@4"dknkqp."y j gtgcu"ko r qt vu"uvqqf "cv"WU&" $3990, 6 \text{"dkmlqp"lp"Cr tkn'O ctej "} 4244/450 \text{Vj g"lugtxlegu"ltcf g"luxtr nxu"lqt"HI 45 \text{"} Cr tkn'O ctej +, "ku"gzr gevgf "\q"dg"\WW.3660 \text{: "}$ dkmkqp."wr "htqo "WU&"329074"dkmkqp"kp"H[44"*Crtkn/Octej +0Tkof ko¢u''ugtxkeg"gzrqtvu''uvqqf "cv"WU&"476075"dkmkqp."y j gtgcu" ko r qtwl'wqqf "cv" WU& '369023" dkm kqp "kp" H[440'

O CTMGV'UK, G''

Vj g"ugtxkegu"ugevqt"qh"Kpf kc"tgo ckpu"vj g"gpi kpg"qh"i tqy vj "hqt"Kpf kcøu" geqpqo {"cpf"eqpvtkdwgf"75" "vq"Kpfkcøu'I tquu'Xcnwg'Cffgf"cv'ewttgpv" r t kegu''kp''H
[44''*cu''r gt''cf xcpeg''guvko cvgu+0'Vj g''ugtxkegu''ugevqt)
u''I $\,XC''$ kpetgcugf "d{"807' "kp"ig"ig"iktf "s wctigt"*4244/45i"cpf "kiy cu"ig"o ckp" ftkxgt"qhlci i tgi cvg"I XC"i tqy vj "*ceeqwpvkpi 'hqt"crrtqzko cvgn(": 6' "qh" vqv:riT XC"i tqy vj +0"Vj g"ugtxkegu"kpf wuxt { "r gthqto gf "y gmlkp"J $4 \stackrel{4}{\sim} 244$ 45. "dqquvgf "d{ "eqpvcev kpvgpukxg" ugtxkegu "cpf "dvkrf kpi "cevkxkkgu OKpf kcøu" ugtxkegu"ugevqt"I XC"kpetgcugf "cv"c"ECI T"qh"33065' "vq"Tu0'323069" vtkmlqp"*WU&"3.65; 06: "dkmlqp+"kp"H[42."htqo "Tu0'8: 0 3"vtkmlqp"*WU&" 3.227052"dkmkqp+"kp"H[380'Dgw ggp"H[38"cpf "H[42."hkpcpekcn"tgcn" guvcyg"cpf "rtqhguukqpcn'ugtxkegu"cwi o gpygf "cv'c"ECI T"qh'3308: ' "*kp" TuO'vgto u+: "y j krg" 'vtcf g. "j qvgnı. "vtcpur qtv. "eqo o wpkecvkqp" cpf "ugtxkegu" tgrevgf "\q"dtqcf ecuxkpi "tqug"cv"c"ECI T"qh"320;: ' "\kp"Tu0\vgto u+0\kpf kc+u" KV"cpf "dwukpguu'ugtxkegu"o ctmgvku'r tqlgevgf "vq"tgcej "WU&3; (), 5"dkmkqp" d{"42470'Kp"O ctej "4245." yi g"O cpwhcewtkpi "Rwtej cukpi "O cpci gtuø' $$ \protect\ \p$ $\label{thm:condition} \verb"ugtxkeg" \verb"ugevqt" \verb"ceeqwpwi" \verb"hqt" \verb"c"88' "uj ctg" \verb|qh" \verb|Kpf kc| \verb|u"|$ I F R"cpf "i gpgtcvgu"cdqwi4: ' "qh'vj g"vqvcn'go r rq {o gpv'kp"kpf kc0Cu'r gt"

yj g'Hktuv'Cfxcpeg'Guvko cvgu.'I tquu'Xcnwg'Cffgf'*IXC+'kp''yj g''ugtxkegu''

ugevqt"ku"guvko cvgf "vq"i tqy "cv"; (B' "kp"H[45."f tkxgp"d{"3509' "i tqy yj"



TGEGPV'IPXGUVO GPVUIFGXGNQRO GPVU'

 $\verb"kp" ij g" eqpvcev' \verb"kpvgpukxg" ugtxkegu" ugevqt0"$

Uqo gʻqhʻ\j gʻkpxguvo gpvulʻf gxgnqr o gpvul'kpʻj gʻugtxkegu'ugevqt'kpʻj gʻtgegpv'r cuv'ctg'cu'hqnqy u<'

Vj g"Kpf kcp"lugtxkegu"lugevqt"y cu"vj g"hcti guv"tgekr kgpv"qh"HF Kliphnqy u"y qtvj "WU&"327.6220 : "dknikqp"dgvy ggp"Cr tkn"4222/ Lwpg'42450'

Ceeqtfkpi "vq"vjg"Okpkmt{"qh"Eqoogteg"cpf"Kpfwmt{."vjg"ugtxkeg"ugevqt"tgegkxgf"WU&908"dkmtqp"kp"HFKgswkx{"kphnqyu"

Ulpeg"yj g"ncwpej "qh"yj g"Uvctwr "Kpf kc"kpkkckxg"kp"4238."F RKK/"j cu"tgeqi pk gf "; : .33; "gpvkkgu"cu"uvctwr u"cu"qh"52yj " Crtkd42450"



Kpf kc "vqqm"y g"ngcf "y kj "y g"hkpvgej "cf qr vkqp"tcvg"qh". 9' . "uwduvcpvkcm("j ki j gt "y cp "y g"y qtrf "cxgtci g"qh"86' 0'

Ceeqtf kpi "'q" y g"KXEC/G["o qpyj n('RGIXE'tqwpf wr .''Qevqdgt'4244'tgeqtf gf 'kpxguvo gpwl'y qtyj "WU&505'dknkqp"cetquu" 97"f gcnı. "kpenwf kpi "ukz "ncti g"f gcnı'y qtyj "WU&404"dknkqp0'Gz kwl'y gtg"tgeqtf gf "cv"WU&'308"dknkqp"cetquu''37"f gcnı''kp" Qevqdgt''42440'

Vj g"j gcnj ectg"kpf wwt { "ku"i tqy kpi "cv"c"ECI T"qh"38' "cpf "vj g"vqvcn"r wdrke"cpf "r tkxcvg"ur gpf kpi "qp"j gcnj ectg"ku"6' "qh"I F R0'Kpf kc)u"j gcnj ectg"kpf wwt { "ku"gzr gevgf "vq" tqy "vq"WU&72"dkmkqp "kp"uk| g"d { "42470"

Ceeqtf kpi ''vq'TDK''

- Dcpmletgf kv'uvqqf "cv'Tu03540 3"vtkmlqp"*WU&3083"vtkmlqp+"cu'qh'Icpwct { "45."42440"
- Et gf kv'\q'pqp/hqqf '\pf wuxt\gu'\uqqf '\cv\Tu034802: '\tknkqp'*WU&3076'\tknkqp+'\cu'\qh'\Ugr ygo dgt '\45.'\42440'
- Eqhqti g'Nko kgf.'c'i nqdcnf ki kcnlugtxlegu'cpf 'luqnwlqpu'r tqxkf gt'cppqwpegf 'ly g'qr gpkpi 'lqhku'egpvtg'qh'gzegmppeg' *EqG+'hqt''y g'O gvcxgtug''cpf 'Y gd5"qp''Cwi wuv'52."42440'

 $\label{thm:condition} $$K_{\mu}^{244.}$ EN''Vgej pqrqi kgu'''^{3} EN_{\mu}''c'''gef kpi ''i qdcd''vgej pqrqi {"eqo r cp{."cppqwpegf "vj g"qr gpkpi "qh''ku''pgy "; .222'us 0hv0f grkxgt {"egpvtg'kp''Xcpeqwxgt.'Ecpcf c0Vj g'pgy ''egpvtg'y km'uki pkhkecpvn(''gzr cpf 'kuu'r tgugpeg'kp''yj g''eqwpvt{" vq''ugtxg''erkgpvu'r tko ctkn(''kp''yj g'' kVgej ''kpf wuxt{0'}$

Kpf kcøu'\grgr j qpg''uwduetkdgt''dcug''uvqqf ''cv'3.394656''o kmkqp''cu''qh''O ctej ''42450'

Vj g"eqwpvt{øu"vqvcn'dtqcf dcpf "uwduetkdgt "dcug"uvqqf "cv": 68079"o kndqp."cu"qh'O ctej "4245"42430'Vgngf gpukv{ "*f ghkpgf "cu"yj g"pwo dgt "qh'vgngr j qpg"eqppgevlqpu"hqt "gxgt { "322"kpf kxkf wcn.+"kp"Kpf kc"uvqqf "cv": 6073" . "cu"qh'O ctej "42450"

 $\label{eq:continuous} $$Cv'yi g''gpf''qh''O ctej''45."vj g''vqr''hkxg''ugtxkeg''r tqxkf gtu''eqpvtqmgf''; : (59)' "qh''yi g''vqvcn''dtqcf dcpf''uwduetkdgtu0'Vj gug'' ugtxkeg''r tqxkf gtu''y gtg''Tgrkcpeg''Ikq''Kphqeqo o "Nvf''*65: (78"o kmkqp+"Dj ctvk''Cktvgn''*4630; 2"o kmkqp+."Xqf chqpg''Kf gc'' *3460 5"o kmkqp+."DUP N'*47(59"o kmkqp+."Cvtkc''Eqpxgti gpeg''*4086"o kmkqp+0''$

Vj g"KV/DRO ''ugevqt''j qrf u''y g''r qvgpvkcri'vq''i tqy ''dgwy ggp''32/37' ''r gt''cppwo 0'Vj g''KV''cpf ''hlpvgej ''ugi o gpvu''r tqxkf g''qxgt'' WU&'377''dkmlqp''lp''i tquu''xcnwg''vq''y g''geqpqo {''cppwcm{0'

 $D\{"\ Qevqdgt"\ 4243."\ ij\ g"\ J\ gcnij\ "\ O\ kpknt\\ \{\emptyset u"\ gUcplggxcpk''\ vgngo\ gf\ kekpg''\ ugtxkeg."\ etquugf\ "\ 36"\ o\ kntqp"\ *306"\ etqtg+"\ vgngeqpuwncvkqpu'Ukpeg'ku'hcwpej\ ."gpcdnkpi\ 'r\ cvkgpv'vq/f\ qevqt'eqpuwncvkqpu."htqo\ 'ij\ g'eqphkpgu'qh'ij\ gkt'j\ qo\ g."cpf'f\ qevqt/qevqt'eqpuwncvkqpu0'$

Vj g"Kpf kcp"j gcn.j ectg"kpf w.nt { "ku"gzr gevgf "vq"uj khv"vq"f ki kcm("gpcdngf "tgo qvg"eqpuwncvkqpu"xkc"vgngeqpuwncvkqp0"Vj g" vgngo gf kekpg"o ctngv"kp"Kpf kc"ku"gzr gevgf "vq"kpetgcug"cv"c"ECI T"qh"53' 'htqo "4242"vq"42470'

 $\label{eq:kpk} \begin{tabular}{l}{l} $K_0^T = good $dt'' 4242.$ "yig"] M pKVG/" tqi tcoog" vcu''kpkklevgf'' d{ "Ukgogpu." DO\ "cpf''OUFG''vq"gpeqwtcig" jkij/s wcrkv{" tckpkpi "cpf'' vgej pkekcpu." ykj "cp" gorj cuku'qp" i gwkpi "yigo" "tgcf{ "hqt" yig" lpf wwt{"cpf'' hwwtg." dcugf'' qp" yig" I gtocp" Fwcri'Xqecvkqpcri' Gfwecvkqpcri' Vtckpkpi "FXGV+" oqfgr0' D{ "4246. "yiku''r tqi tcoog" ckou''vq''wrunkri' $62.222" gorq{ ggu0'} \end{tabular}$

I QXGTPOGPV'PWKCVKXGU'

Vjg"I qxgtpo gpv"qh"Kpfkc"tgeqi pkugu"yjg"korqtvcpeg"qh"rtqoqvkpi "itqy yj"kp"yjg"ugtxkegu"ugevqt"cpf"rtqxkfgu"ugxgtcn' kpegpvkxgu'cetquu'c'ykfg'xctkgv{'qh'ugevqtu'kkng'jgcnyj'ectg."qwtkuo."gfwecvkqp."gpikpggtkpi."eqoowpkecvkqpu."tcpurqtvcvkqp."kphqtocvkqp"vgejpqnqi{."dcpnkpi."hkpcpeg"cpf"ocpcigogpv"coqpi"qyjgtu0'

Egpvtg"j cu'hqto wrcvgf "cp":-Cevkqp"Rrcp"hqt"Ej co r kqp"Ugevqtu"kp"Ugtxkeguø'vq"i kxg"hqevugf "cvvgpvkqp"vq"34"kf gpvkhkgf " Ej co r kqp"Ugtxkegu'Ugevqtu0'

Kof koʻgʻu'vqwtkuo "cpf" jqur kcrkv{ "ugevqt" o c{ "gctp" WU&720, "dkmkqp" cu'xkukqt" gzrqt w'd{ "424: 0'

Cu"r gt"4244"Wpkxgtukx{"I tcpwi"Eqo o kuukqp"*WI E+"uvcvkurkeu."yj gtg"ctg"c"vqvcn"qh"3.294"wpkxgtukxkgu"kp"yj g"eqwpvt {." kpenwf kpi "682"uvcvg"wpkxgtukxkgu."34: "f ggo gf "vq"dg"wpkxgtukxkgu"*c"uvcwwu"qh"cwvqpqo {"i tcpvgf "vq"j ki j /r gthqto kpi "



kpurkwegu" cpf " wpkxgtukkgu" d $\{$ " yj g"F gr ctvo gpv' qh"J ki j gt"Gf weckqp+:"76" egpvtcn' wpkxgtukkgu" *guvcdrkuj gf " d $\{$ " yj g"F gr ctvo gpv'qh'J ki j gt "Gf weckqp+:"cpf "652"r tkxcvg'\wpkxgtukkgu0'

Kp'Qevqdgt'4243.''y g'i qxgtpo gpv'ncwpej gf'r j cug'KKqh'y g'O cj cvo c'I cpf j k'P cwlqpcn'Hgmqy uj kr''\q'go r qy gt''uwwf gpvu'' cpf ''dqquv'umkm'f gxgmqr o gpv0'

Kp"Qevqdgt"4243." vj g"RO "C { wuj o cp"Dj ctcv'J gcnj "Kphtcurtwewtg"O kuukqp"y cu"ncwpej gf "d { "vj g"i qxgtpo gpv." vq" uvtgpi vj gp"vj g"etkskecn'j gcnj ectg'pgw qtm'cetquu'Kpf kc'kp'vj g"pgzv'hqwt'vq'hkxg"{ gctu0'

Vj g'Kpf kcp'i qxgtpo gpv'kı'r ncppkpi ''\q'kp\tqf weg'c'etgf kv'kpegp\kxg'r tqi tco o g'y qtyj ''Tu072.222'etqtg'\%WU&80 ''dknkqp+'' \q''dqquv''j gcnj ectg''kphtcutwewtg''kp''y g''eqwp\t{0'Vj g''r tqi tco o g''y kn''cnqy "eqo r cpkgu''\q''ceeguu''hwpf u''\q''tco r "wr " j qur kcn'ecr cek\{''qt''o gf kecn'uwr r nkgu''y kyj ''y g''i qxgtpo gpv'ce\kpi ''cu''c''i wctcp\qt0'

 $\label{thm:condition} Wpf gt"vj g"Wpkqp"Dwf i gv'4243/44."vj g"i qxgtpo gpv'cmqecvgf "Tu09.222"etqtg"*WU&"; 850,9"o kmkqp+"vq"vj g"Dj ctcvP gv' r tqi tco o g"vq"dqquv'f ki kscn'eqppgevkxkvf "cetquu'f\psi kc0'$

Vj g"HF Krło k/hqt 'kpuwtcpeg"eqo r cpkgu"j cu'dggp"tckugf 'htqo "6; ' "vq'96' "cpf "322' "hqt 'kpuwtcpeg 'kpvgto gf kcvgu0' Qp'Icpwct { "37."4243."vj g"vj ktf 'r j cug'qh'Rtcf j cp'O cpvtk'Mcwuj cn'Xkmcu"[qlcpc"*RO MX[+'y cu'hcwpej gf 'kp'822'f knvtkewi" y kj "522- "umkm'eqwtugu0'Ur gct j gcf gf "d{ "vj g"O kpknvt { "qh'Umkm'F gxgmr o gpv'cpf 'Gpvtgr tgpgwtuj kr ."vj g"vj ktf 'r j cug"y km' hqewu"qp"pgy /ci g"cpf "EQXKF/tgrcvgf "umkm0'RO MX["502"cko u"vq"vtckp"gki j v'rcnj "ecpf kf cvgu0'

Kp" Icpvct { "4243." vj g" F gr ctvo gpv" qh" Vgrgeqo ." I qxgtpo gpv" qh" Kpf kc." uki pgf "cp" O qW' y kj " vj g" O kpknt { "qh" Eqo o wpkeckqpu."I qxgtpo gpv"qh"Icr cp."vq"uxtgpi vj gp"eqqr gtckqp"kp"vj g"ctgcu"qh"7I "vgej pqrqi kgu."vgrgeqo "ugewtkx{" cpf "uwdo ctkpg"qr vkecnhkdtg"ecdrg"u{ uvgo u0"

Kp''y g''pgzv'hkxg''{ gctu. 'y g''O kpkut { 'qh''Grgevtqpkeu''cpf 'Kphqto cvkqp''Vgej pqmi { 'ku''y qtrhpi ''q''kpetgcug''y g''eqpvtkdwkqp'' qh'' y g'' f ki kcri' geqpqo { "vq"42' "qh''I FR0' Vj g"i qxgtpo gpv'' ku'' y qtrhpi "vq"dwkf"c"emwf/dcugf "kphtcutwewtg" hqt" eqmcdqtcvkxg''pgw qtmu''y cv'ecp''dg''wugf 'hqt''y g''etgcvkqp''qh''kppqxcvkxg''uqnwkqpu''d { "CK'gpvtgrtgpgwtu''cpf 'uvctwru'0' Qp" Kpf gr gpf gpeg"Fc { "4242. "Rtko g"O kpkurgt" O t0'P ctgpf tc"O qf k''cppqwpegf "vj g"P cvkqpcri'Fki kcri'J gcnj "O knukqp" "PFJO +''q''rtqxkf g''c"wpks wg''j gcnj "KF" 'q"gxgt { "Kpf kcp"cpf 'tgxqnwkqpkug''y g''j gcnj ectg''kpf wurt { "d { "o crhpi "kv'gcukn{" ceeguukdrg''q 'gxgt { qpg''kp''j g''eqwpvt { 0'Vj g''r qrke { "f tchv'ku'wpf gt"+ wdrke''eqpuwnxcvkqpø'wpvkri'Ugr vgo dgt"43."42420' Kp"Ugr vgo dgt"4242. "vj g"I qxgtpo gpv'qh'Vco kri'P cf w'cppqwpegf "c"pgy "grgevtqpkeu" ("j ctf y ctg"o cpwbcewtkpi "r qrke { "crki pgf "y kj "y g''qrf" r qrke { "vq"kpetgcug" y g''uvcvg)u''grgevtqpkeu"qwr wv'q "WW&322"dkrhqp"d { "42470Wpf gt" y g''r qrke { ."kv'' cko u''q'o ggv'y g''tgs wktgo gpv'hqt 'kpetgo gpvcn'j wo cp''tguqwtegu'd { "w unkrrkpi "cpf "tckpkpi "@22.222'r gqr rg'd { "42460' Vj g'' qxgtpo gpv'qh'Kpf kc''j cu''rcwpej gf "yj g''P cvkqpcri'Dtqcf dcpf 'O knukqp"\q''r tqxkf g''Dtqcf dcpf ''ceeguu''q''m'xkrci gu''d { "

42440'

TQCF'CJ GCF"

 $\label{eq:def:condition} Dqi "f qo guske" cpf "i mdcn'hcevqtu" liphmygpeg" ij g"i tqy ij "qh'ij g"ugtxkegu" ugevqt0'Cp "gzvgpulxg" tcpi g"qh'ugtxkeg" lipf wwtlgu" j cu" gzr gtlgpegf "f qwdng/f ki ks"i tqy ij "hp" tgegpv" { gctu. "uwr qtvgf "d{ "f ki kscn' vgej pqnqi kgu" cpf "kpurkwwlqpcn' htco gy qtmu" o cf g" r quuldng'd{ "ij g"i qxgtpo gpv0'Vj g"gcug" qh'i qlpi 'dwulpguu" kp" Kpf kc" j cu'uki pkhecpvn{ 'kpetgcugf 'hqt" f qo guske" cpf 'hqtgki p'hkto u" f wg'vq" eqpulkf gtcdng" cf xcpego gpwu'kp" ewnwtg" cpf "ij g"i qxgtpo gpv'qwnqnn0F wg" vq" qpi qlpi 'lej cpi gu" kp" ij g"ctgcu" qh'inqy gtlpi "tcf g"dcttkgtu. "gculpi "HF Ktgi wrcvkqpu. "cpf "f gtgi wrcvkqp. "Kpf kc)ı" ugtxkegu" ugevqt" kı" r qkugf "vq" i tqy "cv'c" j gcnj { "tcvg" |kp" ij g" eqo kpi "{ gctu0'Qxgt" ij g"pgzv'32" { gctu. "ij g"P cvkqpcn' F ki kscn' J gcnj 'Dnwgr tkpv'ecp" wpnqen' ij g"kpetgo gpvcn' geqpqo ke" xcnwg" qh' qxgt" WW&422" dknlqp" hqt "ij g" j gcnj ectg" lipf wuxt { "kp" Kpf kc0'$

Kof kodi'f ki kscn'geqpqo { "ku'guvko cvgf "vq"tgcej "WU&3"vtknkqp"d { "42470'D { "vj g"gpf "qh'4245."Kof kodi"KV"cpf "dwukpguu'ugtxkegu" ugevqt "ku'gzr gevgf "vq"tgcej "WU&3605"dknkqp"y kj ": ' "i tqy yi 0'Vj g"ko r ngo gpvcvkqp"qh'vj g"I qqf u'cpf "Ugtxkegu"Vcz"*I UV+" j cu'etgcvgf "c"eqo o qp"pcvkqpcn'o ctngv'cpf "tgf wegf "vj g"qxgtcm'vcz"dwtf gp"qp"i qqf u0'Ki'ku"gzr gevgf "vq"tgf weg'equvu'kp"vj g" nqpi "twp"qp"ceeqwpv'qh'vj g"cxckrcdkrk{ "qh'I UV"kpr w'etgf kv."y j kej "y kn'tguwn'kp"c"tgf wevkqp"kp"y g"r tkegu"qh'ugtxkegu0'Kpf kc)u" uqhy ctg'ugtxkeg'kpf wnt { "ku'gzr gevgf "vq'tgcej "WU&3"vtknkqp'd{ "42520'

Pqvg<Vj g"eqpxgtukqp"tcvg"\wugf 'hqt"Cwi wuv'4245"ku'Tu03"? "WU&20234"

Tglgt gpegu<0 gf kc "Tgrqt vu. "Rt guu'Tgrgc ugu. "F RKW"r wdrkec vkqp. "Rt guu'Kphqt o c vkqp 'Dwt gcw"

Pqvg<", /"Ugtxkegu"ugevqt "kpenvf gu"Hkpcpekcn"Dcpnkpi ."Kpuwtcpeg."Pqp/Hkpcpekcn"l"Dwukpguu."Qwvuqwtekpi ."T(F."Eqwtkgt." Vgej "Vgukpi "cpf "Cpcnfuku."Qvj gt"

*Uqwt eg<j wr u<lly y y (hdgh(qt i llpf wunt { lugt xlegu'\(\frac{1}{2}\)'

TGCN'GUVCVG'IPFWUVT['TGRQTV''

:;"

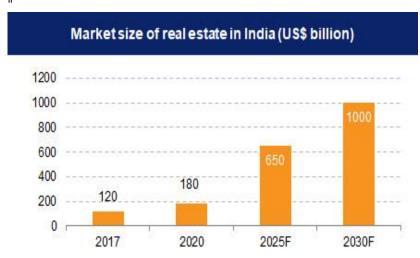


IP VTQF WE VKQP"

Vj g"tgcn'guvcvg"ugevqt"ku"qpg"qh'vj g"o quv'i nqdcm("tgeqi pk gf "ugevqtu0'Ki'eqo r tkugu"qh'hqwt"uwd/ugevqtu"/"j qwukpi ."tgvckn" j qur kcrkx{ ."cpf "eqo o gtekcn0'Vj g"i tqy vj "qh'vj ku'ugevqt"ku'y gm'eqo r ngo gpvgf "d{ "vj g"i tqy vj "kp"vj g"eqtr qtcvg"gpxktqpo gpv' cpf "vj g"f go cpf "hqt"qhhkeg"ur ceg"cu'y gm'cu'wtdcp"cpf "ugo k'wtdcp"ceeqo o qf cvkqp0'Vj g"eqpuvtwevkqp"kpf wwt {"tcpmu"vj ktf" co qpi "vj g"36"o clqt"ugevqtu'kp'vgto u"qh'f ktgev."kpf ktgev'cpf "kpf wegf "ghtgevu'kp"cm'ugevqtu'qh'vj g"geqpqo {0'

 $\label{thm:power} \begin{tabular}{l} $K_0''K_0'' = K_0''K_0'' = K_0''' = K_0'''' = K_0'''' = K_0''' = K_0'''' = K_0''' = K_0''' = K_0''' = K_0''' = K_0''' = K_0''' = K_0'''' = K_0''' = K_0'''' = K_0''' = K_0''' = K_0''' = K_0''' = K_0''' = K_0''' = K_0'''' = K_0''' = K_0$

O CTMGV'UK G"



 $\label{eq:continuous} D\{ \ ''4262. \ ''tgcn'guvcy'' o ctngv'y knii tqy \ ''q'Tu0' 87.222 \ ''etqtg'' \ ''*WW'; \ (52''dknkqp+''hqo'' Tu0' 34.222'' etqtg'' \ '*WW'; \ (52''dknkqp+''hp''423; \ 0' Tgcn''guvcy'' ugevqt'' kp'' kp' kc''ku''gzr gevgf'' vq'' tgcej'' WW'3'' 'tknkqp''kp'' o ctngv'uk g''d<math>\{''4252.'' \ wr'' \ htqo''' \ WW''' \ 422''' \ dknkqp'' kp'' 4243'' \ cpf''' eqpvkdwg''35''' \ ''vq'' y g''' eqwpvt<math>\{$ \text{\sigma}'' I F R'' d $\{''' \ 42470'' \ Tgvckn'' \ j \ qu'' \ kcrkx \{.'' \ cpf''' \ eqo \ o \ gtekcn'' \ tgcn'' guvcy'' \ ctg'' \ cnq''' i tqy kpi ''uki pkhkecpvn\{.'' \ rtqxkf kpi''' y g'' o wej / pggf gf'' kphtcuvtwewtg'' \ htt'' Kpf kc)u'' i tqy kpi ''pggf u0'$

Kof koʻzu" tgcni" guvcvg" ugevqt" ku" gzr gevgf " vq" gzr cpf " vq" WU&" 70 " vtknkqp" d{" 4269." eqpvtkdwkpi "3707' "vq" yj g"I F R"htqo "cp" gzknkpi "uj ctg"qh'905' 0'

 $\label{eq:kpm} \begin{tabular}{l} Kp'H$ 45."Kpf keøu't gukf gp-kcni'r tqr gtv{"o ctngv'y kpguugf "y kj "y g"xcnwg"qh'j qo g"ucngu'tgcej kpi "cp"cm/wo g"j ki j "qh'Tu0'5069" rcnj "etqtg"*WU&'64"dknkqp+."o ctnkpi "c"tqdwuv'6: ' "{gct/qp/{gct"lpetgcug0'Vj g"xqnwo g"qh'ucngu'cnq"gzj kdkgf "c"uxtqpi "i tqy y "vtclgevqt{."y kj "c"58' "tkug"uq"59; .2; 7"wpkuu"uqnf 0'Kpf kcp"tgcn'guvcug"f gxgnqr gtu'qr gtcvkpi "kp"y g"eqwpvt{øu'o clqt" wtdcp"egpvtgu'ctg'r qkugf "vq"cej kgxg"c'uki pkhkecpv'hgcv'kp'4245."y kj "y g"eqo r ngvkqp"qh'cr r tqzko cvgn{"77: .222'j qo gu0'$

Kpf koźu"tgcn'gurcvg"ugevqt"ucy "qxgt"3.922"cetgu"qh'mcpf "f gcnu"kp"vqr "gki j v'ekklgu"kp"vj g"hktuv'pkpg"o qpvj u"qh'Hl 440'Hqtgki p" kpxguvo gpvu"kp"vj g'eqo o gtekcntgcn'gurcvg'ugevqt"y gtg'cv'WU&3205"dkmtqp'htqo "4239/42430Cu'qh'Hgdtwct{"4244.'F gxgmqr gtu" gzr gevgf "f go cpf 'hqt"qhhkeg'ur cegu'kp'UG\ u'vq'uj qqv'wr "chygt"vj g'tgr ncego gpv'qh'vj g"gzkmkpi "UG\ u'cev0"

Cu'r gt "KETC" gurko cvgu. "Kpf kcp"hkto u'y gtg" gzr gevgf "vq" tckug" @Tu0'507" vtkmkqp" **WU&6: "dkmkqp+" vj tqwi j "kphtcuvtwewtg" cpf "tgcn'gurcvg'kpxguro gpv'vtwuru'kp" 4244. "cu'eqo r ctgf 'y ksj 'tckugf 'hwpf u'y qtvj "WU&4; "dkmkqp" vq"f cvg0'

Vj g"qlitkeg"o ctngv'kp" yj g"vqr "gki j v'ekkgu"t geqtf gf "vtcpucevkqpu"qh"4404"o uh'ltqo "Lvn("4242"vq"F gego dgt"4242."y j gtgcu"pgy "eqo r ngvkqpu"y gtg"t geqtf gf "cv"3904"o uh'kp" yj g"uco g'r gtkqf 0% "vgto u"qh"uj ctg"qh"ugevqtcn"qeewr kgtu. "Kphqto cvkqp" Vgej pqmi {"*KVIKVgU+"ugevqt"f qo kpcvgf "y kj "c"63' "uj ctg"kp"yj g"ugeqpf "j cnh"qh"4242. "hqmqy gf "d{"DUHKcpf "O cpwbcewtkpi "ugevqtu"y kj "38' "gcej ."y j kng"Qyj gt"Ugtxkegu"cpf "Eq/y qtmkpi "ugevqtu"t geqtf gf "39' "cpf" 32' ."t gur gevkxgn(0'

Ctqwpf '62'o knlqp'us wctg'ltggv'y gtg'lf grkxgtgf 'kp'Kpf kc'kp'42430K/ku'gzr gevgf 'kj cv'yi g'eqwpvt { 'y knlj cxg'c'62' 'o ctngv'uj ctg' kp''y g''pgzv'4/5"{ gctu0'Kpf kc''y cu''gzr gevgf 'kq''f grkxgt''68'o knlqp'us wctg''ltggv'ltp''42440'Ceeqtf kpi 'kq''Ucxkmu''Kpf kc.'tgcn'guvcyg'' f go cpf 'hqt'f cw'egpvtgu'ku'gzr gevgf 'kq'kpetgcug'd { '37/3: 'o knlqp'us 0hv0tl { '42470Kp'4242.'\dotyg'o cpwhcewtkpi 'lugevqt'ceeqwpvgf'' hqt''46' ''qlh'qhtkeg''ur ceg''ngcukpi ''cv'70''o knlqp'us wctg''hggv0'UO Gu'cpf ''grgevtqpke''eqo r qpgpv'o cpwhcewtgtu'ngcugf '\dotyg gy ''Rwpg.''Ej gppck''Cpf ''F grj k'P ET.''hqmqy gf ''d { ''cwq''ugevqt''ngcukpi ''kp''Ej gppck''Cj o gf cdcf ''cpf ''Rwpg0'Vj g''SRN.''g/eqo o gteg''cpf ''tgckhi'ugi o gpwi'ceeqwpvgf ''hqt''56' .''48' ''cpf''; ''qh''qhtkeg''ur ceg''ngcugu.''tgur gevkxgn(0'Qh''yj g''vycn''RG'' kpxguvo gpwi'kp''tgcn''guvcyg''kp''S 6''Hq 43.''vj g''qhtkeg''ugi o gpv''cwtcevgf ''93' ''uj ctg.''hqmqy gf ''d { ''tgvckri'cv'37' ''cpf ''tgukf gpvkcn'' cpf 'y ctgj qwukpi 'y kyj '9' ''gcej 0'

Kp"4244."qhhleg"cduqtr vlqp"kp"yi g"\qr "ugxgp"ekkgu"uvqqf"cv'5: 047"o knkqp"Us 0hv0Kp"yi g"hktuv's wct vgt "qh'4245"\Lepwct{\O ctej +" pgv'qhhleg"cduqtr vkqp"kp"yi g"\qr "ukz"ekkgu"uvqqf"cv': 05"o knkqp"us 0hv0Htguj "tgcn'guvcvg"ncwpej gu"cetquu"Kpf kcøu"\qr "ugxgp"ekkgu" i tcddgf "c"63' "uj ctg"kp"yi g"hktuv's wctvgt"qh'4245"\Lepwct{\O ctej +" o ctnkpi "cp"kpetgcug"htqo "yi g"48' "tgeqtf gf "kp"yi g"uco g" r gtkqf "hqwt"{ gctu"ci q0Qwv'qh'cr r tqzko cvgn{"3086"ncnj "vpku"uqnf"cetquu'yi g"\qr "ugxgp"ekkgu"kp"yi g"hktuv's wctvgt "qh'4245."qxgt" 63' "y gtg"htguj "ncwpej gu0Kp"yi g"yi ktf "s wctvgt"qh'4243"\dgw ggp"Lwn{"4243/Ugr vgo dgt"4243+"pgy "j qwukpi "uwr r n{"uvqqf"cv"

...



 $\begin{tabular}{l} $$ $$ $\phi $1.433$$ wpku.$$ petgcugf "d{ "44: ' [q["cetquu"iy g"vqr "gki j v'ekskgu"eqo r ctgf "y kij "$$ 3; .: $$ $7$$ wpku"irwpej gf "kp"iy g"vj ktf 's wctygt" qh"42420$$ petgcul$$ p"4243/44.$$ g"eqo o gtekch"ur ceg"y cu"gzr geygf "vq"tgeqtf "kpetgcul$$ petgcul$$ pu00$$ p$

Ceeqtf kpi "vq" y g"Geqpqo ke"Vko gu"J qwukpi "Hkpcpeg"Uwo o kx."cdqwi'y tgg" j qwugu"ctg"dwkn/r gt"3.222"r gqr rg"r gt" {gct" eqo r ctgf 'y ky "y g'tgs wktgf 'eqpuntwevkqp'tcvg'qh'hkxg'j qwugu'r gt"3.222"r qr wrcvkqp0'Vj g'ewttgpv'uj qtvci g''qh'j qwukpi 'kp'wtdcp" ctgcu'ku'guwko cvgf 'vq'dg'¢32'o kmkqp'wpku0Cp'cf f kkqpcn'47'o kmkqp'wpku'qh'chhqtf cdrg'j qwukpi 'ctg'tgs wktgf 'd{ "4252"vq'o ggv' y g''i tqy yj 'lp''yj g''eqwpnt {øu'wtdcp'r qr wrcvkqp0'

IP XGUVO GP VUIF GXGNQRO GP VU'

Kpf kcp"tgcn"guvcvg"ugevqt"j cu"y kpguugf "j ki j "i tqy vj "kp"vj g"tgegpv"vko gu"y kij "tkug"kp"f go cpf "hqt"qhhkeg"cu"y gm"cu"tgukf gpvkcn" ur cegu0'

Vj g'Rtkxcvg'Gs wkv{ "Kpxguvo gpvu'kp"Kpf kcøu'tgcn'guvcvg''ugevqt.''uvqqf ''cv'WU&'604''dkmlqp''kp''42450'

 $\label{eq:control_problem} \begin{tabular}{ll} V_j g''Rt kxcvg''Gs wkw{ ''Kpx guvo gpvu'kp''Kpf kcøu't gcn'guvcvg''ugevqt.''uvqqf''cv''WU&506''dkmkqp''kp''42440''} \end{tabular}$

Kpf koøu"tgcn"gurcvg"ugevqt"ucy "c"vj tgg/hqrf "kpetgcug"kp"hqtgki p"kpurkswkqpcn"kphrqy u."y qtvj "WU&"4808"dkrhqp"f wtkpi "4239/42440'

 $\label{thm:control} \mbox{HF Klp"vj g"ugevqt"*lpenwf lpi "eqpuvt we vlqp"f gx grqr o gpv" ("cevkx klgu+"uvqqf "cv"WU&"78025"dkmlqp"lnqo "Cr tkn'4222/O ctej "42450")} \mbox{$42450'$}$

Uqo gʻqhʻ\j gʻo clqtʻkpxguvo gpvuʻcpf ʻf gxgrqr o gpvuʻkpʻ\j kuʻugevqt ʻctgʻcuʻhqrqy u<'

- Vj g"ucng"qh"nwzwt {"j qo gu"hp"hfof kc"hpetgcugf "d {"352" "hp"vj g"hhtuv"j cnh"qh"4245"eqo r ctgf "vq"vj g"eqttgur qpf hpi "r gthqf "qh" vj g"r tgxkqwu"{gct0'Dgw ggp"Icpwct {/Lwpg"4245."8.; 22"nwzwt {"j qo gu"equvkpi "Tu0'6"etqtg"*WU&'6: . .2330 8+"cpf "cdqxg" y gtg"uqrf ."cu"qr r qugf "vq"5.222"hp"42440"
- Kp'Kpf kc)u'\qr 'gki j v'ekkgu.'j qwukpi 'r tkegu'tqug'9' "{gct/qxgt/{gct'f wg'\q'untqpi 'j qwukpi 'f go cpf 'uwr r qtvgf 'd{'r gtukuvgpv' r wtej cugt'f go cpf 'uvgcf {'dqttqy kpi 'tcvgu0'
- Vj g"Kpf kcp"tgcn'gurcvg"ugevqt"y kapguugf "untqpi "r tkxcvg"gs wks{ "*RG+"kpxguvo gpvu"qh"WU&"30, 4"dkmkqp"kp"S 4"qh'4245." f go qpuntcvkpi "kpxguvqt "eqphkf gpeg"kp"vj g"o ctmgv0'Ceeqtf kpi "vq"vj g"o quv'tgegpv"Kpxguvo gpv'tgr qtv'htqo "Ewuj o cp"("Y cnghkgrf."vj ku'y cu'85' "j ki j gt"vj cp"vj g"r tgxkqwu's wctvgt"*S 3"qh'4245+"cpf '82' "j ki j gt"vj cp'vj g"uco g'vko g"rcuv"{ gct0'
- Kp"Lwn{"4245."F grj k/P ET"go gti gf "cu"vj g"vj ktf "dki i guv"ekv{ "kp"vj g"Cukc"Rcektke"kp"j cxkpi "hrgzkdrg"qthkeg"ur ceg"uvqem' dgcvkpi "Dgklkpi "cpf "Ugqwn'y j krg"Dgpi cnwtw'tgvckpgf "vj g"vqr "ur qv."ceeqtf kpi "vq'tgcn'guvcvg"eqpuwncpv'EDTG0'
- Vtcpuceskqpu"hqt"qhhkeg"ur cegu"kp"Cr thr/Lwpg"4245."y j kej "vqvcmgf"360 "o kmkqp"us wctg"hggv."tgr tgugpvgf "vj g"j ki j guv" s wctvgtn{ 'hki wtg'tgeqtf gf 'ukpeg"S 3"42430'
- F wt kpi "tj g'httuv"j crhi'qh'4245. "kpurkswkqpcn'kpxguvo gpvu'kp"tj g'qhhkeg'ugevqt "kpetgcugf "d { "40" 'ko gu"{ gct/qp/{ gct. 'tgcej kpi " WU&'40" 'o kntqp0'
- Kp'Hi 45. "F grj k'P ET' 't gegkx gf ''54' "qh' 'y g' 'qvcn'r t kx c yg' 'gs vkx{ "*RG+' kpx guno gpv' kp' 'y g' t gcn' gunc yg' uge vqt 0'
- J qwulpi "ucrgu"kp"vqr "ugxgp"kpf kcp"ekkgu"uvqqf "cv"3066"rcmj "wpku"kp"S 3"qh"4245."cp"kpetgcug"qh"qxgt"; ; .722"wpku"
 eqo r ctgf "vq"vj g"uco g"r gtkqf "qh"42440"
- Kp"S 3"qh"4245."Dgpi cnwtw."F gnj k/P ET"cpf "Ej gppck"vqi gvj gt"ceeqwpvgf "hqt"wy q/vj ktf u"qh"s wctvgtn("f go cpf 0'Cv'49' ." hrgz kdrg"y qtmr ceg"y cu'vj g"dki i guv'eqpvtkdwqt"vq"f go cpf 0'
- Cu'qh'Iwpg'7.'4245.'33; @'hcnj 'j qwugu'j cxg''dggp''ucpedqpgf ''cpf '96@7'j qwugu'j cxg''dggp''eqo r ngvgf ''cpf ''f grlxgtgf ''''

I QXGTPO GPV'IPKVICVKXGU'

I qxgtpo gpv'qh'Kpf kc'cmpi 'y ky ''y g'i qxgtpo gpvu'qh'tgur gevkxg'Uvcvgu'j cu'vcmpp'ugxgtcnkpkkcvkxgu''q 'gpeqwtci g'f gxgmr o gpv' kp''y g'ugevqt0Vj g'Uo ctv'Ekk{ "Rtqlgev 'y ky 'c'r ncp''q'dwkrf ''322'uo ctv'Ekkgu. 'ku'c'r tko g''qr r qtwpkk{ 'hqt'tgcn'guvcvg'eqo r cpkgu0' Dgmy ''ctg''uqo g''qh'y gt''o clqt'I qxgtpo gpv'kpkkcvkxgu<"

...



- Kp"vj g"Wpkqp"Dwf i gv'4245/46."vj g"Hkpcpeg"O kpkurt { "cppqwpegf" c"eqo o kso gpv'qh'Tu09; .222"etqtg"*WU&; 086"dkmkqp+" hqt"RO "Cy cu"[qlcpc."y j kej "tgrtgugpvi" c"88' "kpetgcug" eqo r ctgf "vq" vj g"rcuv" { gct0'
- Kp'Qevqdgt'4243."/y g'TDKcppqwpegf '\q'nggr 'dgpej o ctml\pvgtguv\tcvg'\wpej cpi gf 'cv\6' ." kklpi 'c'o clqt'dqquv\q'\y g\tgcn' guvcvg''ugevqt "\p'y g'eqwpvt {0'Vj g''nqy "j qo g''nqcp"\pvgtguv\tcvgu''tcvgu''tgi ko g''y cu''gzr gevgf "\q''f tkxg''y g''j qwul\pi "f go cpf "cpf" kpetgcug''ucrgu''d {'57/62' "kp''y g''hgurkxg''ugcuqp'\kp'\42430'
- Wpf gt "Wpkqp" Dwf i gv'4243/44. "vcz "f gf weskqp" wr "vq" Tu0'307" rcnj "*WU&'428; 0; +"qp" kpvgtguv'qp" j qwukpi "rqcp. "cpf" vcz "j qrkf c{ 'hqt "chhqtf cdrg" j qwukpi "r tqlgevu' j cxg" dggp" gz vgpf gf "wpskri'y g" gpf "qh'hkuecri'4243/440"
- Vj g"C vo cpktdj ct"Dj ctcv"502"r cemci g"cppqwpegf "d{"Hkpcpeg"O kpkngt"O tu0"P kto crc"Uksj ctco cp"kp"P qxgo dgt"4242" kpenwf gf 'kpeqo g"vcz 'tgrkgh'o gcuwtgu'hqt'tgcri'guvcvg"f gxgrqr gtu'cpf 'j qo gdw{ gtu'hqt'r tko ct{'r wtej cug lucrg'qh'tgukf gpvkcri' wpku'qh'txcnwg'*wr "vq"Tu0'4"etqtg"*WU&'493.672082+'htqo "P qxgo dgt"34."4242"vq"Lwpg'52."4243+0'
- Kp"qtf gt"vq"tgxkxg"ctqwpf "3.822"uvcmgf "j qwulpi "r tqlgevu"cetquu"vqr "ekkgu"kp"yj g"eqwpvt { ."'yj g"Wpkqp"Ecdkpgv"crrtqxgf" yj g'ugwkpi "wr "qh"Tu047.222"etqtg"*WU&507: "dkmkqp+"cngtpcvkxg"kpxguvo gpv'hwpf "*CKH+0"
- I qxgtpo gpv'etgcvgf "cp"Chhqtf cdng"J qwukpi "Hwpf "*CJ H+"kp" y g"P cvkqpcn"J qwukpi "Dcpm*P J D+"y kij "cp"kpkkcn'eqtr wu" qh"Tu032.222"etqtg"*WU&3065"dkmkqp+"wukpi "r tkqtkv{ "ugevqt"ngpf kpi "uj qtv'hcm'qh'dcpmulhkpcpekcn'lkpuvkwvkqpu'hqt"o ketq" hkpcpekpi "qh'y g"J HEu0"
- Cu'qh'F gego dgt '53.'4244.''Kpf kc'j cf 'hqto cm{ "crrtqxgf '647'UG\ u. "cpf "cu'qh'Icpwct { .'4245.''492'UG\ u''ctg''qr gtc\kqpcn0' O quv'\ur gekcn'geqpqo ke'| qpgu'\u00e4UG\ u+''ctg'\u00e4p'\u00e3 g'\u00e4V1'DRO '\u00e4gevqt0'

TQCF'CJ GCF"

Vj g"Ugewtkkgu"cpf "Gzej cpi g"Dqctf "qhl'Kpf kc"*UGDK"j cu'i kxgp"ku"crrtqxcn"hqt"y g"Tgcn"Guvcyg"Kpxguvo gpv"Vtwuv"*TGKV+" r nchqto ."y j kej "y kni'cmqy "cmi'nkpf "qh'ikpxguvqtu"q"kpxguv'ip"y g"Kpf kcp"tgcn'guvcyg"o ctngv0Ki'y qwf "etgcvg"cp"qrrqtwpk{" y qtyj "Tu03047"vtkntqp"*WU&23; (87"dkntqp+"kp"yj g"Kpf kcp"o ctngv1kp"yj g"eqo kpi "{gctu0Tgurqpf kpi "vq"cp"kpetgcukpi n{" y gm/kphqto gf "eqpuwo gt"dcug"cpf "dgctkpi "kp"o kpf "yj g"cur gev'qh"i nqdcnkuckqp. "Kpf kcp"tgcn'guvcyg"f gxgnqrgtu"j cxg"uj khvgf "i gctu" cpf "ceegr vgf "htguj "ej cmgpi gu0'Vj g"o quv'o ctngf "ej cpi g"j cu'dggp"yj g"uj khv"htqo "hco kn/qy pgf "dwukpguugu"vq"yj cv'qh" rtqhguukqpcm("o cpci gf "qpgu0Tgcn'guvcyg"f gxgnqrgtu."kp"o ggkpi "yj g"i tqy kpi "pggf "hqt"o cpci kpi "o wnkrng"rtqlgew"cetquu" ekkgu." ctg" cnuq" kpxguvkpi "kp"egpvtcnkugf" rtqeguugu"vq" uqwteg" o cygtkcn' cpf "qti cpkug" o cpr qy gt" cpf "j ktkpi "s wcnkhkgf" rtqhguukqpcm'kp"ctgcu'nkng"rtqlgev'o cpci go gpv."ctej kygewtg"cpf "gpi kpggtkpi 0'

Vj g'tgukf gpvkcnlugevqt''y cu'gzr gevgf ''q'i tqy 'uki pkhlecpvn(.'y kij ''tj g''egpvtcnii qxgtpo gpv'cko kpi ''tq'dwkaf ''42''o kmlqp''chhqtf cdng'' j qwugu''kp''wtdcp''ctgcu''cetquu''tj g''eqwpvt {''d { ''4244.''wpf gt ''tj g''co dkklqwu''Rtcf j cp''O cpvtk'Cy cu''[qlcpc''*RO C[+''uej go g''qh'' y g''Wpkqp''O kpkuvt { ''qh''J qwukpi ''cpf ''Wtdcp''Chhcktu0'Gzr gevgf ''i tqy y ''kp''y g''pwo dgt ''qh''j qwukpi ''wpkuu''kp''wtdcp''ctgcu''y kml' kpetgcug''y g''f go cpf ''hqt''eqo o gtekcni'cpf ''tgvckni'qhhleg''ur ceg0'



Vj g"ewtgpv"uj qtvci g"qh"j qwulpi "lp"wtdcp"ctgcu"y cu" gurko cvgf "vq"dg"¢32"o kmlqp"wpku0'Cp"cf f kklqpcn'47" o kmlqp"wpku"qh"chlqtf cdrg"j qwulpi "ctg"tgs wktgf "d{" 4252" vq" o ggv" yj g" i tqy yj " lp" yj g" eqwpvt{øu" wtdcp" r qr wrcylqp0'

Vj g"i tqy kpi "hqy "qh" HF K'kp" Kpf kcp" tgcn' gwcvg" ku' gpeqwtci kpi "kpetgcugf "vtcpur ctgpe{0'F gxgqr gtu."kp" qtf gt" vq" cwtcev' hwpf kpi ." j cxg" tgxco r gf" vj gkt" ceeqwpvkpi "cpf" o cpci go gpv'u{uvgo u" vq" o ggv'f wg" f krki gpeg'uvcpf ctf u0 Kpf kcp'tgcn'guvcvg'y cu'gzr gevgf "vq" cwtcev'c'uwduvcpvkcn'co qwpv'qh"HF Ky kj "WU&": "dknkqp" ecr kxcn'kphwukqp"d{"H[440"

Tg/gt gpegu << 'O gf kc "T gr qt vu "Rt guu" t grgc ugu. "Mpki j v'Ht c pm' Kpf kc. "XEGf i g. "LNN" T gugc tej. "ETGF CKLN. "Wpkqp" Dwf i gv'' 4243/44. 'Wpkqp" Dwf i gv'4245/46"

Pqvg<Eqpxgtukqp'tcvg'\wgf'kp'Cwi ww\4245.'Tu03''? 'WU&20234''

*Uqwteg<] wru<lly y y (bdghl)qti Ilpf wurt { It gc n/gunc vg/lpf lc '4'

" "



OWT'DWURP GUU''

Vj g'lyngy kpi 'kphyto cykgp'ku's werkklef 'kp'ku'gpykt gyf 'df. "epf 'tyj gwf 'dg't gef ''aqi gyj gt ''y kj . "yj g'f gw kref 'lkpepeken'epf ''gyj gt '' kplyto cvkqp"kpemf gf "kp"vj ku'Ftch'Rtqur gewu "kpemf kpi "vj g"kplyto cvkqp"eqpvckpgf "kp"vj g"ugevkqp"vkmgf "õ**TkunHcevqtu**ö." dgi kppkpi "qp"rci g"4: "qh"vj ku"Ftch"Rtqur geww0""

"Vj ku"ugevkqp"uj qwrf "dg"t gcf "kp"eqplwpevkqp"y kyj."cpf "ku"s wcrklkgf "kp"ku"gpvkt gvf "d{. "vj g"f gvcktgf "kplyt o cvkqp"cdqwv'qwt" Eqo rcp{"cpf"ku"lkpcpekcn'uccvgo gpvu."kpenvf kpi "vj g"pqvgu"vj gt gvq."kp"vj g"ugevkqp"vkngf "õ **Tkun' Hc evqt u**ö."**õHkp cpekc n'** Ux vgo gp vö "dgi kppkpi "qp"r ci g"4: "cpf "393"t gur gevkxgn(."qh'\j ku'F t ch'Rt qur gevxu0"

Wprguu''qy gty kug''uc vgf "qt"\j g"eqpvgzv'qy gty kug"tgs wkt gu "kp"t grc vkqp"\q"dwukpguu''qr gt c vkqpu "kp"\j ku''ugevkqp"qh'y ku'Ft c h'' Rt qur gewu."cm/t glgt gpegu"\q"\$y g\$.'\$wu\$.'\$qwt\$"cpf "\$qwt 'Eqo rcp{\$"ctg"\q"õCuuqekcvgf 'Eqcvgtu'Nko kvgf ö0'Wprguu' qyi gty kug'lucvgf 'qt'ij g'eqpvgzv'qyi gty kug't gs wkt gu. 'ij g'lkpcpekcrlkplqt o cvkqp'lvugf 'kp'ij ku'lugevkqp'ku'f gt kxgf 'lt qo 'qwt "T guvcvgf " Hkpcpekch'Ucvgo gpw0'

QXGTXKGY 'QH'QWT'DWUKPGUU''

Qwt 'Eqtg'dwulpguu'kı'cu'hqmqy u<'

Qwt"Eqorcp{"ku"gpicigf"kp"yjg"dwukpguu"qh"rtqxkfkpi"ugtxkegu"d{"yc{"qh"rtg/vtgcvogpv"cpf"rqyfgt"eqcvkpi"qh"cnwokpkwo" gz vtwukqpu"kp"Ctej kgev'cpf "Tgcn'Gucvg"Kpf wuxt{0'Vj g"rtqeguu"dgi kpu"y kij "c"eqo rtgj gpukxg"engcpkpi ."y j gtg"vj g"vcti gvgf" uwthceg" qh" cnwo kpkwo "gz wwkqpu" ku" yi qtqwi j n{"engcpugf" qh" cp{"fktv."i tgcug." qt"eqpvco kpcpvu" yi cv'o ki j v'ko r gf g" yi g" uwdugs wgpv'eqcvkpi "r tqeguu0'Hqmqy kpi "vj ku."c"uvtcvgi ke"ej go kecn'uqnwkqp"ku"crrnkgf "vq"gpj cpeg"vj g"cfj gukqp"qh'vj g"r qy f gt" eqcvkpi OVj ku'kpxqrxgu'\j g'cr r rkecvkqp"qh'cp"cekf ke"uqruwkqp"hqt"uwthceg"gvej kpi "qt"\j g'wug"qh'c'ur gekcrkl gf 'r t gyt gcvo gpv'ci gpv' vq''qr vko kt g''uwthceg''y gwcdkrkv{0'

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Rquv/ewtkpi."c"o gvkewrqwu"kpur gevkqp"ku"eqpf wevgf "vq"i wctcpvgg"wpkhqto "crrnkecvkqp"cpf "cfj gtgpeg"vq"ur gekhkgf "vj kempguu" uvcpf ctf u0'Cp{ "f gvgevgf "f ghgevu"qt "ko r gthgevkqpu"ctg"tgevkhkgf "cv"vj ku"uvci g. "uj qy ecukpi "qwt "wpy cxgtkpi "eqo o kvo gpv"vq" f grkxgtkpi "c'hrcy rguu"r tqf wev0Qpn{ "chrgt"r cuukpi "qwt"uvtkpi gpv's wcrkx{ "ej gemu"f qgu"yj g"eqcvgf "kgo "o qxg"vq"yj g"hkpcn'uvci gu" qh'r cenci kpi "cpf "uj kr o gpvl)'Qwt "f gf kec kqp"vq"r tgekukqp"cpf "s wcrkv{ "wpf gtueqtgu"gxgt { "uvgr "qh'qwt"r tqeguu "gpuwtkpi "vj cv" qwt "ewurqo gtu"tgegkxg"pqyj kpi "uj qtv"qh"gzegmgpeg"kp"gxgt { "eqcvgf "cnvo kpkwo "gzvtwukqp0"

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Qxgt"qwt"ukz/{gct"lqwtpg{."yg"jcxg"gxqrxgf"kpvq"yg"Crrtqxgf"Crrnecvqt"qh"Cmq|qpqdgn"Iqwp."cpf"Cukcp"Rckpvu"kp" Ctej kgewtcn'eqcvkpi 0Qwt" (gctn('ecr cek/ 'ku'3.422'o gvtke' vqpu'y j kej 'kpenxf gu'Cwqo cvke Eqcvkpi ''Rrcpv'cpf 'O cpwcnEqcvkpi '' Rrcpv."o cmkpi "wu"c"i tqy kpi "r rc{gt"kp"gcungtp"Kpf kc"kp"ygto u"qh"cnwo kpkwo "gz vtwukqp"eqcvgtu0'Qwt"Eqpvkpwqwu"kpxguvo gpvu" kp"ewwkpi/gfig"gs wkrogpv'jcxg"rqukwkqpgf"wu"cv'yjg"hqtghtqpv'qh"vgejpqnqi{0"Ewttgpvn{."yg"qrgtcvg"wyq"ocpwcn'rqyfgt" eqcvlpi 'r repvi'cpf 'c'hwn(''cwqo cvle'r qy f gt'eqcvlpi 'r repv'gucdrluj gf 'lp/Lwn(''42390Qwt'eqo o ko gpv'tq'lppqxcvlqp'lu'gxlf gpv' lp"ij g"lpuvcmcvlqp"qh"c"F geqtcn'y qqf "hlpkij "hlpg"lp"Ugr vgo dgt"4239"cpf "c"RXFH"Eqcvlpi "Nlpg"lp"42450"Utkxlpi "hqt"s wcnlx{" ko rtqxgo gpv'ku"cv'yj g"eqtg"qh'qwt"o kuukqp0'Qwt"hwni'ko o gtukqp"rtg/vtgcvo gpv'rtqeguu."enqugn("o qpkxqtgf "d{"qwt"ej go kecn" $uwr \ r \ n\! gt."r \ n\! c \{u"c"et welcn"tqng"lp"o \ ckpvclplpi \ "j \ ki \ j "uvcpf \ ctf \ u0"Eqo \ dlpgf "y \ kj \ "'y \ g"wug"qh"ctej \ kgewtcn'i \ tcf \ g"uwr \ gt "f \ wtcdng" \ n\! ctf \ u0"Eqo \ dlpgf "y \ kj \ "'y \ g"wug"qh"ctej \ kgewtcn'i \ tcf \ g"uwr \ gt "f \ wtcdng" \ n\! ctf \ u0"Eqo \ dlpgf "y \ kj \ "'y \ g"wug"qh"ctej \ kgewtcn'i \ tcf \ g"uwr \ gt "f \ wtcdng" \ n\! ctf \ u0"Eqo \ dlpgf "y \ kj \ "'y \ g"wug"qh"ctej \ kgewtcn'i \ tcf \ g"uwr \ gt "f \ wtcdng" \ n\! ctf \ u0"Eqo \ dlpgf "y \ kj \ "'y \ g"wug"qh"ctej \ kgewtcn'i \ tcf \ g"uwr \ gt "f \ wtcdng" \ n\! ctf \ u0"Eqo \ dlpgf "y \ kj \ "'y \ g"wug"qh"ctej \ kgewtcn'i \ tcf \ g"uwr \ gt "f \ wtcdng" \ n\! ctf \ u0"Eqo \ dlpgf "y \ kj \ "'y \ g"wug"qh"ctej \ kgewtcn'i \ tcf \ g"uwr \ gt "f \ wtcdng" \ n\! ctf \ u0"Eqo \ n' \ u'' \ n'' \ n$ r qy f gt. 'y g"gpuwtg' y g"f grlxgt { "qh' \qr /pq \vej "s wcrlx\{ 0'

 $Cu"cp"\textit{KUQ}"; 223 \lessdot 4237" egt \textit{khlg} f "qti cpk cvkqp." y g"cfj gtg"vq"c"tqdww'S wcrkx {"O cpci go gpv"U {uvgo 0'Qwt"f gf kecvkqp"rkgu"kp" } and the color of the color of$ rtqxkf kpi "y qtm'qh' uwr gtkqt"s wenk{ "yj cv'enki pu"y kyj "rtqlgev' uvcpf ctf u"cpf "ur gekhkecvkqpu"hqt"o cvgtkenu."y qtmo cpuj kr ." uej gf wrgu. "cpf 'r wdrke 'lugtxkeg0'Y g'ctg'eqo o kwgf ''q'r tqhkocdkrk{ "cpf 'eqo r gykkkzgpguu'y j krg'igpuwtkpi 'eqpykpwcriko r tqxgo gpv' yj tqwi j "s wcrkx{"r tqeguugu"qxgtuggp"d{"c"uxtqpi "o cpci go gpv"vgco 0'Qwt"s wcrkx{"eqpxtqri'r tqeguu"i wctcpvggu"yj g"j ki j guv" $uvcpf \ ctf \ u"qh"uchgv("cpf"gpxktqpo \ gpvcn"r \ tqvgevkqp."o \ ggvkpi \ "enkgpv"gzr \ gevcvkqpu"cpf "cfj \ gtkpi \ "vq"f \ ghkpgf "uvcpf \ ctf \ u"cpf" \ uvcpf \ uvcpf \ ctf \ u"cpf" \ uvcpf \ uvc$ ur gelthlecvkqpu0'



Qwt"vgco "qh'unkngf "uwr gtxkuqtu"ku"f gf kecvgf "vq"f grkxgtkpi "qwuvcpf kpi "tguwwu."vcknqtgf "vq"j g"ur gektke"pggf u"qh'qwt "enkgpwu0' Y kij "c"eqo o kwgf "y qtmhqteg."kpj gtgpv"uxtgpi ij ."cpf "eqmcdqtcvkqpu" y kij "hcdtkecvqtu." y g"cf cr v' qwt "ugtxkegu" vq "cuukuv" dwukpguugu"kp"cej kgxkpi "yi gkt"i qcmu0'Vj g"kputwo gpvcn'tqng"r nc{gf "d{"qwt"Rtqo qvgt"cpf "Mg{"O cpci gtkcn'Rgtuqppgn'kp"yi g" eqo r cp{})."i tqy yj "ku"pqvgy qtyj {0'Dghqtg"kpeqtr qtcvkpi "qwt"eqo r cp{."yj g"Rtqo qvgt "uweeguuhwm("gzgewgf "ncti g/uecng" rtqlgewu"yi tqwi j "c"uqng"r tqr tkgvqtuj kr "guvcdrkuj gf "kp"4228"hqt"r qy f gt "eqcvkpi "eqpvtcevu0'Y kij "c"tqdwuv'o cpci go gpv'vgco "dqcuvkpi "uki pktkecpv'kpf wuxt {"gzr gtkgpeg."y g"cvtkdwwg"qwt"o ctngv'r qukkqp" vq" yi g"xkukqp"qh"qwt"Rtqo qvgtu"cpf "ugpkqt" o cpci go gpv'vgco ."gcej "y kij "qxgt"c"f gecf g"qh"gzr gtkgpeg"kp"yi g"kpf wuxt {0'

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QWT'UGTXIEGU''

'RQY FGT'EQCVIPI <"

Qwt"eqo r cp{"dqcuwu"uwduwcpvkcn"gzr gtvkug"kp"vj g"tgcmo "qh"r qy f gt"eqcvkpi ."c"vgej pks wg"kpxqnxkpi "vj g"crr nlecvkqp"qh"ft{" r qy f gt"qpvq"c"ej cti gf 'luwthceg0Vj ku'o gvj qf 'tguwnwikp"c"o qtg"tqdwuv'eqcvkpi 'kp"c"ukpi ng"crr nlecvkqp"eqo r ctgf 'vq"tcf kklqpcn' r ckpv0Vj g"grgevtquvcvke"ej cti g"ghtgevkxgn("cfj gtgu"vj g"eqcvkpi "vq"vj g"luwthceg."etgcvkpi "c"ncuvkpi "htpkuj "chngt"ewtkpi 0I kxgp"vj g" kpvtkecvg"r tgr ctcvkqp"cpf "eqcvkpi "r tqeguu."r qy f gt "eqcvkpi "r tqxgu"r ctvkewnctn("cf xcpvci gqwu'hqt"uk) cdng"qtf gtu0"

Htunn(."vj gto qr mukle "eqcvkpi "vpf gti qgu"o gnkpi "cpf "hny kpi "y j gp"j gcvgf. "tgvckpkpi "vj g"uco g"ej go kecn'eqo r qukklqp"wr qp" uqnkf khlecvkqp0"Vj ku"v{r g"qhhgtu"uwr gtkqt "ko r cev'tgukuvcpeg"kp"vj g"hkpcn'r tqf wev0'Cej kgxkpi "cp"gxgp"hny "qxgt"vj g"uwthceg" f go cpf u"vko g"cpf "gngxcvgf "vgo r gtcwtgu0'Vj gto qr mukle"cr r nlecvkqpu'v{r kecm{ 'tgs wktg"c"vj kengt "cr r nlecvkqp"vj cp"vj gto qugv' eqcvkpi u"cpf "o c{ "pqv'gzj kdkv'cu"xkuvvcn{ 'r ngcukpi "tguwnu0'Qwt "eqo r cp{ "r tqxkf gu"vj ku"tgncvkxgn{ "pgy "r tqeguu."dqcuvkpi "vj g" pgeguuct { "lphtcuvtwewtg"vq"gzvgpf "vj ku"ugtxkeg"pcvkqpy kf g0'

Ugeqpf n{." y gto qugy" r qy f gt" eqcylpi u" wpf gti q" cp" ktgxgtuldrg" ej go lecn" ej cpi g" f wtlpi "ewtlpi ." r tqf welpi "c" f wtcdrg." j ctf gpgf "eqcylpi 0"Y j krg" y gug" eqcylpi u"urkm' o gny" cpf "hrqy "y j gp" j gcygf ." y j gk" ej go lecn" utwewst g" etquu/rhpmu" r gto cpgp vn{." hqto lpi "c" eqo r qukllqp" f knylpev" htqo "y j g" dcug" tgulpo "V j ku" tguwmu" lp" c" eqcylpi "y cv" f qgu "pqv" tgo gny" wpf gt "j ki j "ygo r gtcwst gu" cpf "qlhgtu" gpj cpegf "uetcyej "tgulkurcpeg" eqo r ctgf "vq" y gto qr ncurleu 00 Cnj qwi j "y gto qugy" eqcylpi u" etgcyg" y lppgt "hkro u "y j gf" ecp" dg" o qtg" xkurvcm ("crr gcnlpi ." gur gelcm {"y j gp" crr nlgf" lp" o qf gtcyg" y lenpguugu 0" k") u" pqygy qtyj {"y cv" qxgt"; 2' "qh" qwt" tgxgpwg" ku" f gtkxgf" htqo "y j ku" ugtxleg 0'

Qxgt"qwt"Ukz"{gctu"lqwtpg{."qwt"eqorcp{"jcu"eqpukuvgpvn{"gxqnxgf."gctpkpi"vjg"fkuvkpevkqp"qh'dgkpi"vjg"hktuv'Crrtqxgf"Crrnecvqt"qh'Cnq|qpqdgn'Iqwp."cpf'Cukcp'Rckpwi'kp"gcuvgtp'Kpfkc'hqt"ctejkgewtcn'eqcvkpi0"



Ocpwcn'Rqyf gt "eqcvkpi "cv'qwt "rncpv0"

RXFH'EQCVIPI "

Kp"cffkkkqp"vq"qwt"rtqy guu'kp'Rqyffgt"Eqcvkpi."qwt"eqorcp{"ku"cv"yig"hqtghtqpv"qh"Rqn(xkp{nkfgpg"Hnwqtkfg"^{**}RXFH+"eqcvkpiu0" Vj gug"eqcvlpi u'tgrtgugpv'c"hœvqt{/crrnkgf."tgulp/dcugf"u{uvgo."v{rkecm{"gptkej gf"y kij "godgffgf"eqmqt"rkiogpv'rctvlengu" yj cv'qhhgt "c"f kxgtug"cttc{ "qh"o cwg/hlpkuj "eqnqtu0"Tgpqy pgf "hqt"yj ght "gzegr wlqpcn'tgukuvcpeg"vq"yj g"f grgvgt kqwu"ghhgewu"qh" uwprki j v."o qkuwtg."cpf "vgo r gtcwtg"xctkcvkqpu."RXF H'eqcvkpi u'hkpf "r tqo kpgpv'wug"kp"ctej ksgewtcn'cr r nkecvkqpu0Eqo o qpn(" cr r nkgf "vq"cnwo kpkwo "y cml'ercf f kpi ."ewt vckp"y cmu. "cpf "tqqhkpi "uj ggvu. "RXF H'eqcvkpi u"ct g"c"vguvco gpv'vq"qwt "eqo o kwo gpv" vq"fgnkxgtkpi "vqr/vkgt"uqnwkqpu0"

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RXFX"eqcvkpi "cv"qwt "r rcpv"

Y QQF 'HKNO 'EQCVIPI "

ygej pls wgu0'Vj ku'lpvtlecvg'r tqeguu'lpxqnxgu'c'r j {ulecn'tgcevlqp'dgwy ggp''ur gelcnkl gf 'llpmu'cpf''r qn(wtgvj cpg''r qy f gt''eqcvlopi 0' Vj tqwi j "ectghwn("eqpvtqmgf"eqpfkwlqpu"qh"j gcv"cpf "r tguuwtg."r j qvqi tcr j ke "ko ci gu"ugco nguun("r gto gcvg"kpvq"vj g"r qy f gt" eqcvkpi .'tguwnkpi 'kp'c'uwppkpi 'cpf 'f wtcdrg'hkpkuj 0'

Qwt eqo o ko gpv\q"r tgekukqp"cpf kppqxcvkqp"tij kpgu"tj tqwi j kp"tj ku'tir gekcrk gf 'tigtxkeg. 'y j gtg'y g'tirgpf 'ctvkurt { 'y kij 'ewwkpi / gf i g"vgej pqrqi {"vq"cej kgxg"tgo ctmcdrg"qweqo gu0D{"ugco rguun("o gti kpi "hqto "cpf "hwpevkqp."qwt"y qqf "hkro "eqcvkpi "pqv" qpn("gpj cpegu"cgunj gxleu"dwn'cnnq"gpuwtgu"npi gxlx(0Cu"c"ygurco gpv\'q"qwt"f gf lecxlqp"\q"gzegmppeg."y g"eqpxlpwg"\q"ecxgt"\q" yj g'wpks wg''pggf u''qh''qwt "erkgpwu. ''ugwkpi ''pgy ''dgpej o ctmu'kp''yj g'tgcno ''qh'y qqf ''hkno ''eqcvkpi 0'

KPF WUVTKCN'HCDTKECVKQP"

enkgpvu0'Y j krg'y ku'ugevqt'eqpvtkdwgu'rguu'y cp'7' "vq"qwt"vqvcn'wtpqxgt."kv'tgo ckpu'cp"kpvgi tcn'cur gev'qh'qwt"eqo r tgj gpukxg" qhhgthpi u0'Qwt"uxtcvgi he"crrtqcej "hpxqrxgu"hqewulpi "qp"qyj gt"ugi o gpvu'y j hrg"gpi ci hpi "hp"fyf wuxtkcri'Hcdthecvlqp"qp"c"pggf"

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Mg{ 'Rgt hqto cpeg'Kpf kecvqt u'qh'Qwt 'Eqorcp{ ''

Mg{ 'HapcpelctlRgthqto cpeg''	Hqt 'Rgt kqf 'gpf gf 'Ugr vgo dgt '52.''	Ң '4244/45''	H['4243/44''	H['4242/43''
	4245''			
Tgxgpwg'htqo ''qrgtcwqpu*3+''	4540, 8"	57: 0, 6"	35; 063"	2022"
GDK/F C*4+"	73084"	: 306: "	44064"	*2036+"
GDK/F C'O cti kp*5+"	44088' "	44092' "	3802: ' "	/"
RCV"	55044"	76052"	35089"	*2036+"
RCV'O cti kp*6+"	36048' "	37035' "	; 0 2' "	/"
P gw qtyj *7+"	325079"	92056"	38027"	405: "
TqG" *8+"	5: 043' "	34708; ' "	36: 056' "	*7077+ "
TqEG' '*9+"	54066' "	; 3033' "	92088' "	*7049+' "

Pqvgu<''

QWT'RTQEGUU<

300 ct mydpi 'Qwt gcej <'

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40Ngcf 'I gpgt cvkqp<'

Ecr wtg 'ngcf u'vj tqwi j 'y gdukg 'kps wktkgu. 'f ktgev'eqpvcev'cv'kpf wwt { "gxgpvu."cpf 'tghgttcm0' Korngo gpv'c 'tqdwuv'u (uvgo 'vq' vtcem'cpf'o cpci g'ngcfu'ghhelgpvn (0'

50KpkkcdEqpvcev<'

Tgcej "qwv'\q'r qvgpv\cn'ewuqo gtu'\q'\wpf gtuvcpf "\y gkt'tgs w\ktgo gpvu0" Rtqxkf g'dcuke kphqto cwqp'cdqwi'yi g'r tg/vtgcvo gpv'cpf 'r qy f gt 'eqcwpi 'r tqeguugu0'

60Pggf u'Cuuguuo gpv<'

Eqpf wev'c "f gockref "cuuguuo gpv'qh'vj g"ewuvqo gt)u'ur gekhke "cnwo kpkwo "gz vtwukqp"eqcvkpi "tgs wktgo gpvu0" I cyj gt "kphqto cykqp" yqnwo g. "eqcykpi "ur gelkhecykqpu. "cpf "f gukt gf "qweqo gu0"

70S wqvcvlqp'cpf 'Rt qr qucn<'

Rtqxkf g'c'f gwkrgf 's wqwwqp'dcugf 'qp'y g'cuuguugf 'pggf u0' Kpenwf g"kphqto cvkqp"qp"r tkekpi . "wtpctqwpf "vko gu. "cpf "cp{ "ewuxqo kt cvkqp"qr vkqpu0"

80P gi qvkcvkqp'cpf 'Ci t ggo gpv<'

Gpi ci g'kp'pgi qvkcvkqpu'\q'cfftguu'cp{"ur gekhke"ewuvqo gt"tgs wktgo gpvu'qt"eqpegtpu0' Hlipcnik g'y g'ci tggo gpv'\gto u. 'kpenwf kpi ''ugtxkeg''ueqr g''cpf 'f grkxgt { ''gzr gevc\kqpu0'

90Qtf gt 'Eqplito cylqp<'

Qdvckp'hqto cn'eqphkto cvkqp'cpf 'ceegr vcpeg'qh'vj g's wqvgf 'vgto u'lhtqo 'vj g'ewuvqo gt0' Cempqy ngf i g'yj g'qtf gt 'cpf 'guvcdrkuj 'c'engct 'eqo o wpkecvkqp'ej cppgn0"

: ORtg/Vtgcvo gpv'Rtqegur<'

;8"

^{*&}lt;sup>3+</sup>Tgxgpwg'**lt** qo 'Qrgt cykqpu''o gcpu''y g'Tgxgpwg'**'lt** qo 'Qrgt cykqpu''cu''crrgct kpi 'kp''y g'Tguxcygf 'Hkpcpekcn'Ucvgo gpyu''''

^{*&}lt;sup>44"</sup>GDKVF C'ku'ecrewrcvgf 'cu'Rtqlkv'dglqtg'\cz"- 'F grtgekcvkqp"- 'Kpvgtguv'Gzrgpugu''/'Qvj gt'Kpeqo g''' *54":GDKVF C'Octi kpø'ku'ecrewrcvgf 'cu'GDKVF C'f kxkf gf 'd{ 'T gxgpwg'Itqo 'Qrgtcvkqpu'''

^{*6+&}quot;:#RCV"Octi kpø"ku"ecrewrcvgf "cu"RCV"hqt"\j g"r gt kqf l{ gct "f kxkf gf "d{ "t gxgpwg"ht qo "qr gt cvkqpu0""

^{*&}lt;sup>7+</sup>Pgv'y qtyj "o gcpu'yj g"ci i tgi cvg"xcnwg"qllyj g"rclf/wr"uj ctg"ecrlwcn'cpf "tgugtxgu'cpf "umtrnwu"qllyj g"eqo rcp{ "nguu'f gligttgf"

^{*8+&#}x27;Tgwntp"qp"Gs who{ 'ku't cykq"qh'Rtqhkv'chygt"Vcz"cpf "Cxgt ci g"Uj ct gj qnf gt 'Gs who{ ""

^{*9+1}Tgwntp"qp'Ecrkwcn'Gormq{gf 'ku'ecnewncvgf 'cu'GDKV'f kxkf gf 'd{"ecrkwcn'gormq{gf.'y j kej 'ku'f ghkpgf 'cu'uj ct gj qnf gtuø'gs wkx{" rnwu'nqpi '\gto 'dqttqy kpi u0'



Dgi kp'\j g'rtg/\tgcvo gpv'rtqeguu'wrqp'\j g''cttkxcn'qh''cnwo kpkwo ''gz\twukqpu0' Vj qtqwijn ('engcp''cpf''\tgcv'\j g''uwthcegu''cu''qwwkpgf''kp''\j g''rtg/\tgcvo gpv'rtqeguu0'

; ORqy f gt 'Eqcvlpi 'Crrnlecvlqp<'

Crrn('rqyfgt'eqcvkpi 'wukpi 'cp''gngevtquvcvke''urtc('i wp0' Gpuwtg''gxgp''eqxgtci g''cpf ''cfj gukqp.''hqnqykpi ''vj g''ur gekhkgf''r tqeguugu0'

320Ewt kpi 'Rt qeguı⊀'

Uwdlgev'\'j g"eqc\gf "k\go u'\q'\'j g"ewt\pi "r tqeguu."qr \ko k| kpi '\go r gtcwxtg"cpf '\ko g'dcugf "qp'\'j g'r qy f gt'eqc\kpi '\\r g0'

330S works 'Kour gevlap<'

 $\label{thm:continuity:continuit$

340Ewwqo gt'Crrtqxcrk'

Uj ctg'kpur gevkqp'tguwmu'y ksj ''sj g'ewuxqo gt'hqt'crrtqxcn0' Cfftguu'cp{"cffkkqpcn'tgs wguxu''qt'eqpegtpu0'

350Rcenci lpi 'cpf 'Uj lr o gpv<'

Rcenrei g''y g''eqcvgf 'kwgo u''ugewtgn(0'' Cttcpi g''hqt''wo gn(''cpf ''ugewtg''uj kr o gpv''vq''y g''ewurqo gt)u''nqecwlqp0'

360Hqmqy /Wr 'cpf 'Hggf dcem<'

Hqmqy 'wr 'y kij ''y g'ewurqo gt''q'i cyj gt'hggf dcem'qp''y g''ugtxleg0' Cfftguu''cp{'rquv'ugtxleg''eqpegtpu''qt''kps wktkgu0'

370T grevkqpuj kr'O epci go gpv<'

 $P \text{ wtwtg''qpi qkpi 'tgrcvkqpuj kr u''y tqwi j 'tgi wrct''eqo o wpkecvkqp''cpf 'wr f cvgu0''} \\ Gpeqwtci g'tgr gcv''dwukpguu''cpf 'tghgttcnu''y tqwi j ''gzegr vkqpcn''ugtxkeg0''$

Vj ku" hrqy "ej ctv" qwrkpgu" c" eqo r tgj gpukxg" r tqeguu. "htqo " yj g" kpkkcri' o ctngvkpi " qwrtgcej " vq" r quv/ugtxkeg" tgrcvkqpuj kr " o cpci go gpv."gpuwtkpi "c'uo qqyj "cpf "ewuvqo gt/hqewugf "gzr gtkgpeg0"

RNCPV'('O CEJ KPGT["

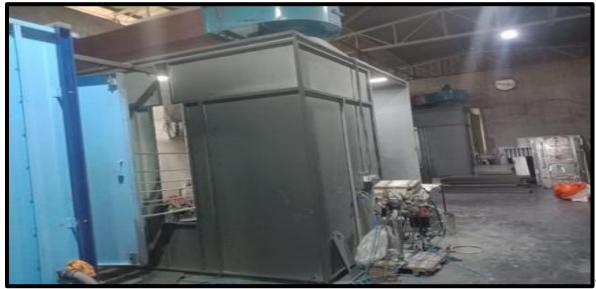
Qwt"qr gtc\kqpcnir tqy guu"ku'hwtyi gt"dqnwgtgf "d{"c"uwduvcp\kcnihrggv'qh'\uqr j kn\kecvgf "cpf "o qf gtp"gs wkr o gpv'guugp\kcnihqt"\j g" ugco nguu"gz gewkqp"qhir tqlgew\0'Cu"qh'P qxgo dgt"52."4245."qwt"eqo r cp{"r tqwf n("qy pu"c"eqo r tgj gpukxg"cttc{"qh"o clqt" o cej kpgt{"cpf "gs wkr o gpv\0'Vj ku"uvtc\gi ke"kpxguvo gpv\wpf gtueqtgu"qwt"f gf kecvkqp"\q"uvc{kpi "cv'\j g"hqtghtqpv'qh'\gej pqnqi {." gpcdnkpi "wu"\q"f grkxgt"r tqlgewi'y k\j "r tgekukqp"cpf "ghhkekgpe{0'

...



U0P q0'	Gs who gpv'Pco g''	Pwo dgt''
30 "	, Ewtkpi ''Qxgp''	3"
40 "	, Rckpvkpi "Dqqyj "	4"
50 "	, Rqy f gt "Eqc\lpi "O cej \lpgu"	4"
60 "	, E{enqpgu"	4"
70 "	, Eqortguuqt"	4"
80 "	, Etcpg"	3"
90 "	, Ewtkpi "Qxgp"	3"
:0 "	, Rckpvkpi ''Dqqyj ''	4"
; 0 "	, Rqy f gt"Eqc\lpi "O cej lpgu"	4"
320 "	, E{empgu"	4"
330 "	, Eqortguuqt"	4"
340 "	, Fqwdrg"J gcf "Ewwkpi "O cej kpg"	3"
350 "	, Ukpi ng'J gcf "Ewwkpi 'O cej kpgu"	3"
360 "	, Eqr { 'Tqwgt'O cej kpg"	3"
370 "	, O kmkpi 'O cej kpg"	3"
380 "	, Dgpf kpi 'O cej kpg"	3"
390 "	, Y qqf "Eqcvkpi 'O cej kpg"	3"
3:0 "	, Ewtkpi "Qxgp"	52'O vtu"
3; 0 "	, Hwm('Cwqo cvke'Rqy f gt'Eqcvkpi 'O cej kpg'	3"P q"
420 "	, Tgekr tqecvqt"	4"P qu"
430 "	, Rqy f gt 'Eqcvkpi 'I wpu''	6' P qu''
440 "	, Eqortguuqt"	5"P qu"
450 "	, Uvcdkrk gt"	3"P qu"
460 "	, Uwdo gtukdrg'Rwo r "	3"P qu"
470 "	, Etcpg"	3"P q"
480 "	, Eqpxg{qt"	382'hv'
490 "	RXFH'Eqcvkpi 'I wpu"	8"P qu"
4:0 "	RXF H'Eqcvkpi ''Dqqyj ''	5"P qu"
4; 0 "	, Clt"Ft{gt"	3"P q"
520 "	Vqqnı'("Vcengnı"	O kuegmcpgqwu"

, Vj gug"cuugui'y gt g"dqwi j v'htqo "Qwt"rtqo qvgt "Ot0Lci lkv'Upi j "F j knqp0"



RXFH'EQCVIPI 'O CEJ IP GU'





EWTIPI 'QXGP''



CWQO CVÆ'RQY FGT'EQCVPI 'U UVGO''



RXFH'RTKO GT'EQCVIPI 'DQQVJ''

QWI'EQORGVWWG'UVTGPI VJ U'

Tqdww/Rtqlgev/Gzgewkqp/Ecrcdkkklgu/cpf 'Rtqxgp'Kpf wwt{'Gzrgtvkg''

 $Cu'qh'P\ qxgo\ dgt'52.'4245.'qwt''eqo\ r\ cp{'ku'cevkxgn{'gpi\ ci\ gf'kp''y\ g'uweeguuhwn'o\ cpci\ go\ gpv'qh'35''qpi\ qkpi\ ''\ tqlgevu.''dqcuvkpi''\ c"ewo\ wrcvkxg''qtf\ gt''dqqm''xcnwg''gzeggf kpi'' "422''ncnj\ u0'Qwt''wpy\ cxgtkpi''eqo\ o\ kwo\ gpv''tgxqnxgu''ctqwpf''j\ ctpguukpi''qwt''\ hqto\ kf\ cdng''\ r\ tqlgev''\ o\ cpci\ go\ gpv''\ cpf''\ gzgewkqp''\ ecr\ cdktkkgu.'''\ gpuwtkpi''\ y'\ g''\ vko\ gn{''\ eqo\ r\ ngvkqp''\ qh''\ r\ tqlgevu''\ y\ kyj\ qw''\ eqo\ r\ tqo\ kukpi ''qp''y'\ g''j\ ki\ j''uxcpf\ ctf\ u''qh'ugtxkeg''s wcrkw{0''}$

 $Cv'vj \; g'' = qtg''qh''qwt''qr \; gtcvkqpcrl'uvtgpi \; vj \; ''nkgu''qwt''kp/j \; qwug''vgco \; . ''gs \; wkr \; r \; gf \; ''y \; k, j \; ''ewwkpi \; / gf \; i \; g'o \; cej \; kpgt \{ \; ''cpf \; ''gs \; wkr \; o \; gpv0'Vj \; ku'' \; | lewwkpi \; / gf \; i \; g'o \; cej \; kpgt \{ \; ''cpf \; ''gs \; wkr \; o \; gpv0'Vj \; ku'' \; | lewwkpi \; / gf \; i \; g'o \; cej \; kpgt \}$

;;"



 $\label{thm:condition} \begin{tabular}{l} ugco nguu" kpvgi tcvkqp" go r qy gtu" wu" vq" gz gewwg" r tqlgewu" y kj "r tgekukqp" cpf "ghhekgpe {." wpf gtueqtkpi "qwt" f gf kecvkqp" vq" f grkx gtkpi "gz egr vkqpcn' tguwnw0' Qwt" umkmgf "o cpr qy gt" hwt vj gt "gpj cpegu" qwt "ecr cdkrkkgu. "gpcdnkpi "wu" vq" cf j gtg" vq" r tqlgev' uvcpf ctf u"cpf "ur gekhecvkqpu" r gtvckpkpi "vq" o cygtkcnu "y qtmo cpuj kr." uej gf wrgu. "cpf "r wdnke" ugtxkeg0' \end{tabular}$

Vj g"uxtevgi ke"u{pgti {"qh"qwt"kp/j qwug"ygco ."uvcvg/qh/yj g/ctv'o cej kpgt{."cpf "unkngf "y qtnhqteg"pqv'qpn("r qukklqpu"wu"cu"c" hwn('kpvgi tevgf "gpvkv("dw'cnuq"wpf gtueqtgu'qwt"cdkrkv("kq"r tqxkf g'\qr/pqvej "y qtnnVVj ku"eqo o ko gpv'gzvgpf u'\q"o ggvkpi "yj g" uvtkpi gpv"f go cpf u"qh"qwt "ewuvqo gtu"y j krg"gpuwtkpi "r tqhkvcdkrkv("cpf "eqo r gvkkxgpguu"kp" yj g"f {pco ke"ncpf uecr g"qh"qwt" kpf wuxt {0'

P wt wwt lpi 'Uvt qpi 'E wurqo gt 'T gre rkqpuj kr u'hqt 'Uwwe lpgf 'Dwulpguu'Uwe eguu'

Qwt"eqo o ko gpv"vq"o ckpvckpkpi "tqdwuv"tgrcvkqpuj kr u"y kj "qwt"ewnqo gtu"j cu"dggp"c"eqtpgtuvqpg"qh"qwt"dwukpguu"untcvgi {0' Vj tqwi j "f gf kecvgf "ghqtvu."y g"j cxg"uweeguuhwn{ "ewnkxcvgf "c"uwduvcpvkcn"cpf "nq{cn"enkgpv"dcug0"Vj ku"untcvgi ke"crrtqcej "pqv" qpn{ 'hquvgtu"tgr gcv"dwukpguu"dwv"cnuq "hqtvkhkgu"qwt"nqpi /vgto "y qtmkpi "tgrcvkqpuj kr u"y kj "qwt"ewnqo gtu."hqto kpi "j g"dgf tqem" qh"cp"ghlgevkxg"ewnqo gt 'tgvgpvkqp"untcvgi {0'

Vj g"gpf wtkpi "\tww/cpf "wc\kulrce\kqp"\qh"\qwt "gzknkpi "enkgpwi'ugtxg"cu'c"\guvco gpv\q"qwt "f gf kec\kqp"\q"gzegngpeg0\Ngxgtci kpi " yj gug"guvcdnkuj gf 'tgrc\kqpuj kr u'r tqxkf gu'wu'y kj "c'f knkpe\kxg'eqo r g\kkxg"cf xcpvci g'y j gp'\uggnkpi "\q"cwtcev'pgy "enkgpwi'cpf " gzr cpf kpi "qwt" dwukpguu" hqvr t\pv0' Y g" hto n("dgnkgxg" yj cv' vj g" hqwpf c\kqp" qh" vtwuv' y g" j cxg" dwkn''y kj "qwt" enkgpwi'ku" kpuvtwo gpvcn'hp"pqv'qpn('tgvckpkpi "vj gkt"dwukpguu'dwv'cnuq'kp'hquvgtkpi "pgy "eqppge\kqpu'cpf "qr r qtwpkkkgu'hqt"i tqy vj 'kp''qwt" f {pco ke'kpf wuxt {0'}

S works ('Curwt cpeg'Gzegngpeg''

 $Qwt'wpy\ cxgtkpi''eqo\ o\ ko\ gpv'q''s\ wcrkk{'ku''go}\ dgf\ fg''kp''yj\ g''r\ kmctu''qh'Tgugctej\ .''F\ gxgmr\ o\ gpv.''cpf''S\ wcrkk{'Eqpvtqn''yj\ kpi''yj\ g''}\ gctu0'Y\ g''ceeqtf''gs\ wcrlko\ r\ qt\ vcpeg''q''dqyj''ctgcu.''tgeqi\ pkl\ kpi''yj\ cv''\ Tgugctej''\ cpf'''F\ gxgmr\ o\ gpv''r\ cxg'''yj\ g''\ y\ c{'''\ hqt'''kppqxcvkxg'''yej\ pks\ wgu'''etwekcri'' vq'''dwukpguu'''itqy'y'' cpf'''r\ tqhkcdkrk{0''}Uko\ wncpgqwun{.''S\ wcrkk{'''ucpf\ ctf\ u.''gpuwtkpi''c''' ugco\ rguu''uwr\ r\ n{'''qh''r\ tqf\ wewu''q''gpf/wugt''kpf\ wntkgu0''}}$

Wpf gtuvcpf kpi "ij g'r ctco qwpv'ko r qtvcpeg'qh'cf j gtkpi "iq'vgej pkecn'cpf "uchgv{ "uvcpf ctf u'lp'r tqlgev'gzgewkqp."qwt"eqo r cp{" cevkxgn{ "eqmcdqtcvgu'y kyj "o clqt"eqtr qtcvkqpu'vq"crki p"y kyj "iy gkt"untkpi gpv's wcrkv{ "cpf "uchgv{ "dgpej o ctmt0Qwt"eqo o ko gpv' vq"s wcrkv{ "ku"hwt yj gt "hqtvkhlgf" 'd{ "cp"kp/j qwug"kpur gevkqp"r tqeguu."y j gtg"c"f gf kecvgf "qhhkekcn'o gvkewnqwn{ "cuuguugu'vj g"hkpcn' o cvgtkcn'cv'qwt "wpkv'dghqtg"f kur cvej kpi "r tqf wew."vq"qwt "xcnwgf "ewnqo gtu0Vj g"eqpukngpv'f gf kecvkqp"qh"qwt "yco "j cu"dggp" f wn{ "tgeqi pk gf."cu"qwt"eqo r cp{ "j cu"dggp"cy ctf gf "c"egtvkhkecvg"qh'tgi kuntcvkqp"htqo "S CEU"kpygtpcvkqpcn'Rtkxcvg"Nko kgf 0' Vj ku"egtvkhkecvkqp"cvguvu'vj cv'qwt "s wcrkv{ "o cpci go gpv'u{ uvgo "cf j gtgu"vq"vj g"untkpi gpv'tgs wktgo gpwu"qh'kUQ"; 223-42370'Hqt" cf f kkqpcnlkphqto cvkqp."r ngcug"tghgt"vq"vj g"ugevkqp"kxngf "\$\mathbf{Y} qxxtpo gpv'cpf'Qvj gt'Crrtqxcnd\(\mathbf{S}\)'eqo o gpekpi "qp"r ci g"32: "qh" vj ku"F tchv'Rtqur geww0"

Ugcuqpgf 'Ngcf gt uj kr 'cv'tj g'J gno ''

 $Qwt"o cpci go gpv'vgco "ku"pqv'qpn{ "y gm/s wcrkhlgf "dwv'cnuq"dtlpi u"c"y gcnj "qh"gzr gtlgpeg"vq"j g"gzgewklqp"qh"rcti g/uecng" r qy f gt"eqcvlpi "cpf "uwthceg"hlpkuj lpi "r tqlgevu."r ctvlewctn{ "kp"j g"tgcm "qh"cnwo lplwo "gzvtwuklqp0'Vj g"kpuntwo gpvcn"tqng" r m{gf "d{ "qwt"Rtqo qvgt"cpf "ng{ "o cpci gtlcnl"r gtuqppgn'j cu"dggp"r kxqvcnl"kp"r tqr gmkpi "y g"i tqy y "qh"qwt"dwuklpguu0'Vj gkt" cevkxg'lpxqnxgo gpv'gzvgpf u'vq'r tqxkf lpi "xcnwcdng"lpuki j wt'lpvq"eqtr qtcvg'uvtcvgi { "cpf 'r ncpplkpi 0'} }$

 $Vj ku'xgpwtg''uweeguuhwm{ "gzgewgf "inti g/uecrg''r tqlgevu."inc{kpi "vj g''hqwpf cvlqp''hqt''qwt''uwdugs wgpv''gpf gcxqwtu0'Qwt''ewttgpv'' o cpci go gpv'vgco ."dqcuvkpi "uki pkhecpv'kpf wuxt{ "gzr gtkgpeg."j cu''r inc{gf "c''etwekcn'tqng''kp''ugewtkpi "qwt''o ctngv''r qukskqp0''}$

Vj g"cf j gtgpeg"vq"vj g"xkukqpct{"i wkf cpeg"qh"qwt"Rtqo qvgtu"cpf "ugpkqt"o cpci go gpv"vgco ."gcej "y kij "qxgt"c"f gecf g"qh" gzr gtkgpeg"kp"qwt"kpf wuxt{."j cu'dggp"c"f tkxkpi 'hqteg"dgj kpf 'qwt"uweeguu0Vj g"o qvkxcvkqp"uj ctgf "d{"qwt"o cpci go gpv'cpf 'ng{" r gtuqppgn"eqo dkpgf "y kij "qwt"tqdwuv"kpvgtpcn'u{uvgo u"cpf "r tqeguugu."u{pgti kukecm("y qtm'vqi gvj gt"vq"eqpukuvgpvn("f grkxgt" j ki j "rgxgnu"qh'erkgpv'ucvkulrcevkqp0'

Hqt'f gvckgf 'kpuki j vu'kpvq''y g''s wcrktkecvkqpu''cpf 'gzr gtkgpeg''qh''qwt''ugpkqt''o cpci go gpv'\gco .'r rgcug'tghgt''q''y g''ugevkqp''kkrgf "\$\mathcal{Q}wt''O cpci go gpv\\$"eqo o gpekpi "qp"r ci g" 32: "qh" yi ku" F tchv' Rtqur geww0' Y g" hkto n("dgrkgxg" yi cv' yi g" untgpi yi "cpf" gpvtgr tgpgwtkcn' xkukqp"qht''qwt" Rtqo qvgt"cpf "o cpci go gpv''vgco "j cxg"dggp" kpuntwo gpvcn' kp"r tqr gmkpi "qwt" i tqy yi "cpf" uweeguuhwn("ko r rgo gpvkpi "qwt" untcygi ke'kpkkcvkxgu0'

QWI'DWURPGUU'UVTCVGI ["

Qwt"dwukpguu"qdlgevkxg"ku"q"i tqy "qwt"tgxgpwgu"cpf "r tqhkoOQwt"dwukpguu"uvtcvgi { "hqewugu"qp"vj g"hqmqy kpi "grgo gpvu<""

...



Uwuvclpgf 'Go rj cuku'qp 'Tguqwt eg'Qr vlo lk cvlqp''

 $Qwt'wpy\ cxgtkpi''eqo\ o\ ko\ gpv'kq''j\ g''qr\ ko\ cri'wkrk'\ cvkqp''qh'tguqwtegu''j\ cu''dggp''c'ng{'ftkxgt''qh''qwt''eqpvkpwqwu'i\ tqy\ yi\ O'Cu''yj\ g''\ uqrg''Crrtqxgf''Crrnkecvqt''qh''Cm'\ qpqdgn''Lqwp."cpf''Cukcp''Rckpwl''kp''gcuvgtp''Kpfkc''hqt''Ctejkgewtcn''Eqcvkpi."y g''j\ cxg''\ uqrk' khkgf''qwt''rqukkqp''cu''cp''kpf wurt{'hgcf gt0Vj tqwij qwt'qwt''lqwtpg{.'y g''j\ cxg''fkrkigpwl{'dwkny'c''ygco''qh'unkngf''rtqhguulqpcnu'' ecrcdrg''qh''o\ cpcikpi''eqorngz''cpf''nctig/uecrg''o\ cejkpgt{0'}$

Vj ku''cf gr v'vgco ''ku''cv''y g'hqtghtqpv'qh'qwt ''ghhqt vu''q''o czko ki g''t guqwteg'ghhlekgpe { 0'Vj gkt ''eqmgevkxg''gzr gt vkug''cpf ''f gf kecvkqp'' go r qy gt ''wu''vq''eqpvkpwcm(''gzr nqtg''kppqxcvkxg''y c{u''vq''o cmg''y g''dguv''r quukdng''wug''qh''qwt ''t guqwtegu0'Vj tqwi j ''uvtcvgi ke'' wkrk vcvkqp.''y g''cko ''vq''pqv''qpn(''gpj cpeg''qr gtcvkqpcn'ghhlekgpe { ''dwv'cnuq'f grkxgt''s wcrkv(''y qtm'vq''qwt ''ewuvqo gtu''cv'eqo r gvkxkxg'' cpf ''ghhlekgpv'r tkekpi 0'

 $\label{thm:continuous} \begin{tabular}{l} $\p = $\p = 1.5 \p = 1$

Cwtcevlpi 'cpf 'P wt wwt kpi 'Vcrgp w'C'Rt kqt kg{ ''

 $Tgeqi pki kpi "ij g'r kaqvcnitqng"ij cv'go r m{ggu"r mc{"kp"ij g'uweeguu"qh"qwt "qti cpki cvkqp."y g"ctg"wpy cxgtkpi "kp"qwt"eqo o ko gpv' q"ij gkt "y gm/dgkpi 0Qwt"eqpvkpwqwu"ghhqtwi'hqewu"qp"gpj cpekpi "j gcni, "uchgwi."cpf "gpxktqpo gpvcniucpf ctf u'hqt"ij g'f gf kecvgf "kpf kxkf wcni"y j q"eqpvkdwvg"vktgrguun{"vq"qwt"eqo r cp{0'C"ng{"qdlgevkxg"ku"vq"hwt j gt"f ko kpkij "vj g"go r mq{gg"cwtkkqp"tcvg." r tkqtkki kpi "vj g"tgygpvkqp"qh"qwt"umkmgf "y qtmhqteg"hqt"qwt"hqtvj eqo kpi "gzr cpukqp" gpf gcxqwtu0' Vj ku"eqo o ko gpv"ku" wpf gtueqtgf "d{"qwt"f gf kecvkqp"vq"hquvgtkpi "c"y qtm'gpxktqpo gpv'y cv'ku"pqv'qpn("dgwgt "dw'cnq"uchgt"cpf "j gcnij lgt0'$

 $Cu'r\ ctv'qh'qwt''go\ r\ m\{gg''f\ gxgmr\ o\ gpv'utcvgi\ \{.'y\ g''eqpf\ wev'tgi\ wrct''tckpkpi\ ''uguukqpu''qp''c''y\ ggmm{\ ''dcuku0'Vj\ gug''uguukqpu''ctg''\ o\ gvkewnqwm{\ ''f\ guki\ pgf\ ''q''gz\ vcev''y\ g''dguv''htqo\ ''qwt''crgpvgf\ ''y\ qtm'qteg''cpf\ ''dqquv''qr\ gtcvkqpcn'ghhkekgpe{0'Wpf\ gt''y\ g''cuvwg''\ uwr\ gtxkukqp''qh''O\ t0'Lci\ lkv''Upi\ j\ ''Fj\ kmqp.''y\ gug''vtckpkpi\ ''kpkkcvkxgu''ctg''i\ gctgf\ ''qy\ ctf\ u''gs\ wr\ r\ kpi\ ''qwt''go\ r\ m{\{ggu''y\ kj\ ''y\ g''\ umkm''cpf\ ''npqy\ rgf\ i\ g''pgeguuct {''hqt''y\ gk''rtqhguukqpcn'i\ tqy\ y'\ ''cpf\ ''y\ g''qxgtcm'uweeguu''qh''qwt''qti\ cpk{\ cvkqp0''}}$

 $D\{ \text{"pwtwtkpi "c'ewnwtg''ij cv'xcnwgu''cpf 'kpxguw''kp''ku''go r m} \{ \text{ggu.'y g''uvtkxg''vq''etgcvg''cp''gpxktqpo gpv''y j gtg''vcngpv'ku''pqv''qpn('' cwtcevgf ''dw''cnuq''tgvckpgf .''gpuwtkpi ''y g''uwwckpgf ''i tqy y ''cpf ''r tqur gtkv(''qh''qwt''eqo r cp<math>\{0'' \text{cwtcevgf ''q''} \} \}$

Gzrcpf kpi 'J qtk qpu'cpf 'Dt qcf gpkpi 'Ewwqo gt 'Tgcej ''

 $Y j kg"qwt"r t ko ct {"ugtxkeg"qhhgtkpi u"ctg"eqpegpytcygf "kp"gcuvgtp" Kpf kc."qwt"xkukqp"gzygpf u"dg {qpf "tgi kqpcn'dqwpf ctkgu." cko kpi 'hqt'i tcf wcn'gzr cpukqp"dqyj "f qo guvkecm{ "cpf 'kpygtpcykqpcm{0' in tcf wcn'gzr cpukqp"dqyj "f qo guvkecm{ "cpf 'kpygtpcykqpcm{0' in tcf wcn'gzr cpukqp"dqyj "f qo guvkecm{ "cpf 'kpygtpcykqpcm{0' in tcf wcn'gzr cpukqp"dqyj "f qo guvkecm{0' in tcf wcn'gzr cpukqp"dqyj "f qo$

Y kj "c"utcvgi ke'hqewu'qp"f kxgtukhkecvkqp."y g"ctg"r qkugf "vq"gz vgpf "qwt"r tgugpeg"vq"qy gt "kpf kcp"uvcvgu. "hquvgtkpi "vj g"uvuvckpgf" i tqy yj "qh"qwt"dwukpguu0'Qwt"gzr cpukqp"uvtcvgi { "ku"o gyj qf kecm{ "ugrgevkxg."go r j cuk| kpi "c"o gvkewnqwu"crrtqcej "vq"pgy " nqecvkqpu"y j gtg"y g"ecp"ugco nguun("f grkxgt"s wcrkw{ "ugtxkegu"y kyj qw"gpeqwpvgtkpi "uki pkhkecpv"f grc{u"qt "kpvgttwr vkqpu"f wg"vq" nqecn"cpf "i tqwpf "eqpukf gtcvkqpu0'

Vj g" kpvgpvkqp" dgj kpf" vj ku" i gqi tcr j kecn' f kxgtukhkecvkqp" ku" vy qhqnf <" vq" dtqcf gp" qwt" ewurqo gt" dcug" pcvkqpcm(" cpf " kpvgtpcvkqpcm("cpf "vq"o kki cvg" vj g"tkumi"cuuqekcvgf "y kyj "qr gtcvkpi "gzenwukxgn("kp"ur gekhke"ctgcu0'D{"xgpwtkpi "kpvq"pgy" i gqi tcr j kgu."y g"cko "vq"pqv'qpn("vcr "kpvq"pgy "o ctngvu"dw'cnuq"vq"uchgi wctf "ci ckpuv'hnvewcvkqpu"tguwnkpi "htqo "dwukpguu" eqpegpvtcvkqp"kp"nko kxgf "l gqi tcr j kecn'ctgcu0'

Vj tqwi j "vj ku"gzr cpukqp"kpkkcvkxg. "y g"ctg"pqv"lwuv"nqnnkpi "vq"i tqy "qwt"dwukpguu"hqqvr tkpv"dwv"cnuq"vq"hqtvkh{ "qwt"tgukrkgpeg" ci ckpuv"r qvgpvkcn'ej cmgpi gu. "gpuwtkpi "vj g"uwuvckpgf "uweeguu"cpf "uvcdkrkv{ "qh"qwt "qr gtcvkqpu0"

Qwt"wpy cxgtkpi "eqo o ko gpv"vq"qr gtcvkqpcn"gzegngpeg"ku"o cpkbguvgf "kp"qwt"eqpvkpwqwu"ghhqtvu"vq"gpj cpeg"eqpvtqnu"cpf "ftkxg"equv"ghhkekgpekgu"y jkng"o ckpvckpkpi "qrvko cn'ugtxkeg's wcnkv{0Vko gn{"eqo rngvkqp"qh'ugtxkegu'ku'pqv'lwuv'c"dgpej o ctmlhqt" qwt"tgr wcvkqp"dw'cnnq"c"etwekcn'hcevqt"hqt"y g"qpi qkpi "gzr cpukqp"qh'qwt"dwukpguu0'

Vq'hqtvkh('qwt'qr gtcvkqpcnleqpvtqnu.'y g''ctg'f gf kecvgf ''q'ko r ngo gpvkpi 'o gcuwtgu''ij cv'eqpvtkdwg''q'kpetgo gpvcnlko r tqxgo gpvu'' kp"ghhkekgpe{0'Vj ku''kpenwf gu''uvtcvgi ke''kpkkkcvkxgu''uwej "cu''f gr nq{kpi "cf f kkqpcn''r tqhguukqpcnu''q''dqnnygt''qwt''ugtxkeg''r tqxkukqp'' ecr cdkrkkkgu0D{''kpxguvkpi 'kp''c'untangf 'y qtmlqteg.''y g''cko ''vq''hwtyi gt''gngxcvg''yj g''ecnkdgt''qh''ugtxkegu'y g''qhhgt''vq''qwt''enkgpvu0''

...



Hwt y gto qtg. "qwt "eqo o ko gpv" 'q "gzegngpeg "gzvgpf u" 'q" y g"cf qr vkqp" qh" 'kpf wwt { "dguv'r tcevkegu" cpf "eqpvkpwqwu" vtckpkpi "hqt" $qwt"go\ r\ m\{ggu0"Vj\ tqwi\ j\ "qpi\ qkpi\ "r\ tqhguukqpcn"f\ gxgmqr\ o\ gpv."y\ g"gpuwtg"\ y\ cv"qwt"vgco\ "tgo\ ckpu"cdtgcuv"qh"\ y\ g"ncvguv"\ tgpf\ u"$ cpf "\gej pks wgu."cmqy kpi "wu'\q"eqpuku\gpvn("rtqxkf g"\qr/pqvej "ugtxkegu'\q"qwt"xcnwgf "ewuvqo gtu0"

Kp"guugpeg."qwt"hqewu"qp"gpj cpekpi "qr gtckqpcn'eqpvtqnu"cpf "go dtcekpi "dguv'r tcekegu'ku'r kxqvcn'kp"pqv'qpn("wr j qnf kpi "qwt" ewttgpv'tgr wcvkqp"dw'cnnq"kp"r tqr gmkpi "vj g"uwurckpgf "i tqy vj "cpf "uweeguu'qh'qwt "dwukpguu0"

UY QV'CPCN[UKU'QH'QWT'EQO RCP["

UVTGPI VJ U' Ur gekenk gf 'Ugt xkegu<'

Vjg"eqorcp{"urgekcnk∤gu"kp"vjg"rtg/vtgcvogpv"cpf"rqyfgt" qh'gzr gtvkug'kp'kvu'pkej g0'

Ut cvgi ke'Nqecvkqp<'

Ukwcvgf "uvtcvgi kecm("kp"Mqmcvc."y kij "c"uvtqpi "rtgugpeg"kp gcuvgtp"Kpf kc."vj g"eqo r cp{"j cu"r qukkqpgf "kugrh"cu"c"ng{" r nc{gt'kp''y g'tgi kqp0'

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Dgkpi "cp"KUQ"; 2234237"egt\khkgf "qti cpk cvkqp"tghrgewi'yj g" eqo r cp{)u"eqo o kwo gpv"vq"s wcrkv{ "o cpci go gpv"u{ uvgo u" cpf "cfj gtgpeg" 'q" kpvgtpc kqpcn'uvcpf ctf u0'

Crrtqxgf 'Crrnecvqt<"

Vj g" uvcwu" qh" dgkpi " yj g" hktuv" crrtqxgf " crrnkecvqt" qh" Cnq| qpqdgn" Iqwp." cpf " Cukcp" Rckpw" kp" ctej kgewtcn" eqcvkpi "kp"gcuvgtp" Kpf kc"guvcdrkuj gu"c"uvtqpi "eqo r gvkkxg" cf xcpwi g0'

Fksgtug'Eqcvlpi 'Nkpgu<'

Vjg" eqo rcp{" j cu" kpxguvgf" kp" xctkqwu" eqcvkpi " nkpgu." kpenwf kpi " cwqo cvke" r qy f gt" eqcvkpi ." y qqf " hkpkuj ." cpf " RXF H'eqcvkpi .''uj qy ecukpi ''xgtucvkrkx{ ''kp''ksu''ugtxkegu0'

Y GCMP GUUGU'

Nko kvgf 'I gqi tcrj ke'Rtgugpeg<"

"Yjkng" yjg"eqorcp{"jcu"c"untqpi"rtgugpeg"kp"gcungtp"Kpfkc. eqcvlpi "qh"cnvo lpkvo "gzvtwulqpu."uj qy eculpi "c"j ki j "rgxgri" vj gtg"o ki j v'dg"qrrqtwpkklgu"hqt"gzrcpulqp"kp"qvj gt"tgi kqpu" yj cv'ctg"{ gv'vq'dg"gzr nqtgf 0'

Fgrgpfgpeg'qp'Urgeltle'Uwrrllgtu<"

Tgnkcpeg'qp'ur gekhke'uwr r nkgtu'hqt'tcy "o cvgtkcnu'o c{ 'r qug'c' xwpgtcdkrkx{ "kp" 'y g"uwr r n{ "ej ckp"kh"cp { "f kut wr vkqpu"qeewt0"

QRRQTVWP KVKGU'

Octngv'Gzrcpukqp<"

Gzr nqtkpi "wpvcr r gf "o ctngvu"kp"qvj gt "Kpf kcp"uvcvgu"cpf " kpvgtpcvkqpcn" tgi kqpu" ecp" r tqxkf g" cxgpwgu" hqt" dwukpguu" i tqy yj 0'

F kxgt uklecvkqp'qh'Ugt xkegu<"

Vj g"eqo r cp { "ecp"gzr nqtg"f kxgtukh{ kpi "kxu'ugtxkegu'hxtvj gt." r qvgpvkcm(" gzr cpf kpi " kpvq" tgncvgf " ugi o gpvu" y kvj kp" vj g" eqcvlpi 'lpf wuxt {0'

I tqy kpi 'Kpf wuxt{<"

Vjg" kpetgcukpi "fgocpf" hqt"rqyfgt" eqcvkpi "cpf' ctej kgewtcn'eqcvkpi "r tgugpvu'qr r qtwpkkgu'hqt "ecr wtkpi "c' ncti gt"o ctmgv'uj ctg0'

VJ TGCVU' Kpvgpug'Eqorgvkskqp<"

Eqo r gwpi 'y kj 'dqvj 'qti cpk gf 'cpf 'wpqti cpk gf 'r rc{gtu'kp" yj g" r qy f gt" eqcvkpi " ugevqt" o c{" r qug" ej cmgpi gu." pgeguukcvkpi "eqpvkpwqwu"kppqxcvkqp"cpf "f khhgtgpvkcvkqp0"

Tcy 'O cvgt kcriRt keg'Hrwevwcvkqpu<'"

Vjg"hnvewcvkqp"kp"rtkegu"qh'tcy "ocvgtkcnu."uwej "cu'rqyfgt" cpf 'ej go kecnı. 'ecp'ko r cev'ij g'eqo r cp{)u'equv'unt wewit g'cpf " rtqhkxcdkrkv{0'

Geqpqo ke'F qy pwtp<'

Geqpqo le" wpegt vckpvkgu" cpf " f qy pwxtpu" ecp" ko r cev" yj g" eqpurt werkqp" cpf " o cpwhcewrt kpi " ugerqt u." chhgerkpi " yj g" f go cpf 'hqt'r qy f gt 'eqcvkpi 'ugtxkegu0'

Gpxktqpo gpvcn'Tgi wrcvkqpu≺"

Utkpi gpv" gpxktqpo gpvcn" tgi wrcvkqpu" o c{" pgeguukscvg" kpxguvo gpvu" kp" geq/htkgpfn(" rtcevkegu." ko rcevkpi " qr gtcvkqpcn'equvu0'

UCNGU'CPF'O CTMGVIPI 'UVTCVGTI [<'

Qwt "erkgpvgrg" kpenwf gu "guvggo gf "eqor cpkgu "y kij kp" yj g"kpf wunt {."c" 'yguvcogpv 'vq" qwt 'uweeguu "ftkxgp" d { "gpf wt kpi "t grc vkqpu j kru" $y \; k j \; "ewwqo \; gtu"y \; j \; q"j \; cxg"dggp"m \\ \{cn''q''qwt''eqo \; r \; cp \\ \{"hqt''cp"gz \; vgpf \; gf \; "r \; gtkqf \; 0"Vj \; g"dcemdqpg"qh"y \; ku''uweeguu''ku''qwt''vgco \; ."$



y j qug"gz vgpukxg"gzr gt kgpeg"cpf "uvtqpi "erkgpv"tcrr qt v."hqti gf "vj tqwi j "vj g"vko gn{"cpf "s wcrkx{"f grkxgt{"qh"r tqlgevu."r rc{"c" r kxqvcn'tqrg'kp''guvcdrkuj kpi "cpf "gzr cpf kpi "qwt 'eqo r cp{)u'hqqvr tkpv0'

Kp"qwt"eqo o kxo gpv"vq"ewuvqo gt"tgygpvkqp."qwt"ygco "gpi ci gu"kp"tgi wrct"kpygtcevkqpu."uggmkpi "vq"wpf gtuvcpf "vj g"gxqrxkpi " pggf u"qh"qwt"enkgpvu0"Vj ku"r tqcevkxg"cr r tqcej "gpcdrgu"wu"vq"pqv'qpn("o ggv'dwv'gzeggf "vj gkt"gzr gevcvkqpu"eqpukuvgpvn(0"Qwt" uvtovgi ke"gzr cpukqp"kpvq"f qo guvke"o etnegu. "ej etcevgtk gf "d{ "uki pkhkecpv"ucngu"r qvgpvkon"o kpko enkphtouvtwewtg"equvu. "cpf "vj g" cxchrcdhrlx ("qh"r tqhguulqpcn"gzr gtvlug." j cu"hwt yi gt"lutgpi yi gpgf "qwt"o ctngv"r tgugpeg0'

Hoekikovkpi "vj ku"uweeguu"ku"c"ugcuqpgf "cpf "unkingf "o cpci go gpv"vgco "vj cv"gzegnu"kp"o qvkxcvkpi "uwdqtf kpcvgu"cpf "uvchh"vq" untkag''qy ctf u'kpf kakf wcn'cej kgxgo gpvu'cpf 'qti cpk cvkqpcn'i qcnu0Vj gkt 'cf gr v'o cpci go gpv'unkmu'cpf 'tugco rguu'eqqtf kpcvkqp'' y kj "yj g"vgco "cev'cu"ecvcn(uvu. "eqpukngpvn("kpur ktkpi "yj g"gpvktg"y qtmhqteg"vqy ctf u"vj g"f gxgmqr o gpv'cpf "r tqur gtkx("qh'vj g" qti cpk cvkqp0'

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Tgi knyt gf 'Qhheg'cpf 'Koht cunt wewnt g<'

Qwt"tgi knygtgf "qhhleg"ku'ukwcygf "cv'Cuj wk'Mj cpdgtkc"O cj guj vcrc"NR"421: 5168."Mqmcvc"Xkxgncpcpf cr wt"Vj cmwtr wmwt" O cj guvqnc"Uqwj "46"Rcti cpcu."Y D"922363"RP 0'Gs wkr r gf "y kj "ewwkpi /gf i g"vgej pqnqi {."qwt"qhhkeg"ku"hwtpkuj gf "y kj " eqorwgt"u{uxgou."tggxcpv"uqhvyctg."cpf "cfxcpegf"eqoowpkecxkqp"gswkrogpvbY g"gpuwtg"wpkpvgttwrygf"rqygt"uwrrn{." tqdwwlkpygtpgvleqppgevkxk{. "cpf 'ko r rgo gpvlintkpi gpvligewtk\{ 'o gcuwtgu'\q'hcekrkscyg'\j g'lugco rguu'hwpevkqpkpi 'qh'qwt'dwukpguu' qr gtcvkqpu0'

Tcy 'O cygt keni'Rt qewt go gpv<'

Vj g"guugpvkcn'eqo r qpgpvu"cpf "tcy "o cygtkcm"et wekcn'hqt "qvt "qr gtcvkqpu"kpenwf g"r qy f gt. "ej go kecnu."r tqvgevkqp"vcr gu. "gve0" vckrqtgf "\q"\j g"lir gekhlecvkqpul" tqxkf gf "d{ "qwt 'ewurqo gtu0Rtqewtkpi "\j gug"o cvgtkcni/htqo "\j g"f qo gurke o ctngvku'c o gwlewnqwu" $rtqeguu"qxgtuggp"d\{ "qwt"f\ gf\ kecvgf\ "rtqewtgo\ gpv"vgco\ 0"Vj\ tqwi\ j\ "c"eqo\ rtgj\ gpulxg"gxcnwcvlqp."y\ g"uqnlekv"s\ wqvcvlqpu"ltqo\ "gvp"vgco\ 0"Vj\ tqwi\ j\ "c"eqo\ rtgj\ gpulxg"gxcnwcvlqp."y\ g"uqnlekv"s\ wqvcvlqpu"ltqo\ "gvp"vgco\ 0"Vj\ tqwi\ j\ "c"eqo\ rtgj\ gpulxg"gxcnwcvlqp."y\ g"uqnlekv"s\ wqvcvlqpu"ltqo\ "gvp"vgco\ 0"Vj\ tqwi\ j\ "c"eqo\ rtgj\ gpulxg"gxcnwcvlqp."y\ g"uqnlekv"s\ wqvcvlqpu"ltqo\ "gvp"vgco\ 0"Vj\ tqwi\ j\ "c"eqo\ rtgj\ gpulxg"gxcnwcvlqp."y\ g"uqnlekv"s\ wqvcvlqpu"ltqo\ "gvp"vgco\ 0"Vj\ tqwi\ j\ "c"eqo\ rtgj\ gpulxg"gxcnwcvlqp."y\ g"uqnlekv"s\ wqvcvlqpu"ltqo\ "gvp"vgco\ 0"Vj\ tqwi\ j\ "c"eqo\ rtgj\ gpulxg"gxcnwcvlqp."y\ g"uqnlekv"s\ wqvcvlqpu"ltqo\ "gvp"vgco\ 0"Vj\ tqwi\ j\ "c"eqo\ rtgj\ gpulxg"gxcnwcvlqp."y\ g"uqnlekv"s\ wqvcvlqpu"ltqo\ "gvp"vgco\ 0"Vj\ tqwi\ j\ "c"eqo\ rtgj\ gpulxg"gxcnwcvlqp."y\ g"uqnlekv"s\ wqvcvlqpu"ltqo\ "gvp"vgco\ 0"Vj\ tqwi\ j\ "c"eqo\ rtgj\ gpulxg"gxcnwcvlqp."y\ g"uqnlekv"s\ wqvcvlqpu"ltqo\ "gvp"vgco\ 0"Vj\ tqwi\ j\ "c"eqo\ rtgj\ gpulxg"gxcnwcvlqp."y\ g"uqnlekv"s\ wqvcvlqpu"ltqo\ "gvp"vgco\ 0"Vj\ tqwi\ j\ "c"eqo\ rtgj\ gpulxg"gxcnwcvlqp."y\ g"uqnlekv"s\ wqvcvlqpu"ltqo\ "gvp"vgco\ 0"Vj\ tqwi\ j\ "c"eqo\ rtgj\ gpulxg"gycnwcvlqpu"ltqo\ "gvp"vgco\ 0"Vj\ tqwi\ j\ "gvp"vgco\ 0"Vj\ tqwi\ p"Vj\ tqwi\ p"Vj$ xctkqwu'uwr r nkgtu. "gpi ci kpi "kp"pgi qwcwkqpu"vq"ugrgev"vj g"o quv"uwkscdrg"qpgu0Qwt "eqo o ko gpv"vq"s wcnkx{ "gzvgpf u"vq"tqwkpg" ej gemu'wr qp"o cygtkenitgegkr v'cv'qwt 'heektk{ ."gpuwtkpi "vj cv'yj g"r tqewtgf "o cygtkeni'o ggv'qwt 'untkpi gpv's werks{ ''uncpf etf u0'

Rqy gt 'Uwrrn(<'

C v'qwt 't gi kungt gf 'qhhleg. 'y g'j cxg 'gurcdrkuj gf 'cttcpi go gpwl'hqt 'c 'eqpukungpv'cpf 't grlcdrg'r qy gt 'lwr r n(0Vj ku'r qy gt 'ku'uqwtegf " htqo "EGUE"Nko kgf. "tgkphqtekpi "qwt"eqo o ko gpv"\q"qr gtc\kqpcn"ghhekgpe{"cpf "wpkpygttwr vgf "y qtmhrqy 0"

Y cvgt 'Tguqwt egu<'

Cf gs wcvg"y cvgt"uqwtegu"ctg"cxckrcdrg"vq"o ggv'j wo cp"eqpuwo r vkqp"tgs wktgo gpvu"cv'qwt"qhheg0'Qwt"gzkurkpi "r tgo kugu"ctg" y gm/gs wkr r gf "\q"hwhkti\j gug'pggf u. "gpuwt kpi "\j cv'qwt "\gco "qr gt cvgu'kp"c"eqo hqt vcdng"cpf "eqpf wekxg"gpxkt qpo gpv0"

Vtgcvo gpv'qh'Rqmwkqp<'

Kp"vgto u"qh"gpxktqpo gpvcn"tgur qpuktlktkv{."vj g"eqorcp{"j cxg"crrrkgf"hqt"xcnkf"eqpugpv"vpf gt"Ugevkqp"47"cpf"48"qh"vj g"Y cvgt" *Rtgxgpvkqp'('Eqpvtqri'qh'Rqmwkqp+'Cev.'3; 96.'cpf 'wpf gt'lugevkqp'43''yi g'Ckt'*Rtgxgpvkqp'('Eqpvtqri'qh'Rqmwkqp+'Cev.'3; : 30' Vj ku'cwy qtkl cwkqp 'cmqy u'vj g'eqo r cp{ 'vq'qr gtcvg'kp'ceeqtf cpeg'y kyj 'lwtkpi gpv'r qmwkqp'eqpvtqn'tgi wcwkqpu. 'luj qy ecukpi 'kwu' eqo o ko gpv'\q"gpxktqpo gpvcm("uwuvckpcdrg'r tcevkegu0'

ECRCEN/['CPF'ECRCEN/['WWNK CVKQP''

Ecrcels ('While cylap''

Ecrcels ('Wkik cykpp'Ecrewrykpp'lt qo '3us/Pqxgo dgt '4243'6'53us/Octej '4244''					
Rt qf wev'Hco kt(''	Cwwqo cwle'Eqcwlpi 'Rncpv''	O cpwcdEqcvlpi 'Rrcpv''			
Kouvengf 'Eer cek√{ '*O V+'	852"	492"			
Rtqf wevkqp'*O V+"	522"	325"			
Ecrcels{ 'Wildk cylqp''	69084' ''	5: 087' ''			

Ecrcels{ 'Whalk cykqp'Ecrewrcykqp'lt qo '3uv'Crtki4244'b'53uv'Octej '4245''					
Rt qf wev'Hco kt(''	Cwyqo cyle'Eqcylpi 'Rrcpy''	O cpwcrlEqcvlpi 'Rrcpv''			
Kpuvcmgf 'Ecr cekv{ '*O V+''	3734"	86: "			
Rtqf wedqp'*O V+"	; 2: "	544"			



Ecrcels{ 'Wkkk cykqp''	82027' ''	6; 68; ' ''

Ecrcels{ 'Whitk cshap'Ecrewicshap'lit qo '3us'Crt kil4245'6'52'i 'Ugrvgo dgt '4245''					
Rt qf wev'Hco kt("	Cwwqo cwle'Eqcwlpi 'Rucpv''	O cpwcrlEqcvlpi 'Rrcpv''			
Kpuvcmgf 'Ecr cekv{ '*O V+'	: 62'''	582"			
Rtqf wedqp'*O V+"	847"	442"			
Ecrcels{ 'Work cylqp''	96062' ''	83033' ''			

J WO CP 'TGUQWTEG"

Qwt "hkto "eqpxkevkqp" rkgu "kp" vj g"cempqy rgf i o gpv' vj cv'qwt "go r rq { ggu "ct g" r kxqvcn'eqpvt kdwqt u 'vq "qwt "dwukpguu 'uweeguu0'V j g" $uwuvgpcpeg"qh"qwt"i\ tqy\ yj\ "vtclgevqt{ "ku"kpvtkecvgn{ "rkpmgf" 'vq"qwt"cdkrkv{ "vq"cwtcev."vtckp."o\ qvkxcvg."cpf" 'tgvckp"c"j\ ki\ j\ /ecrkdgt" }}$ $y\ qtm qteg 0 Y\ g"ctg"wpy\ cxgtkpi\ "kp"qwt"eqo\ o\ ko\ gpv'vq"pqv'lww'ces\ wktkpi\ "vcrgpv'dw'pwtwtkpi\ "cp"gpxktqpo\ gpv'vj\ cv'lquvgtu"$ eqp\pwqwu'f gxgmr o gpv'cpf '\u00fcwuckpgf 'o q\u00edxc\u00ddqp0'

Qwt"go rj cuku"ku"r megf "qp"cwtcevkpi "cpf "tgvckpkpi "vj g"hlpguv"vcngpv"cxckmdng"kp"vj g"o etngv0'Y g"cevkxgn("uggmikpf kxkf wcnı" y ky "ur gekhe 'umkm'ugvu. 'kpvgtguvu. 'cpf 'dcemi tqwpf u'vj cv'crki p'ugco rguum('y ky ''y g'wpks wg'tgs wktgo gpvu'qh'qwt 'dwukpguu0'

tqrgu'cu'hqrqy u<"

Ut 0P q0'	F guli pevlqp''	Pwo dgt 'qhirgt uqpu'go rm{ gf ''
30 "	Gormq{ggu"	6"
40 "	Unkngf "Ncdqwtu"	:"
50 "	Wpunkngf "Ncdqwtu"	5"
	Vqven'	37"

Vj ku"eqo r qukkqp"tghgevu"c"f grkdgtcvg"dcmpeg"dgwy ggp"gzr gtkgpegf "r tqhguukqpcnu"cpf "f {pco ke"{qwj. "qhhgtkpi "wu"c"f wcn" $cf\ xcpvci\ g"qh"uvcdktk{"cpf"i\ tqy\ yi\ 0"Vj\ g"u{pgti\ \{"qh"qwt"uvtgco\ rkpgf"y\ qtm"r\ tqeguugu."umkngf"tguqwtegu."cpf"c"tqdwuv"uvtgco\ rkpgf"y\ qtm"r\ rkpgf"tguqwtegu."cpf"c"tqdwuv"uvtgco\ rkpgf"tguqwtegu."cpf"c"tqdwuv"uvtgco\ rkpgf"tguqwtegu."cpf"c"tqdwuv"uvtgco\ rkpgf"tguqwtegu."cpf"c"tqdwuv"uvtgco\ rkpgf"tguqwtegu."cpf"tguqwtegu.$ o cpci go gpv"vgco "j cu"dggp"kpurtwo gpvcn"kp" yi g"uweeguuhmri gz gewkqp"qh"qwt "i tqy yi "r ncpu0'Ki'ku"qwt "hkto "dgrkgh" yi cv' yi g" eqmcdqtcvkqp"dgwy ggp"ugcuqpgf "gzr gtvkug"cpf "{qwij hwrl'gpgti {"y kml'eqpvkpwg"vq"f tkxg"qwt"cej kgxgo gpwi'kp"vj g'hwwtg0'

EQORGVKVKQP"

Eqo r gykklqp"y kj kp"yj g"Rqy f gt"Eqcykpi "ugevqt"ku"eqpykpi gpy'wr qp"xctkqwu"hcevqtu."kpenwf kpi "i gqi tcr j ke"nqecykqp."r tqlgev' pcwtg."cpf "uk| g016/16f kc."vj ku'ugevqt'ku'r tgf qo kpcpvt "wpqti cpk| gf."hquvgtkpi "c"eqo r gvkkxg"gpxktqpo gpv'y j gtg'r rc{gtu'xkg" hqt"dwkrf kpi "uvtqpi "ewurqo gt"tgrcvkqpuj kr u"cpf "f grkxgt kpi "s wcrkx{"ugtxkegu0'C"pqvgy qt yi {"cur gev'ku"yj cv'o qtg"yj cp": 7' "qh" $\label{thm:condition} \text{qwt''ewnqo gtu''ctg''tgewttgpv.''c''vguvco gpv'vq''qwt''eqpuknygpv'ugtxkeg''s wcrkw{.''vko gn{'f grkxgtkgu.''cpf''eqo r gvkxkxg''r tkekpi 0''} }$

Y g"hto n("dgrkgxg"vj cv'qwt"ghtgevkxg"eqo r gvkklqp"j kpi gu"qp"vj g"cuuwtcpeg"qh"eqpukuvgpv'ugtxkeg"s wcrkv(."vko gn("f grkxgtkgu." $cpf "eqo \ r \ gvkkg" r \ tkekpi ." y \ j \ kej "eqmgevkgn ("dqnuygt" qwt" dtcpf "tgr wcvkqp" qxgt" vko \ g0' Vj \ g''uvtcvgi \ ke'' eqo \ dkpcvkqp" qh'' equv/l$ ghłge kxg"cpf "kpvgi tcvgf "qhłgt kpi u. "c"uvgcf hcuv'eqo o kxo gpv'vq"ewuvqo gt "ucvkuhce vkqp. "cpf "wpy cxgt kpi "tgrkcd krkx{. "eqwr ngf" y kj "qwt"s wcrkx{/eqpuekqwu"crrtqcej."r qukkqpu"wu"cf xcpvci gqwun("kp"\j g"o ctmgv0"

Qwt "eqphhf gpeg" hp "o ckpvckplipi" c"eqo r gwkkxg" gf i g'ku't qqygf 'kp" qwt "ygej plecn'ecr cdkrkkgu. "gzygpukxg' kpf wurt { "gzr gt kgpeg." cpf" c'tqdww's wcrkx{ "cuuwtcpeg'htco gy qtm0Y g'ctg'r qkugf "\q'pcxki cvg'eqo r gvkkqp. 'dqy 'htqo 'qti cpk gf 'cpf 'wpqti cpk gf 'r rc{gtu." d{"hgxgtci kpi "qwt"wpks wg"hvtgpi yj u"kp"\j g"tgcm "qhl'ugtxkeg"gzegngpeg"cpf "ewuvqo gt/egpvtke"r tcevkegu0"

EQNNCDQTCVKQPU'

Vj gtg"ctg"pq"Eqmcdqtcvkqpu"qt"Lqkpv"Xgpwxtgu"cu"qp"fcvg"qh"hkrkpi" 'vjku"Ftchv"Rtqurgewxx0"

KO RQTVU/GZRQTVU/CPF'KO RQTV/GZRQTV'QDNN CVKQPU''

Vj gtg"ctg"pq"Korqtv"Gzrqtv"Qdrkicvkqp"cu"qp"fcvg"qh"hkrkpi"vjku"Ftchv"Rtqurgewww0"



QWT'RTQRGTVKGU"

Rt qr gt vlgu'vengp 'qp'igeug'd{ 'qwt 'eqo r cp{0'

UtO'	Nqecvlqp''	Pco g'qh'	F qewo gpv''	Tgpv'*Kp''	Rgt k	րք 'գել'	Waci g''
Pq"		Ngunqt 1Nlegpuqt '	cpf 'Fcvg''	Tu+''	Ci tgg	go gpv''	
					Ht qo''	Vq''	
30"'	Cuj wk'Mj cpdgtkc"O cj guj vcrc"	O t0'Lci lk/'Ukpi j "	Ngcxg"cpf"	62.222"	Crtkn'	Octej "	Tgikungtgf"
	NR" 421: 5168." Magmewc."	Fjkmqp"	Nlegpug"	"	23."	53."	Qhhleg"
	Xkxgmcpcpf cr wt." Uqwj " 46"		Ci tggo gpv'		4245"	4255"	
	Reti epeu." Vj emstr wmst"		f cvgf 'Crtkn'23."				
	O cj guvqnc." Y guv" Dgpi cn"		4245"				
	Kpf kc.'922363'*Wpk/K+"						
4"	"I cpkr wt" O cj guj vcnc." 46"	O t0'Lci lk/'Ukpi j "	Ngcxg"cpf"	62.222"	Qevqdgt"	Octej "	Rrcpv'
	Reti epeu." Mqmeve" 965574."	Fjkmqp"	Nægpug"		23."	53."	
	Y guv'Dgpi cn'Kpf kc''*Wpkv'KK+''		Ci tggo gpv'		4245"	4255"	
			f cvgf "Qevqdgt"				
			23."4245"				
50'	I cpkr wt" O cj guj vcnc." 46"	O t0'Lci lk/'Ukpi j "	Ngcxg"cpf"	62.222"	Qevqdgt"	Octej "	Rrcpv'
	Reti epeu."DOT"*Y +"Mqmeve"ó"	Fjkmqp"	Nægpug"		23."	53."	
	922363'**Wpk; 'KK\ "		Ci tggo gpv'		4245"	4255"	
			f cvgf "Qevqdgt"				
			23."4245"				

IP UWI CPEG'RQNIE IGU'

 $Qwt"Eqo\ r\ cp\{"o\ ckpvckpu"kpuwtcpeg"ci\ ckpuv'xctkqwu"tkumu"kpj\ gtgpv''kp"qwt"dwukpguu"cevkxkkgu0'Y\ j\ krg"y\ g"dgrkgxg"vj\ cv''vj\ g"$ $kpuwtcpeg"eqxgtci~g"y~j~kej~"y~g"o~ckpvckp"ku"kp"mggr~kpi~"y~ksj~"kpf~wwt~\{~"uvcpf~ctf~u"cpf~"y~qwrf~"dg"tgcuqpcdn(~"cf~gs~wcvg"vq"eqxgt"~uvcpf~ctf~u"cpf~"y~qwrf~"dg"tgcuqpcdn(~"cf~gs~wcvg"vq"eqxgt"~uvcpf~ctf~u"cpf~"y~qwrf~"dg"tgcuqpcdn(~"cf~gs~wcvg"vq"eqxgt"~uvcpf~ctf~u"cpf~"y~qwrf~"dg"tgcuqpcdn(~"cf~gs~wcvg"vq"eqxgt"~uvcpf~ctf~u"cpf~"y~qwrf~"dg"tgcuqpcdn(~"cf~gs~wcvg"vq"eqxgt"~uvcpf~ctf~u"cpf~"y~qwrf~"dg"tgcuqpcdn(~"cf~gs~wcvg"vq"eqxgt"~uvcpf~ctf~u"cpf~"y~qwrf~"dg"tgcuqpcdn(~"cf~gs~wcvg"vq"eqxgt"~uvcpf~ctf~u"cpf~"y~qwrf~"dg"tgcuqpcdn(~"cf~gs~wcvg"vq"eqxgt"~uvcpf~ctf~u"cpf~"y~qwrf~"dg"tgcuqpcdn(~"cf~gs~wcvg"vq"eqxgt"~uvcpf~ctf~u"cpf~"y~qwrf~"dg"tgcuqpcdn(~"cf~gs~wcvg"vq"eqxgt"~uvcpf~ctf~u"cpf~"y~qwrf~"dg"tgcuqpcdn(~"cf~gs~wcvg"vq"eqxgt"~uvcpf~ctf~u"cpf~"y~qwrf~"dg"tgcuqpcdn(~"cf~gs~wcvg"vq"eqxgt"~uvcpf~ctf~u"cpf~"y~qwrf~"dg"tgcuqpcdn(~"cf~gs~wcvg"vq"eqxgt"~uvcpf~ctf~u"cpf~"y~qwrf~"dg"tgcuqpcdn(~"cf~gs~wcvg"vq"eqxgt"~uvcpf~ctf~u"cpf~"y~qwrf~"dg"tgcuqpcdn(~"cf~gs~wcvg"vq"eqxgt"~uvcpf~uvcpf~"y~qwrf~~y~qwrf~~y~qwrf~~y~qwrf$ y g"pqto cn'tkımı'cunqekcygf 'y kij 'y g"qr gtcykqp"qh'qwt 'dwukpguugu. 'y g"ecppqv'cunwtg"{qw'yi cv'cp{"encko "wpf gt''y g"kpuwtcpeg" r qrkekgu"o ckpvckpgf "d{"wu'y kmi'dg"j qpqwtgf "hwm{."kp"r ctv'qt "qp"\ko g."qt "y cv'y g"j cxg"\cngp"qw\uwhhkekgpv'kpuwtcpeg"\q"eqxgt" cm'qwt 'nquugu0'Vj g'hqmqy kpi ''ctg''y g'f gwkui'qh'\'y g'kpuwtcpeg'r qrkekgu''qdvckpgf ''d{ ''qwt 'Eqo r cp{<'

UtO'	Pco g'qh'yj g''	V{rg'qh'Rqnle{''	Rqrle{ 'P q0'	Xchf kv{ ''	Uwo "
P q0'	Kpuwt cpeg'Rqrle{ ''			Rgt kqf ''	Kpuwtgf''
	Eqo rcp{"				
30 ''	J FHE" Gti q" I gpgtcn"	JFHE" I gpgtcn' Gtiq"	4; 6; 4278: 8393722222"	2602; 04246"	: .4; .72.222"
	Kpuwtcpeg" Eqorcp{"	Dwukpguu'Ugewtg''ó''Uqqmuj o c''			
	Nko kvgf''	Wf {co 'Rqnke{''			

IP VGNNGE VWCN'RT QRGT V["

Ut0' Pq0'	Rct wewet u'qh'vj g'o ct m'	Crrdecylqp'' Pq0'	Eœui'	Tgi kwtcvkqp1Crrdecvkqp'' f cvg''	Uvevwul'Xenlf ls{ ''
3"	Associated Coaters	Q/ 22256; : 57; "	63"	F gego dgt"4: ."4245"	Rgpf kpi "
40'	Vjg" yqtfoctm" õ Cunqekvgf'' Eqcvgt vö''	Q/ 22256; : 57; "	63"	F gego dgt "4: ."4245"	Rgpf kpi "

TGXGPWG'HIQO 'QWI'VQR'32'EWUVQO GTU'

* 'kp'hc nj u+''

UtO'	Rct vlewrct u''	Rgt lqf 'gpf gf 'Ugr vgo dgt '52.''	O ctej '53.''	Octej '53.'4244''	O ctej '53.'4243''
Pq0'		4245''	4245''		
30'	Vqr '7"ewuqo gtu'"	427039"	4::072"	358094"	2"
40'	Vqr '32'ewuvqo gtu'"	453093"	576079"	37: 0 7"	2"



HIP CPEICN'IP F GDVGF P GUUQH'VJ G'EQO RCP ["

 $Cu''qp''y' g''f cvg''qh''y' ku''F tchv''Rtqur gewu.''qwt''Eqor cp{''y' cu''cxckrgf''wpugewtgf''rqcpu0'Hqt''hwtyi gt''f gvcknu.''r rgcug''tghgt''vq''y' g'' ugevkqp''ŏ<math>U$ /cvgo gpv'qh'H/bpcpekcn/H/fgdvpguw \ddot{o} ''dgi kppkpi ''qp''r ci g''3: 7''qh''y' ku''F tchv''Rtqur gewu0''

•

" "



MG['KPFWUVT["TGI WNCVKQPU'CPF'RQNKEKGU"

Vj g"lqnqy kpi "f guet krkqp"ku"cp"qxgtxkgy "qh'egt vckp"ugevqt/ur gelike"t gngxcpv'ncy u"cpf "t gi wrckqpu'lp"Kpf kc"y j kej "ct g" crrnecdng'\q'\j g"qrgt ckqpu'qh'qwt "Eqo rcp{"cpf "ku'dwukpguuOVj g'f guet krkqp"qh'ncy u"cpf 't gi wrckqpu'ugv'qwv'dgnqy "ku'pqv' gzj cwukxg"cpf "ku"qpnf "kpvgpf gf "vq"rt qxlf g"i gpgt cn'kplqt o ckqp"vq"Dkf gt uO'Vj g"kphqt o ckqp"kp"y ku"ugevkqp"ku"pgkoj gt "f guki pgf "pqt "kpvgpf gf "vq"dg"c"uwdukwwg"hqt "rt qhguukqpcn'ngi cn'cf xkeg"cpf "kpxguaqtu''ct g"cf xkugf "vq"uggm'hpf gr gpf gpv' rt qhguukqpcn'ngi cn'cf xkegO'

Vj g'hanay kpi 'ku'cp'axstxky 'qh'uqo g'qh'y g'ko ratxepv'ncy u 'rankekgu'cpf't gi wrckapu''y j kej ''ct g'rgt kpgpv'a''qwt ''dwukpguu'qh' o cpwhrewn kpi "cpf "ugnkpi "qh'y cvgt "dcug" rckpwi'nkng" y cni'rrwugtu "vgzwn gu "y cni'ect g. "f kugo r gtu "ego gpv'rt ko gtu'cpf "go wnukapu''\pvgt kqt ''cpf 'gzvgt kqt +'y qaf 'rt ko gtu 't gf 'qzkf gu'gve0'hqt 't gulf gpvkcn'cpf 'eqo o gt ekcn'dwh f kpi u0Vczcvkqp'hacwwgu" uwej 'cu'yj g'Kv0Cev.'I UV'cpf 'crrnkecdng'Ncdqwt 'ncy u "eqpvt cewcn'ncy u "cpf 'kpvgngewcn'rt qr gtv|'ncy u'cu'yj g'ecug'o c{ "dg." crrn "vq'wu'cu'yj g{ "f q''vq'cp{ "qvj gt "Kpf kcp"eqo rcp{0Vj g''ucvgo gpvu'dgnay "ct g''dcugf "qp''yj g''ewtt gpv'rt qxkukapu'qh'Kpf kcp" ncy .'cpf ''y g'lvf kekcn'cpf ''cf o kpknt cvkxg'kpvgtrt gvcvkapu'yj gt gaph'y j kej ''ct g''uwllgev'vq'ej cpi g''qt ''o af khkecvkap''d{ 'uwdugs wgpv' ngi kurcvkxg."tgi wrcvkxg."tgi wrcvkxg''qt''lvf kekcn'f gekukapu0Vj g''t gi wrcvkapu'ugv'qwv'dgnay ''o c{ ''pqv'dg''gzj cwukxg''cpf ''ctg'' qpn' ''kpvgpf gf ''vq''rt qxkf g''i gpgt cn'kphqt o cvkqp''vq''Kpxguaqtu''cpf ''ku''pgkyj gt ''f guki pgf "pqt ''kpvgpf gf ''vq''dg''c ''uwduakwwg''hqt'' rtqhguukapcn'ngi cn'cf xkeg0''

CRRNIECDNG'NCY U'CPF'TGI WNCVIQPU''

$\textbf{DWUKP}\,\textbf{GUU'I'VTCF}\,\textbf{G'TGNCVGF'NCY}\,\,\textbf{U'I'TGI}\,\,\textbf{WNCVKQPU''}$

Vj g'Rwdrle'Nlcdlrls{ 'Kouwt cpeg'Cev.'3; ; 3'*\diraction RNKCev\diraction+'cpf '\diraction g'Rwdrle'Nlcdlrls{ 'Kouwt cpeg'T wgu.'3; ; 3'"

 $\label{thm:condition} Vj\ g'RNKCev'ko\ r\ qugu'ikcdktk{"qp"ij\ g"qy\ pgt"qt"eqpvtqmgt"qh'j\ c|\ ctf\ qwu'uwduvcpegu'hqt"cp{"f\ co\ ci\ g"ctkukpi\ "qw'qh'cp"ceekf\ gpv'\ kpxqnxkpi\ "uwej\ "j\ c|\ ctf\ qwu'uwduvcpegu'eqxgtgf\ "d{"ij\ g"ngi\ kurcvkqp"j\ cu'dggp"gpwo\ gtcvgf\ "d{"ij\ g"}i\ qxgtpo\ gpv'd{"y\ c{"qh'c"pqvkhecvkqp0Wpf\ gt"ij\ g"ncy\ ."ij\ g"qy\ pgt"qt"j\ cpf\ rgt"ku"cnuq"tgs\ wktgf\ "q"vcng"qw'cp"kpuwtcpeg"r\ qrke{"kpuwtkpi\ "ci\ ckpuv'hcdktkv{0Vj\ g'twgu'o\ cf\ g'vpf\ gt'ij\ g'RNKCev'o\ cpf\ cvg'ij\ g"go\ r\ nq{gt"q"eqpvtkdwg"\qy\ ctf\ u'ij\ g'Gpxktqpo\ gpvcn'\ T\ grkgh'Hwpf\ "c'uwo\ "gs\ wcn'\q''ij\ g"r\ tgo\ kwo\ "r\ ckf\ "qp"ij\ g'kpuwtcpeg"r\ qrkekgu0'$

Vj g'O let q.'Uo cmlcpf 'O gf lavo 'Gpvgt r t lugu'F gxgmqr o gpv'Cev.'4228'*vj g'δCevö+'"

O UO G'Cev'y cu''gpcevgf "vq"r tqxkf g"hqt "hcekkcvkpi "vj g"r tqo qvkqp"cpf "f gxgqqr o gpv'cpf "gpj cpekpi "vj g"eqo r gvkxkxxygguu''qh' o ketq.'uo cm'cpf 'o gf kwo "gpvgtr tkugu''OCp{ 'r gtuqp''y j q'lpvgpf u'vq "guvcdrkuj "vc+"c'o ketq''qt 'uo cm'gpvgtr tkug.'cv'ku''f kuetgvkqp=" *d+"c" o gf kwo "gpvgtr tkug"gpi ci gf "lp"r tqxkf kpi "qt"tgpf gtkpi "qh'ugtxkegu''o c{."cv'ku''f kuetgvkqp=" qt""*e+"c" o gf kwo "gpvgtr tkug" gpi ci gf "lp"r tqxkf kpi "qt"tgpf gtkpi "qh'ugtxkegu''o c{."cv'ku''f kuetgvkqp=" qt""*e+"c" o gf kwo "gpvgtr tkug" gpi ci gf "lp"o cpwhcewtg"qt"r tqf wevkqp"qh'i qqf u'r gtvckpkpi "vq"cp{ "lpf wnt { "ur gekhlef "lp"y g"Hktuv'Uej gf wg"vq"y g"Kpf wnt kgu" "f gxgqqr o gpv'cpf "Tgi wncvkqp+"Cev."3; 73"ku'tgs wktgf "vq"hkg"c"o go qtcpf wo "dghqtg"uwej "cwj qtkk{ "cu'ur gekhlef "d{ "vj g"Uvcyg" I qxgtpo gpv''qt" yi g"Egpvtcn'I qxgtpo gpv''Oy g"hqto "qh"vj g"o go qtcpf wo ."vj g"r tqegf wtg"qh"ku"hkhpi "cpf" qyj gt"o cwgtu" kpekf gpvcn'y gtgqq"uj cm'dg"uwej "cu"o c{"dg"ur gekhlef "d{"vj g"Egpvtcn'I qxgtpo gpv"dcugf "qp"vj g"tgeqo o gpf cvkqpu"qh''y g" cf xkuqt { "eqo o kwgg0Ceeqtf kpi n{. !kp'gzgtekug'qh'yj ku'r qy gt"vpf gt'y g'O UO G'Cev."yj g'O kpkut { "qh'O ketq."Uo cm'cpf 'O gf kwo "Gpvgtr tkugu''pqvkthecvkqp"f cvgf "Ugr yo dgt"3: ."4237"ur gekhlef "yi cv'gxgt { "o ketq."uo cm'cpf "o gf kwo "gpvgtr tkugu''ku''tgs wktgf "vq" lkug'c"Wf {qi 'Cf j cct'O go qtcpf wo "kp'yj g"hqto "cpf "o cppgt 'ur gekhlef "lp''y g"pqvkthecvkqp0'

NCY U'T GNCVIP I 'VQ'URGE IHIKE'UVCVG'Y J GT G'GUVCDNIKUJ O GP V'KU'UKVWCVGF'''

Uj qr u'cpf 'guvcdrkuj o gpvu'ncy u'lp'xct kqwu'uvcvgu'''

Cu'r gt"y g"r tqxkıkqpu"qh"nqecn'Uj qr u'cpf "Guvcdrkıj o gpwi'rcy u'cr r rkecdrg"kp"y g"uvcyg"qh"Y guv'Dgpi cn'guvcdrkıj o gpwi'ctg" tgs wktgf "\q"dg"tgi kuvgtgf 0'Uwej "rcy u'tgi wcvg"y g"y qtm\pi "cpf "go r m{o gpv'eqpf kkqpu"qh"y g"y qtm\pi "gy qtm\pi qr u" cpf "guvcdrkıj o gpwi'kpenwf \pi i 'eqo o gtekcn'guvcdrkıj o gpwi'cpf 'r tqxkf g"hqt 'hkzcvkqp"qh"y qtm\pi 'j qwtu. 'tguv'\pvgtxcnu. 'qxgtvko g." j qrkf c{u. "rgcxg." vgto \pvcvkqp"qh"ugtxkeg. "o c\pvgpcpeg"qh"uj qr u"cpf "guvcdrkıj o gpwi'cpf "qvj gt"tki j wi'cpf "qdrki cvkqpu"qh"y g" go r m{guvcdrkıj o grwi'cpf "go r mq ggu0"

Uvco r'Cev'kp'xct kqwu'iwcvgu'''

Vj g'r wtr qug''qh'Uco r ''Cev'y cu''q'int gco rhog''cpf ''ulo r rhh{ ''tcpucevkqpu''qh'ho o qxcdrg''r tqr gtvkgu''cpf ''ugewtkkgu''d{ ''y g''Ucvg'' I qxgtpo gpv0'Vj g''Uco r ''Cev''r tqxkf gu''hqt''y g''ko r qukkqp''qh''uco r ''f w{ ''cv''y g''ur gekhkgf ''tcvgu''qp''kpurtwo gpvu''htrog f''hp'' Uej gf wrg''hC''qh''y g''Uco r ''Cev0'Uco r ''f w{ ''ku'r c{cdrg''qp''cm''kpurtwo gpvu''l'f qewo gpvu''gxkf gpekpi ''c''tcpuhgt''qt''etgcvkqp''qt'' gzvkpi wkuj o gpv'qh''cp{ ''tki j v.''kkrg''qt''kpvgtguv''kp''ko o qxgcdrg''r tqr gtv{0J qy gxgt.''wpf gt''y g''Eqpuvkwkqp''qh'''kpvgtguv''kp''ko o qxgcdrg''r tqr gtv{0J qy gxgt.''wpf gt''y g''Eqpuvkwkqp''qh'''kpvgtguv''y g''uccygu'' ctg''cnq''go r qy gtgf ''q''r tguetkdg''qt''cngt''y g''uco r ''f w{ ''cc{cdrg''qp''uwej ''f qewo gpvu''gzgewgf'y ky ky kp''y g''ucvgu'' vj g''Uccyg'I qxgtpo gpv'qh''Y guv'Dgpi cn'ku'go r qy gtgf ''q''r tguetkdg''qt''cngt''y g''uco r ''f w{ ''cu'r gt''y gkt''pggf 0'''

...



Rt qhgunlqpu 'Vt cf g. 'Ecmlpi u'cpf 'Go rm{ o gpw'Cev'lp'xct kqwu'iwcvgu'"

 $Vj\ g"r\ tqhguukqpcn" vz"urcdu" hp" kp"\ kc"ctg" cr\ r\ recdng" vq"\ j\ qug"\ ekk \ gpu"\ qh" kp"\ kc"y\ j\ q"ctg"gk j\ gt" kpxqnxgf" kp"cp {"r\ tqhguukqp"qt" vcf\ g0'V j\ g" Vw\ vg' I\ qxgt\ po\ gpv'\ qh'Y\ guv'Dgpi\ c'nku' go\ r\ qy\ gtgf" y\ kj" yj\ g" tgur\ qpukdkk k{ "qh'uv\ www kpi" "cu"y\ gm'cu" hqto\ wcv\ kpi" yj\ g" tgur\ gevkxg" r\ tqhguukqpcn'vcz' etk\ gtk'cpf' ku'cnq'tgs\ wktgf" vq'eqngev' hwpf\ u''yj\ tqwi\ j'\ r\ tqhguukqpcn'vcz' 0'V j\ g"'r\ tqhguukqpcn'vcz\ gu"\ ctg" ej\ cti\ gf'\ up'yj\ g'\ kpeqo\ g''qh' kpf\ kkk'\ wcnu. 'r\ tqhku' qh'dwukpguu''qt''\ ckpu''qh''xqeckqpu0'V j\ g''cz''r\ c{cdng''wpf\ gr''yj\ g"\ Ucv\ g''Cew'' d{ "cp{"r\ gtuqp"gctpkpi\ "c''ucvt{"qt"y\ ci\ g''uj\ cm't{gf''wej'}' gr''wej\ "r\ gtuqpu''\ dghtg''uwej\ "r\ gtuqpu''\ dghtg''uwej\ "r\ gtuqpu''\ dghtg''\ yj\ gy'\ g''\ ucvt{"vy\ ci\ g''u'r\ ckf''\ vq''\ y\ ci\ g''\ urcvt{"vy\ ci\ g''u'r\ cf''\ vc'\ g''\ y\ ci\ g''\ urcvt{"vy\ ci\ urcvt{"vy\ ci\$

GPXKTQPO GPV'TGNCVGF'NCY U''

Gpxkt qpo gpv'Rt qvgevkqp'Cev.'3;:8'cpf 'Gpxkt qpo gpv'*Rt qvgevkqp+'T wgu.'3;:8'"

 $Vj g"Gpxktqpo gpvcn"Rtqvgevkqp"Cev."3;: 8"ku"cp"$wo dtgmc$''ngi kurcvkqp"f guki pgf "vq"r tqxkf g"c"htco gy qtm'hqt"eqqtf kpcvkqp"qh" vj g"cevkxkkgu"qh"xctkqwu"egpvtcn'cpf "uvcy"cwj qtkkgu"guvcdrkuj gf "wpf gt"xctkqwu'rcy u0Vj g"r qvgpvkcn'ueqr g"qh'vj g"Cev'ku'dtqcf." y kj "$gpxktqpo gpv$"f ghkpgf "vq"kpenwf g"y cvgt. "ckt"cpf "rcpf "vj g"kpvgttgrcvkqpuj kr u'y j kej "gzkuv'co qpi "y cvgt. "ckt"cpf "rcpf" wo cp"dgkpi u"cpf "qvj gt "hxkpi "etgcwtgu."r rcpvu. "o ketq/qti cpkuo u"cpf" rtqr gtv<math>\{0$ "

Vj g'Y cvgt '*Rt gxgpvkqp'cpf 'Eqpvt qrlqli'r qmvkqp+'Cev.'3; 96'*vj g'5Y cvgt 'Cevö+'"

 $\label{thm:continuous} Vj\ g'Y\ cvgt''Cev'cko\ u''vq''r\ tgxgpv'cpf''eqpvtqn'y\ cvgt''r\ qmwkqp''cu''y\ gm'cu'tguvqtg'y\ cvgt''s\ wcnk{"d{"guvcdnkuj kpi "cpf "go\ r\ qy\ gtkpi" y\ g''Egpvtcn''Rqmwkqp''Eqpvtqn''Dqctf\ u''Vyf g''Y\ cvgt''Cev''cp{"r\ gtuqp''guvcdnkuj kpi "cp{"kpf\ wnt{"r\ tqr\ gtc\ kqp''qt''r\ tqeguu."cp{"vtgc\ o\ gpv'qt''f\ kur\ qucn'u{uvgo\ ."wug'qh''cp{"pgy\ "qt''cn\ gtg'f\ "qwmgv'hqt''y\ g''f\ kuej\ cti\ g''qh'' ugy\ ci\ g''gt\ u''y\ g''eqpugpv''qh''y\ g''tgrgxcpv''Ucvg''Rqmwkqp''Eqpvtqn''Dqctf\ ."y\ j\ q''ku'' go\ r\ qy\ gtgf''vq''guvcdnkuj 'uvcpf\ ctf\ u''cpf''eqpf\ kkqpu''y\ cv'ctg''tgs\ wktgf''vq''dg''eqo\ r\ nkgf''y\ kj\ 0''' \\$

Vj g'Ckt '*Rt gxgpvkqp'cpf 'Eqpvt qrlqllRqmvkqp+'Cev.'3; : 3'*vj g'δCkt 'Cevö+'"

Vj g"Ck"*Rtgxgpvkqp"cpf "Eqpvtqri'qh"Rqmwkqp+"Cev."3; : 3"j cu"dggp"gpcevgf "vq"r tqxkf g"hqt" yj g"r tgxgpvkqp."eqpvtqri'cpf "cdcvgo gpv'qh'ckt"r qmwkqp0'Rwtuwcpv'vq"yj g"r tqxkukqpu"qh'vj g"Ckt"Cev."cp{ "r gtuqp."guvcdrkuj kpi "qt"qr gtcvkpi "cp{ "kpf wuxtleri' r mpv'y kyj kp"cp"ckt"r qmwkqp"eqpvtqri'ctgc."o wuv'qdvckp"yj g"eqpugpv'qh"yj g"tgrgxcpv'Uvcvg"Rqmwkqp"Eqpvtqri'Dqctf "r tkqt"vq" guvcdrkuj kpi "qt"qr gtcvkpi "uwej "kpf wuxtleri'r mpv0P q"r gtuqp"qr gtcvkpi "cp{ "kpf wuxtleri'r mpv1kp"cp{ "ckt"r qmwkqp"eqpvtqri'ctgc"ku" r gto kwgf "vq"f kuej cti g"vj g"go kuukqp"qh'cp{ "ckt"r qmwcpv1kp"gzeguu'qh'vj g"wcpf ctf u"rckf"f qy p"d{ "vj g"Uvcvg"Rqmwkqp"Eqpvtqri' Dqctf 0"

Vjg'Pqkıg'Rqmvkqp'*Tgi wıc vkqp'('Eqpvtqn+'Twgu'4222'*6Pqkıg'Tgi wıc vkqp'Twguö+''

Vj g"P qkug"Tgi wcvkqp"Twgu"tgi wcvg"pqkug"ngxgnu"kp"kpf wurkcn"eqo o gtekcn'cpf "tgukf gpvkcn"| qpgu0Vj g"P qkug"Tgi wcvkqp" Twgu"cnq"guvcdrkuj "| qpgu"qh'ukgpeg"qh'pqv'nguu'vj cp"322"o gvgtu'pgct"uej qqnu."eqwtvu"j qur kcnu "gve0Vj g"twgu"cnq"cuuki p" tgi wcvqt{"cwj qtk√"hqt"yj gug"uvcpf ctf u'vq"yj g"nqecn'f kurtkev'eqwtvu0Rgpcn√"hqt"pqp/eqo r ncpeg"y kj "vj g"P qkug"Tgi wcvkqp" Twgu'uj cm'dg'wpf gt "vj g'r tqxkukqpu"qh'vj g"Gpxktqpo gpv™Rtqvgevkqp+"Cev."3; : 80"

Vj g''O wplekr crl'Uqrlf ''Y curgu''*O cpci go gpv''cpf ''J cpf rkpi +'T wrgu.''4222''*ôY curg''O cpci go gpv'T wrgu.''4222ö+''cu'' uwr gt ugf gf 'ld{ 'Uqrlf 'Y curg'O cpci go gpv'T wrgu.''4238''*ôY curg'O cpci go gpv'T wrgu.''4238ö+'''

Vj g'Y cung'O cpci go gpv'Twrgu."4222"cr r rkgf "\q"gxgt {"o wpkek cri'cwj qtk\{"tgur qpuklng"hqt"eqmge\kqp."ugi tgi c\kqp."uvqtci g." vcpur qtvc\kqp."r tqeguukpi "cpf "f kur qucri'qh'o wpkek cri'uqrkf "y cungu\Cp{"o wpkekr cri'uqrkf "y cung"i gpgtcvgf "kp"c'ek\{"qt"c'\qp p." y cu"tgs wktgf "\q"dg"o cpci gf "cpf "j cpf rgf "\p"ceeqtf cpeg"y kj "\j g"eqo r rkcpeg"etk\gtkc"cpf "\j g"r tqegf wtg"rckf "f qy p"\p" Uej gf wrg" KK qh" \j g" Y cung" O cpci go gpv' Twrgu." 4222" o cng" \j g" r gtuqpu" qt" guvcdrkij o gpw"i gpgtcvkpi "o wpkekr cri'uqrkf "y cungu"tgur qpuklng"hqt"gpuwtkpi "f grkxgt {"qh"y cungu"\kp"ceeqtf cpeg"y kj "\j g" eqngevkqp"cpf "\ugi tgi cvkqp"u{ uvgo "cu"pqvkhkgf"d{"\j g"o wpkekr cri'cwj qtk\{0'Vj g"Y cung"O cpci go gpv'Twrgu."4222"j cxg"dggp" uwr gtugf gf "d{"\j g"Y cung"O cpci go gpv'Twrgu."4238"y j kej "uvkr wrcy"xctkqwu"f wkgu"qh"y cung"i gpgtcvqtu"y j kej ."\kpvgt"crkc." kpernxf g"ugi tgi cvkqp"cpf "uvqtci g"qh"y cung"i gpgtcvgf "d{"\j go "\kp"\j g"o cppgt"r tguetkdgf "\kp"\j g"Y cung"O cpci go gpv'Twrgu." 4238\text{\tex

"



Vj g'J c| ctf qwu'cpf 'qvj gt 'Y cuwgu' O cpci go gpv' ('Vtcpudqwpf ct { 'O qxgo gpv+'Twwgu' 4238' 6Y cuwg' O cpci go gpv' cpf 'Vtcpudqwpf ct { 'T wwgu' 4238ö+'"

J c| ctf qwu"Y cuxg"O cpci go gpv"Twgu"ctg"pqvkhkgf "vq"gpuwtg"uchg"j cpf rhpi ."i gpgtcvkqp."r tqeguulpi ."vtgcvo gpv."r cenci g." uvqtci g." vtcpur qtvcvkqp." wug" tgr tqeguulpi ."eqngevkqp." eqpxgtulqp." cpf "qhlgtlpi "hqt" ucng."f guxtwevkqp" cpf "f kur qucni qh" J c| ctf qwu"Y cuxg0"Vj gug"Twgu"eco g"kpvq"ghlgev"kp"yj g"{ gct"3; : ; "cpf "j cxg"dggp"co gpf gf "revgt"kp"yj g"{ gctu"4222."4225"cpf "y kyj "hkpcn'pqvkhkecvkqp"qh"yj g"J c| ctf qwu"Y cuxg"*O cpci go gpv."J cpf rhpi "cpf "Vtcpudqwpf ct { "O qxgo gpv+"Twgu."422: "kp" uwr gtuguulqp"qh"hqto gt"pqvkhkecvkqp0"Vj g"Twgu"rc{ 'f qy p"eqttgur qpf kpi "f wkgu"qh"xctkqwu"cwj qtkkgu"uwej "cu'O qGH"ERED." Ucvg"I"WV"I qxvu0"UREDu"TREEu."FI HV."Rqtv'Cwj qtkx{ "cpf "Ewuvqo "Cwj qtkx{ "y j krg"Uvcvg"Rqmwkqp"EqpvtqriDqctf u"I" Rqmwkqp"EqpvtqriEqo o kwggu"j cxg"dggp"f guki pcvgf "y kyj "y kf gt"tgur qpukdkrkkgu"vqwej kpi "cetquu"cro quv"gxgt { "cur gev"qh" J c| ctf qwu"y cuvgu"i gpgtcvkqp."j cpf kpi "cpf "y gkt"f kur qucn'0"

I GPGTCN'EQTRQTCVG'EQORNKCPEG'"

••

Eqo rcplgu'Cev.'4235'*vj g'ŏEqo rcplgu'Cevö+'"

Vj g'Tgi kmt cvkqp'Cev.'3; 2: '*vj g'5Tgi kmt cvkqp'Cevö+"

Vj g'Tgi kntcvkqp'Cev'y cu'r cuugf ''\q''eqpuqrlf cvg''y g''gpcevo gpwl'tgrcvkpi ''\q''y g'tgi kntcvkqp''qh''f qewo gpwl'Vj g''o ckp''r wtr qug'' hqt'y j kej ''y g'Tgi kntcvkqp''Cev'y cu''f guki pgf ''y cu'\q''gpuwtg''kphqto cvkqp''cdqw''cmlf gcml'eqpegtpkpi ''rcpf ''uq''y cv'eqttgev'rcpf '' tgeqtf u''eqwf ''dg''o ckpvkpgf 0Vj g''Tgi kntcvkqp''Cev'kn''wgf ''hqt''r tqr gt''tgeqtf kpi ''qh''tcpucevkqpu''tgrcvkpi ''q''qyi gt''ko o qxcdrg'' r tqr gtv ''cmq0Vj g''Tgi kntcvkqp''Cev'r tqxkf gu''hqt''tgi kntcvkqp''qh''qyi gt''f qewo gpwl'cmq.''y j kej ''ecp'i kxg''y gug''f qewo gpwl'o qtg'' cwj gpvkek{0Tgi knytkpi ''cwj qtkkgu''j cxg''dggp''r tqxkf gf ''kp''cml'yi g''f kntkewl'hqt''y ku''r wtr qug0'''

GO RNQ[O GP V'CPF 'NCDQWT'NCY U"

Vj g'Eqf g'qp'Y ci gu'423; '*vj g'δEqf gö+'"

Vj g'Eqf g'tgegkxgf "vj g'cuugpv'qh'vj g'Rtgulf gpv'qh'lfof kc'qp''Cwi wuv': .'423; 0Vj g'r tqxkulqpu'qh'vj g'Eqf g'uj cm'eqo g'lpvq'ghlgev' htqo "vj g'f cvg'pqwlhlgf "lp"vj g''Qhhlelcn'I c| gwg''d{ "vj g''Egpvtcn'I qxgtpo gpv0'Vj g''Eqf g''y km'tgr meg"vj g''hqwt "gzkunlpi "cpelgpv' my u"pco gn("*k#'vj g''Rc{o gpv'qh''Y ci gu''Cev."3; 58. "*kk#'vj g''O lplo wo "Y ci gu''Cev."3; 6: . "*kkk#'vj g''Rc{o gpv'qh''Dqpwu''Cev." 3; 87. "cpf "*kx+"vj g''Gs wcn'Tgo wpgtcvlqp'Cev."3; 980Vj g'Eqf g'y km'cr r n("vq'cm'go r mq{ggu'cpf 'cmyy u'vj g'Egpvtcn'I qxgtpo gpv' vq'ugv'c''o lplo wo 'uvcwwqt{ 'y ci g0''

Vj g'hqwt 'gzkukpi 'ncy u'ctg'cu'hqmqy u<'''

Vj g'Rc{o gpv'qh'Y ci gu'Cev.'3; 58'"

Rc{o gpv'qh'Y ci gu'Cev."3; 58."cu'co gpf gf.."Rc{o gpv'qh'Y ci gu'\congrous gpf o gpv\"Cev."4239"ku'cko gf "cv'tgi wcvkpi "\j g'r c{o gpv'qh'Y ci gu'\q'egtvckp'ecuugu'qh'r gtuqpu'go r nq{gf 'kp'egtvckp'ur gekkkgf 'kpf wuxtkgu'cpf '\q'gpuwtg'c'\ur ggf { "cpf "ghhgevkxg'tgo gf { "hqt''y go "ci ckpuv'kmgi cn'f gf wevkqpu'qt "wplwuxkhkgf "f grc{"ecwugf "kp'r c{kpi "y ci gu'\q''y go 0'V j g'Cev'eqphgtu'qp''y g''r gtuqp\"\up"t gur qpuktng"hqt''r c{o gpv'qh'y ci gu'egtvckp''qdnki cvkqpu'y kj "tgur gev'\q''y g''o ckpvgpcpeg''qh'\tgi kuvgtu''cpf "\y g''f kur rc{"hp''uwej "hcevt{"Tguvcdnkuj o gpv."qh''y g''cduvtcevu'qh'y ku''Cev'cpf "Twrgu''o cf g''y gtg''wpf gt0"

Vj g'O kpko wo 'Y ci gu'Cev.'3; 6: '"

Vj g'O kpko wo "Y ci gu'Cev."3; 6: "eco g'kpvq'hqteg'y kyj "cp"qdlgevkxg'vq'r tqxkf g'hqt'vj g'hkzcvkqp"qh'c"o kpko wo "y ci g'r c{cdng" d{ 'vj g'go r m{gt'vq'vj g'go r m{gg0Gxgt{ "go r m{gg1'ku'o cpf cvgf "vq'r c{"y g'o kpko wo "y ci gu'vq"cm'go r m{ggu'gpi ci gf "vq'f q" cp{"y qtn'hunkngf ."wpunkngf ."cpf "o cpwcn'qt "engtkecn'*kpenwf kpi "qwvy qtngtu+'kp"cp{ "go r m{o gpv'hkvgf "kp"y g'bej gf wg"vq"y ku" Cev."kp'tgur gev'qh'y j kej "o kpko wo "tcvgu'qh'y ci gu'j cxg'dggp'hkzgf "qt"tgxkugf "wpf gt "yj g'Cev0""



Vj g'Rc{o gpv'qh'Dqpwu'Cev.'3; 87'*vj g'\delta RqD'Cev\delta+'"

 $Vj g''RqD''Cev''r tqxkf gu''hqt''r c {o gpv'qh'o kpko wo "dqpwu''q''hcevqt {"go r nq {ggu''cpf "gxgt {"qyj gt "guxcdrkuj o gpv'kp"y j kej "42"qt" o qtg''r gtuqpu''ctg"go r nq {gf "cpf 'tgs wktgu''o ckpvgpcpeg"qh''egtvckp"dqqmu''cpf 'tgi knvgtu''cpf 'hkrkpi "qh''o qpyj n{ 'tgwtpu''uj qy kpi "eqo r wcvkqp"qh''cmqecdng''uwtr nwu.''ugv''qp"cpf 'hyv'qhh''qh''cmqecdng''uwtr nwu''cpf "dqpwu''f wg0"''}$

Vj g'Gs wen'T go wpgt e wlqp'Cev.'3; 98'"

Vj g'Gs wcn'Tgo wpgtcvkqp''Cev''3; 98'cko u'vq'r tqxkf g'hqt''yj g'r c{o gpv'qh'gs wcn't go wpgtcvkqp''q'o gp''cpf ''y qo gp''y qtngtu''cpf ''hqt''yj g''r tgxgpvkqp''qh'f kuetko kpcvkqp."qp''yj g''i tqwpf ''qh'ugz."ci ckpuv'y qo gp''kp''yj g''o cwgt "qh'go r m{o gpv'cpf ''hqt''o cwgtu'' eqppgevgf "vj gtgy kyj "qt "kpekf gpvcn''yj gtgyq0'Ceeqtf kpi "vq''yj g''Tgo wpgtcvkqp''Cev."pq"go r m{gt "uj cm'r c{"vq"cp{"y qtngt." go r m{gf "d{"j ko "T'j gt "kp"cp"guvcdrkuj o gpv''c''tgo wpgtcvkqp''*xy j gyj gt"r c{cdng"kp"ecuj "qt"kp"nkpf +"cv'tcvgu''nguu''hcxqwtcdng" yj cp''yj qug"cv'yj j kej "tgo wpgtcvkqp''ku'r ckf "d{"j ko "vq"yj g''y qtngtu''qh''yj g''qr r quksg"ugz "kp"uwej "guvcdrkuj o gpv''hqt''r gthqto kpi "yg"uco g'y qtni'qt''y qtni'qh'c'uko krct"pcwtg0'Kp"cf f kkqp."pq"go r m{gt"uj cmi'hqt"eqo r n{kpi "y kyj "yj g''hqtgi qkpi "r tqxkukqpu'qh" yj g''Tgo wpgtcvkqp''Cev.'tgf weg''yj g'tcvg''qh'tgo wpgtcvkqp''qh''cp{"y qtngt0Pq"go r m{gt"uj cm'y j krg'o cmkpi 'tgetwko gpv'hqt''yj g'' uco g'y qtni'qt'y qtni'qh''c'uko krct "pcwtg."qt 'kp'cp{"eqpf kkqp"qh'ugtxkeg'uwdugs wgpv'uq'tgetwko gpv'uwej "cu'r tqo qvkqpu."vtckpkpi "qt''tcpulrgt."o cng''cp{"f kuetko kpcvkqp"ci ckpuv'y qo gp"gzegr v'y j gtg'yj g''go r nq{o gpv'qh'y qo gp''kp''uwej "y qtm'ku'r tqj kdkxgf "qt" tguvtkevgf "d{"qt''wpf gt"cp{"hqt''yj g''ko g''dgkpi ''kp''hqteg0'

Qeewr cylapcdUchgy{.'J gcnj 'cpf 'Y qtmlpi 'Eqpf lylapu'Eqf g.'4242'"

Vj g'I qxgtpo gpv'qh''Kpf kc"gpcevgf ":-Vj g''Qeewr cvkqpcn''Uchgv{."J gcnj "cpf "Y qtnkpi "Eqpf kkkqpu''Eqf g."4242"y j kej "tgegkxgf" y g''cuugpv'qh''y g''Rtgulf gpv'qh''Kpf kc"qp"Ugr vgo dgt"4: .'42420Vj g''r tqxkukqpu'qh'y ku''eqf g''y kni'dg''dtqwi j v'kpvq''hqteg''qp''c''f cvg" vq''dg''pqvkhkgf "d{"y g''Egpvtcn'I qxgtpo gpv'0K''r tqr qugu''vq''twduwo g''ugxgtcn'tugr ctcvg''ngi kurcvkqpu. "kpenwf kpi "y g''Hcevqtkgu''Cev." 3; 6: ." y g" Eqpvtcev' Ncdqwt" *Tgi wcvkqp" cpf "Cdqrkkqp+" Cev." 3; 92." y g" Kpvgt/Ucvg" O ki tcpv'' Y qtno gp" *Tgi wcvkqp" qh'' Go r rq{o gpv'cpf "Eqpf kkqpu"qh''Ugtxkeg+"Cev."3; 9; "cpf "y g"Dwkrf kpi "cpf "Qy gt "Eqpvtwevkqp" Y qtngtu" *Tgi wcvkqp"qh'' Go r rq{o gpv'cpf "Eqpf kkqpu"qh''Ugtxkeg+"Cev."3; ; 80'Vj g''rcy u''y cv'ks'uj cm'uwduwo g''ctg''cu'hqmqy u''ó'''

Eqpvt cev'Ncdqwt '*Tgi wrcvlqp'cpf 'Cdqrlsdqp+'Cev.'3; 92'"

Vj g'Eqpvtcev'Ncdqw"*Tgi wævkqp"cpf "Cdqrkkqp+'Cev."3; 92"tgs wktgu"guvcdrkuj o gpw"y cv"go r m{ "qt"j cxg"go r m{ gf "qp"cp{" fc{"kp"yj g"rtgegf kpi "wy grxg"o qpyj u"wy gpv{"qt"o qtg"y qtngtu"cu"eqpvtcev'redqwt "vq"dg"tgi knygtgf 0'Vj g"Cev'tgs wktgu"yj g" rtkpekr cn"go r m{ gt "qh"cp"guvcdrkuj o gpv"vq"y j kej "yj g"Eqpvtcev'Ncdqwt"Cev'cr r ngu"vq"o cng"cp"cr r necvkqp"hqt"tgi knvtcvkqp"qh" yj g"guvcdrkuj o gpv"vq"go r m{ "eqpvtcev'redqwt"kp"yj g"guvcdrkuj o gpv0'Eqpvtcevqt"vq"y j qo "yj g"Eqpvtcev'Ncdqwt"Cev'cr r ngu"ku" tgs wktgf "vq"qdvckp"c"hegpug"cpf "pqv"vq"wpf gt vcng"qt "gz gewg"cp{"y qtm"yj tqwi j "eqpvtcevt"cdqwt"gz egr v'wpf gt "cpf" kp"ceeqtf cpeg" y kj "yj g"hegpug"kunwgf 0'Vj g"EqpvtcevNcdqwt"Cev'ko r qugu"egtvckp"qdrki cvkqpu"qp"yj g"eqpvtcevqt"kpenwf kpi "yj g"guvcdrkuj o gpv"qh"ecpygpu "tguv'tqo u "y cuj kpi "hcekrkkgu."hktuv'ckf "hcekrkkgu'cpf" r tqxkukqp"qh"ft kpmhpi "y cvgt"cpf" r c{o gpv'qh"y ci gu0"kp"yj g" gxgpv'yj cv'yj g"eqpvtcevqt"hcknu"q"r tqxkf g"yj gug"co gpkkgu."yj g"r tkpekr cn"go r m{gt"ku"wpf gt"cp"qdrki cvkqp"vq"r tqxkf g"yj gug" hcekrkkgu'y kyj kp"c"r tguetkdgf "ko g0""

Vj g'Hcevqt lgu'Cev.'3; 6: '"

Kpf wuxt kcnT grc vkqpu'E qf g.'4242'"

Vj g'I qxgtpo gpv'qh'Ifof kc"gpcevgf ":-Vj g'Ifof wwtkcn'Tgrcvkqpu'Eqf g."4242ø'y j kej "tgegkxgf "yj g'cuugpv'qh'Yo g'Rtgukf gpv'qh'Ifof kc" qp"Ugr ygo dgt"4: ."42420'Vj g"r tqxkukqpu"qh"yj ku"eqf g"y km'dg"dtqwi j v"kpvq"hqteg"qp"c"f cvg"vq"dg"pqvkhkgf "d{"vj g"Egpvtcn' I qxgtpo gpv0'K'r tqr qugu"vq"uwduwo g"yj tgg"ugr ctcvg"rgi kurcvkqpu."pco gn{."vj g"Kpf wwtkcn'F kur wgu"Cev."3; 69."vj g"Vtcf g" Wpkqpu'Cev."3; 48"cpf "vj g"Kpf wwtkcn'Go r m{o gpv'*Ucpf kpi "Qtf gtu+'Cev."3; 680'E wttgpvn("vj g"vy u"ctg"cu'hqmqy uó'"

Vtcf g'Wpkqpu'Cev.'3; 48'"



 $\label{thm:continuity:continuit$

Eqf g'qp'Uqek: n'Ugewt kv{ .'4242'''

Vj g'I qxgtpo gpv'qh'Ifof kc"gpcevgf "÷Vj g'Eqf g''qp''Uqekcn'Ugewtk/{.''4242''y j kej "tgegkxgf "y g''cuugpv'qh''y g''Rtgulf gpv'qh'Ifof kc" qp''Ugr vgo dgt "4: .''42420'Vj g''r tqxkulqpu''qh''y ku''eqf g''y km''dg''dtqwi j v''kpvq''hqteg''qp''c"f cvg''vq''dg''pqvkhlgf "d{"vj g''Egpvtcn'' I qxgtpo gpv''K''r tqr qugu''vq''uwduwo g''ugxgtcn''ugr ctcvg''ngi kurcvlqpu''kpenwf kpi "vj g''Go r m{ggw''Eqo r gpucvlqp''Cev.3; 45."vj g'' Go r m{ggw''Uvcvg''Kpuwtcpeg''Cev."3; 6: .''vj g''Go r m{ggw''Rtqxkf gpv''Hwpf u''cpf "O kuegmcpgqwu''Rtqxkulqpu''Cev."3; 74."vj g'' O cvgtplx/{ 'Dgpghk/'Cev."3; 83'cpf 'vj g''Rc{o gpv'qh'I tcwkx{ 'Cev."3; 940'Vj g''ncy u''vj cv'vj g''eqf g'uj cm'uwduwo g.''ctg''ewttgpvn{''cu'' hqmy u''o'''

Go rm{ggød'Eqo rgpucvlqp'Cev.'3; 45'"

 $\label{eq:composition} Vj\ g"Go\ r\ m\{ggug'Eqo\ r\ gpuc\ dp"Cev."3;\ 45"rtqxkf\ gu"lqt"rc\{o\ gpv'qh"eqo\ r\ gpuc\ dp"vq"lplwtgf"go\ r\ m\{ggug'qt"y\ qtmo\ gp"d\{"egtvclp"eruugu"qh"go\ r\ m\{ggug'Cev."y\ g"co\ qwpv'qh"eqo\ r\ gpuc\ dg"vq"ch"ceekf\ gpv'ctkulpi\ "qw"qh"cpf"f\ wlpi\ "y\ g"eqwtug"qh"go\ r\ m\{ggug'Cev."y\ g"co\ qwpv'qh"eqo\ r\ gpuc\ dg"rckf"f\ gr\ gpf\ u"qp"y\ g"pcwt g"cpf "ugxgtk\{"qh"y\ g"kplwt {0Vj\ g"Go\ r\ m{ggug'Cev'cnuq"rc{u"f\ qy\ p"y\ g"f\ wkgu"l'qdrki\ c\ dqpu"qh"cp"go\ r\ m{ggr "cpf"r\ gpcnkgu"kp"ecugu"qh"pq/lwrhkro\ gpv'qh"uwej\ "qdrki\ c\ dqpu"y\ gtgqh0"Vj\ gtggh0"Vj\ gtggrctcy"og y\ qf\ u"qh"ecnewc\ dqp"qt"gurko\ c\ dqp"qh"eqo\ r\ gpuc\ kqp"hqt"lplwt {"uwwckpgf"\ d{"y}\ g"go\ r\ m{gg0Vj\ g"go\ r\ m{ggV}\ g"go\ r\ m{ggWEqo\ r\ gpuc\ kqp"ctgruy\ g' lgrqtvtgi\ ctf\ lpi\ "cp"go\ r\ m{ggyy\ ky\ kp"ugxgp"f\ c{u"qh"fgcy'\ u"ft'gcy'\ u"ft'gtkqwu"dqf\ kn{"lplwt {0"}}\ lllyte{0"}$

Go rm{ggøu'Uvcvg'Kpuwtcpeg'Cev.'3; 6: '"

Kłki'cp''Cev''q''r tqxkf g'hqt''egtvckp''dgpghkui'q'go r m{ggu'lxp''ecug'qh'lukempguu."o cvgtpkk{"cpf ":go r m{o gpv'lplut{ø'cpf "'q''o cng" r tqxkukqp"'hqt''egtvckp''qvj gt "o cwgtu"lxp''tgrcvkqp"'y gtgvq0'Kl'uj cmi'cr r n{"'q"cmi'hcevqtkgu"*kpenwf kpi "hcevqtkgu''dgmpi kpi "vq"'y g" I qxgtpo gpv+''qvj gt''y cp''ugcuqpcnihcevqtkgu0'Vj g''GUKCev'tgs wktgu''cmi'y g''go r m{ggu''qh''y g''guvcdnkuj o gpvu''q' y j kej "'y ku''Cev' cr r nkgu''q''dg''kpuwtgf "kp''y g''o cppgt''r tqxkf gf "'y gtg''wpf gt0Go r m{gt''cpf "go r m{ggu''dq'y "ctg''tgs wktgf "'q''o cmg''eqpvtkdwkqp" vq''y g''hwpf 0'Vj g''tgwtp''qh'y g''eqpvtkdwkqp" o cf g'ku''tgs wktgf "'q''dg''hkrgf "y kyj "'y g''Go r m{gg''Ucvg''Kpuwtcpeg'f gr ctvo gpv0""

Go rm{ ggøti/Rt qxlf gpv/Hwpf 'cpf 'O kægnæpgqwt/Rt qxktkqpti/Cev.'3; 74'"

O cvgt play{ 'Dgpghlay'Cev.'3; 83'"

Vj g"Cev'r tqxkf gu"hqt"ngcxg"cpf "tki j v'vq"r c{o gpv'qh"o cvgtpk\{"dgpghku"vq"y qo gp"go r m{ggu"kp"ecug"qh"eqphhqog gpv'qt" o knecttkci g"gve0'Vj g"Cev'ku"cr r necdng"vq"gxgt {"guvcdrkuj o gpv'y j kej "ku"c"hcevqt {."o kpg"qt "r nepvvkqp"kpenwf kpi "cp{"uwej "guvcdrkuj o gpv'dgmpi kpi "vq"i qxgtpo gpv'cpf "vq"gxgt {"guvcdrkuj o gpv'qh"gs wguvtkep."cetqdcvke"cpf "qvj gt"r gthqto cpegu."vq" gxgt {"iji qr "qt"guvcdrkuj o gpv'y kj kp"tj g'o gcpkpi "qh"cp{"try "hqt"tj g"klo g"dgkpi "kp"hqteg"kp"tgncvkqp"q"tji qr u"cpf "guvcdrkuj o gpvu" kp"c"uvcy."kp"y j kej "vgp"qt"o qtg"r gtuqpu"ctg"go r m{gf."qt"y gtg"go r m{gf."qp"cp{"fc{"qh"y g"r tgegf kpi "wy gnxg"o qpvj u="r tqxkf gf "vj cv"y g"uvcy"i qxgtpo gpv"o c{."y kj "vj g"crrtqxcn"qh"y g"Egpvtcn"I qxgtpo gpv"chxgt"i kxkpi "cv"ngcuv"y q"o qpvj uø" pqvkeg"uj cm"cr r n{"cp{"qh"y g"r tqxkukqpu"qh"y ku"Cev"vq"guvcdrkuj o gpvu"qh"guvcdrkuj o gpvu."kpf wuxtkcn"eqo o gtekcn" ci tkewnwtcn"qt"qvj gty kug0"



Rc{o gpv'qh'I tcwks{'Cev.'3;94'"

Vj g'Cev'tij cm'cr r n' ''q'gxgt { 'hcevqt { .'o kpg'r mpw.kqp.'r qtv'cpf 'tckny c { 'eqo r cp { ='\q'gxgt { 'tij qr 'qt'guwcdrkij o gpv'y kj kp'\j g'' o gcpkpi "qh''cp { 'ncy "hqt" y gr'do g'dgkpi "kp"hqteg"kp"tgmkqp"\q"uj qr u'cpf "guwcdrkij o gpw"kp"c"Uwg."kp" y j kej "ygp"qt"o qtg" r gtuqpu'ctg"go r m{ gf ."qp"cp { 'f c { 'qh'\j g'' t gegf kpi "y grkg"o qpyj u='uwej "qyj gt''guwcdrkij o gpw''qt''ercuu" qh'guwcdrkij o gpw. 'kp'y j kej "ygp"qt"o qtg"go r m{ ggu'ctg"go r m{ gf ."qp"cp { 'f c { 'qh'\j g'' t gegf kpi "y grkg"o qpyj u='uwej "qyj gt''guwcdrkij o gpw''q''y j kej "ygrkg"o qpyj u. 'cu'\j g'Egptxcn'' I qxgtpo gpv."o c { 'd { 'pqwkheckqp.'ur gekh { 'lp'\j kl'dgj crh0'C"\j qr "qt"guwcdrkij o gpv\'q'y j kej "\j ku''Cev'j cu''dgeqo g''cr r necdrg" uj cm''dg"eqpvkpwgf "\q"dg"i qxgtpgf "d{ "yj kl''Cev'ktgur gevkxg"qh'\j g"pwo dgt"qh''r gtuqpu''hcmkpi "dgrqy "ygp"cv'cp { 'f c { '0'\j g'' i tcwkk { 'tij cm'dg"r c { 'cdrg"\q"cp"go r m { gg''qp"\gto kpckqp"qh'j kl''go r m { o gpv'chytj' g'j cu''tgpf gtgf "eqpvkpwqwu''ugtxkeg''qh''pt'' rguu''y cp"hxg" { gctu''qp"'uwr gtcppwc\kqp"qt" kugtugo gpv''qt "f kucdrgo gpv''f wg'\q"ceekf gpv'qt "f kugcugo'' Vj g''hkxg/{ gct"r gtkqf "uj cm'dg''tgrczgf 'kp"ecug''qh''yto kpckqp"qh''ugtxkeg''f wg'\q" f gcyj "qt"f kucdrgo gpv0'

Go rm{ gguø/F gr qukv'Nkpngf 'Kpuwt cpeg'Uej go g.'3; 98'''

Vj g'tej go g'tij cmidg'cf o kpknetgf "d{" 'y g'Egpvtcn'Dqctf "eqpurkwwgf "wpf gt 'tigevkqp'8E'qh'fy g'GRHCev0Vj g't tqxkukqpu't grcvkpi "wq't geqxgt{"qh'f co ci gu'tqt'f ghcwn'kp'rc{o gpv'qh'eqpvtkdwkqp'y kyj "y g'r gtegpvci g'qh'f co ci gu'ctg'nckf "f qy p'wpf gt "Ugevkqp" : C"qh'y g'Cev0'Vj g''go r m{gt 'hcmkpi "wpf gt "y g''uej go g''uj cm'ugpf "vq''y g''Eqo o kuukqpgt "y kyj kp'hkheggp'f c{u'qh'y g''emqug''qh'' gcej "o qpyj "c"t gwtp"kp" y g"r t guetkdgf "hqto 0'Vj g"t gi knegt "cqf "qyj gt "t geqtf u''uj cm'dg"r t qf wegf "d{"gxgt{"go r m{gt "vq'' Eqo o kuukqpgt"qt "qyj gt"qhhegt "uq''cwj qtk| gf "uj cm'dg''r t qf wegf "hqt "kpur gevkqp"htqo "vko g''vq''ko g0'Vj g''co qwpv't gegkxgf "cu'' yj g"go r m{gt xu''eqpvtkdwkqp"cpf "cnnq"Egpvtcn'I qxgtpo gpvxu''eqpvtkdwkqp"vq"yj g''kpuwtcpeg''hwpf "uj cm'dg''etgf kxgf "vq''cp'' ceeqwpv'ecmgf "cu''oF gr qukv'Nkpngf "Kpuwtcpeg''Hwpf "Ceeqwpv0o""

Vj g'Go r nq{ gguø'Rgpukqp'Uej go g.'3; ; 7'"

Hoo kn("r gpukqp"kp"tgrcvkqp"vq"vj ku'Cev'o gcpu"vj g"tgi wrct'o qpvj n("co qwpv'r c{cdrg"vq"c"r gtuqp"dgrqpi kpi "vq"vj g"hoo kn("qhi'yj g" o go dgt"qhi'vj g"Hoo kn("Rgpukqp"Hwpf "kp"vj g"gxgpv'qhi'j ku'f gcvj "f wtkpi "vj g"r gtkqf "qhi'tgernqpcdrg"ugtxkeg0'Vj g"uej go g"uj cm' cr r n("vq"cm'vj g"go r m{ggu'vj j q"dgeqo g"c"o go dgt"qhi'vj g"GRH'qt"RH'qh'vj g"hcevqtkgu'r tqxkf gf "vj cv'vj g"ci g"qhi'vj g"go r m{gg" uj qwf "pqv'dg"o qtg'vj cp"7; "{gctu'kp"qtf gt "vq"dg"grki kdrg"hqt"o go dgtuj kr "wpf gt"vj ku'Cev0Gxgt {"go r m{gg'y j q"ku'o go dgt"qh" GRH'qt"RH'j cu'cp"qr vkqp"qh'vj g"lqkpkpi "vj g"uej go g0'Vj g"go r m{gt"uj cmi'r tgr ctg"c"Hco kn("Rgpukqp"Hwpf "eqpvtkdwkqp"ectf "kp" tgur gev'qh'vj g"cm'vj g"go r m{ggu'y j q"ctg"o go dgtu'qh'vj g"hwpf 0"

Vj g'UgzwerlJ et curo gpv'qh'Y qo gp'ev'Y qtmrneg'*Rtgxgpvlqp.'Rtqj klkslqp'epf 'Tgf tguren'Cev.'4235'*vj g'δCevö+''

Kp"qtf gt"\q"ewtd"\y g"tkug"\p"ugzwcn"\j ctcuuo gpv'qh'y qo gp"cv'y qtmr meg."\y ku"\Cev'y cu"gpcevgf "hqt"r tgxgp\kqp"cpf "tgf tguucn'qh" eqo r mkpwl"cpf "hqt"o cwgtu"eqppgevgf "\y gtgy ky "qt"kpekf gpvcn'y gtgyq0"\y g"\yto u"ugzwcn'j ctcuuo gpv'cpf "y qtmr meg"ctg"dqy "fghkpgf "kp" y g"Cev0'Gxgt { "go r m{ gt"uj qwf" cmq"eqpukkwyg"cp"ökpvtpcn"Eqo r mkpwl"Eqo o kwggö"cpf "gxgt { "qhhkegt"cpf" o go dgt"qh'y g"eqo r cp{"uj cm'j qnf "qhhkeg"hqt"c"r gtkqf "qh'pqv'gzeggf kpi "y tgg" { gctu"htqo "y g"f cwg"qh'pqo kpcwkqp0'Cp{" ci i tkgxgf "y qo cp"ecp"o cng"c"eqo r mkpv'kp"y tkkkpi "\q"y g"Kpvtpcn"Eqo o kwgg"\p"tgmkqp"\q"ugzwcn"\j ctcuuo gpv'qh'hgo cng"cv' y qtmr meg0'Gxgt { "go r m{ gt"j cu"c"f w\{"\q'r tqxkf g"c"uchg'y qtmkpi "gpxktqpo gpv'cv'y qtmr meg"y j kej "\y cmlkpenxf g"uchg\\" ltqo " y g"r gtuqpu"eqo kpi "kpvq"eqpvcev'cv'y g'y qtmr meg."qti cpkukpi "cy ctgpguu'r tqi tco u"cpf "y qtmi qr u. "f kur m{ "qh'twgu'tygmvkpi " q" y g"ugzwcn"j ctcuuo gpv'cv'cp{ "eqpur kewqwi"r ctv'qh"y g"y qtmr meg."r tqxkf g"pgeguuct { "hcekrkkgu"vq"y g"kpvgtpcn"qt"meen' eqo o kwgg"hpt"f gcnkpi "y ky "y g"eqo r mkpv'uwej "qy gt"r tqegf wtcn'tgs wktgo gpwl'\q"cuuguu'y g"eqo r mkpw0""

Ej kf 'Ncdqwt'*Rtqj klkkqp'cpf 'Tgi wrcvkqp+'Cev.'3; : 8'*vj g'\delta ENRT'Cev\delta+"

 $\label{thm:continuity:continuit$

VCZ'TGNCVGF'NGI KUNCVKQPU"

Kpeqo g'Vcz'Cev.'3; 83'*vj g'ōKV'Cevö+'"

 $\label{thm:condition} Vj\ g''K''Cev'ku''cr\ r\ recdug''q''gxgt\{''Eqo\ r\ cp\{.''y\ j\ gy\ j\ t''f\ qo\ gukle''qt''hqtgki\ p'y\ j\ qug''hpeqo\ g''ku''czcdug''wpf\ gt''y\ g''t\ t'y\ j\ g''K''Cev''t''Twgu''o\ cf\ g''y\ j\ gtgwpf\ gt''f\ gr\ gpf\ kpi ''wr\ qp''ku''Tgulf\ gpvkcn''Uvcwu''cpf''V{r\ g''qh''Kpeqo\ g''kpxqnxgf\ 0''Vj\ g''KV''Cev''r\ tqxkf\ gu'hqt''y\ g''vzcvkqp''qh''tgulf\ gpv'kp''Kpf\ kc''qp''kpeqo\ g''tgegkxgf\ .''ceetwkpi ''qt''ctkukpi ''kp''kp' kc''qp''kpeqo\ g''tgegkxgf\ .''ceetwkpi ''qt''ctkukpi ''kp''kp' kc''qp''kpeqo\ g''tgegkxgf\ .''ceetwkpi ''qt''ctkukpi ''kp''kp' kc''Gxgt\{''Eqo\ r\ cp\{''cuuguucdug''vq''kpeqo\ g''vz''wpf\ gt''y\ g''KV''Cev''ku'tgs\ wtgf''q''eqo\ r\ n''y\ kj\ ''y\ g''tqxkukqpu''yj\ gtgqh''kpenwf\ kpi ''yj\ qug''tgucvkpi ''q''Vcz''F\ gf\ wevkqp''cv'' Uqweg.''Cf\ xcpeg''Vcz.''O\ kpko\ wo\ ''Cngtpcvkxg''Vcz''cpf''rkng0''Gxgt\{''uwej\ ''Eqo\ r\ cp\{''ku''cnuq''tgs\ wtgf''vq''hkrg''ku''tgwtpu''d\{''\ Qevqdgt''52''qh''gcej\ ''cuuguuo\ gpv''\{gct0'''$



EgpvtcdI qqf u'cpf 'Ugtxlegu'Vcz'Cev.'4239'*vj g'\$I UV'Cev\$+'"

Vj g'I UV'Cev'ngxkgu'kpf ktgev'vcz 'vj tqwi j qww'Kpf kc''vq'tgr meg'o cp{ 'vczgu'ngxkgf 'd{ 'vj g'Egpvtcn'cpf 'Uvcyg'I qxgtpo gpvu0'Vj g'' I UV"Cev"y cu"crrrkecdrg"htqo "Lwn("3."4239"cpf "eqo dkpgf" yj g"Egpvtcn"Gzekug"F w(."Eqo o gtekcn"Vcz."Xcnwg"Cffgf"Vcz" *XCV+,"Hqqf"Vcz."Egpvtcri"Ucrgu"Vcz."*EUV+,"Kpvtqkv,"Qevtqk"Gpvgtvckpo gpv"Vcz."Gpvt{"Vcz.,"Rwtej cug"Vcz.,"Nwzwt{"Vcz." Cfxgtvkugo gpv"Vcz."Ugtxkeg"Vcz."Ewuvqo u"Fw{."Uwtej cti gu0'I UV"ku"ngxkgf"qp"cm'vtcpucevkqpu"uwej "cu"ucng."vtcpuhgt." r wtej cug. "dct vgt. "ngcug. "qt 'ko r qt v'qh'i qqf u'cpf "I'qt 'ugt xlegu0Kpf kc"j cu'cf qr vgf "c"f wcn'I UV"o qf gn "o gcpkpi "vj cv'vczc kqp 'ku" $cfo \ lpkwgtgf''d \{ \ ''dq'j'''j \ g'Wpkqp''cpf''Ucvg'I \ qxgtpo \ gpw0'Vtcpucevkqpu'o \ cfg''y \ kj \ kp''c''ukpi \ ng''uvcvg''ku''ngxkgf''y \ kj \ ''Egpvtcn'I \ UV'''$ *EI UV+'d{ "yj g'Egpvtcnil" qxgtpo gpv'cpf 'Uvcvg'I UV'*UI UV+'d{ "yj g'i qxgtpo gpv'qh'yj cv'uvcvg0Hqt'lpvgt/uvcvg'\tcpucevlqpu'cpf " ko rqtvgf "i qqf u"qt "ugtxkegu."cp"Kpvgi tcvgf "I UV"*M UV+"ku"ngxkgf "d{"vj g"EgpvtcniI qxgtpo gpv0I UV"ku"c"eqpuwo rvkqp/dcugf " $\label{eq:continuous} $$ vcz = "igtghqtg." vczgu" ctg" r ckf "vq" ig g"uvcvg" y j gtg" i qqf u"qt" ugtxkegu" ctg" eqpuwo gf "cpf" pqv" ig g"uvcvg" kp" y j kej "ig g{ "y gtg" r cyf" r cyf" r cyf" r cyf y j kej "ig g{ "y gtg" r cyf" r cyf" r cyf r cyf$ rtqf wegf 0"

IP VGNNGE VWCN'RT QRGT V['NGI KUNC VKQP U'"

Kp"i gpgtcn"vj g"Kpvgngewcn'Rtqr gtv{ "Tki j wt'kpenvf gu'dwv'ku'pqv'rko kxgf "vq"vj g'hqnrqv kpi "gpcevo gpvv<""

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Kof kcp'Eqr {tki j v'Cev.'3; 79'"
Vj g'Vtcf g'O ctm/Cev.'3;;;"
Vj g'F guli pu'Cev.'4222'"
Vj g'Rcvgpv'Cev.'3; 92'"
```

Vjg'Cewi'crrnkecdng'\q'qwt'Eqorcp{'ykmi'dg<'''

Vtcf g'O ctm/Cev.'3;;; '*vj g'oVO 'Cevo+'"

Vj g"Vtef g'O etmi'Cev.'3; ; ; 'r tqxkf gu'hqt'\j g'er r neevkqp"epf 'tgi kıntevkqp"qh'\tef go etmi'kp'Kpf ke'hqt'i tepvkpi 'gzenxukxg'tki j vu" vq"o ctmu'uwej "cu'c'dtcpf". "icdgri'cpf" j gef kpi "cpf "qdvckpkpi "tgrkgh'kp"ecug"qh'kphtkpi go gpv'hqt "eqo o gtekcn'r wtr qugu'cu'c''ttcf g" f guetkr ktqp0Vj g"VO 'Cev'r tqj ktksu'cp{ 'tgi kustckqp'qhlf gegr kxgn{ 'uko krct'stef go ctmu'qt'ej go kecn'eqo r qwpf u'co qpi 'qyi gtu0' Ki'enq'r tqxkf gu'hqt'r gpenkgu'hqt'kphtkpi go gpv.'henkh{kpi "epf 'hengn("errn{kpi 'hqt'\tef go etm0''

CP VKVTWUV'NCY U"

Eqo rgylskip 'Cev.'4224'*vj g'6Cevö+'"

Vj g"Cev'ku"vq"rtgxgpv'rtcevkegu"j cxkpi "cf xgtug"ghhgev'qp"eqo r gvkkqp."vq"rtqo qvg"cpf "uwuvckp"eqo r gvkkqp"kp"o ctmgvu."vq" rtqygev'kpygtguv'qh''eqpuwo gt"cpf "vq"gpuwtg"htggf qo "qh''vtcf g"kp"kff kc0'Vj g"Cev'f gcnu'y kyj "rtqj kdkkqp"qh''cpvk/eqo r gykkxg" ci tggo gpwtPq"gpvgtrtkug"qt"i tqwr "uj cm'cdwug"kuu"f qo kpcpv'r qukklqp"kp"xctkqwu"ektewo uvcpegu"cu"o gpvkqpgf "wpf gt"vj g"Cev0"

I GPGTCN'NCY U"

Cr ctv"htqo "vj g"cdqxg"rkuv"qh"rcy u"ó"y j kej "ku"kpenxukxg"kp"pcwtg"cpf "pqv"gzj cwxkxg"/"i gpgtcn'rcy u"rkng"vj g"P gi qvkcdrg" Kpurtwo gpv'Cev'3:: 3. "Go r rq {o gpv'Gzej cpi gu"*Eqo r wnqt { "P qwhkecvkqp"qh"Xcecpekgu+"Cev."3; 7; . "Eqpuwo gt "Rtqygevkqp" Cev'423; ."Kpf kcp"Eqpvtcev'Cev."3: 94."Vtcpulgt"qh"Rtqr gtv{ 'Cev."3: : 4."Kphqto cvkqp"Vgej pqrqi { 'Cev."4222"gve0"

,,



QWT'J KVVQT['CPF'EGTVCKP'QVJ GT'EQTRQTCVG'O CVVGTU'

Qwt'Eqorcp{'ycu'lpeqtrqtcygf'qp'Fgegodgt''44.''4239'cu'':-Cuuqekcygf Eqcygtu'Rtkxcvg'Nhokgf ø'c'rtkxcvg'hlokgf 'eqorcp{'' wpf gt "y g "Eqorcpkgu" Cev. "4235. "r wtuwcpv" q "e "egt whke cyg" qh kpeqtrqt cwf "F gegodgt" "44." "4239 "kunwgf" d { "y g "T gikunwcf" a kuntct" qh'Eqorcpkgu."MqmcvcOUwdugswgpvn(..'qwt'Eqorcp{'ycu'eqpxgtygf'kpvq'c'rwdnke'nkokgf'eqorcp{'rwtuwcpv'vq'c'tguqnwkqp'' $r \ cuugf \ "d\{ "qwt" Uj \ ctgj \ qnf \ gtu" \ cv" cp" gz \ vtcqtf \ kpct \{ "i \ gpgtcn" o \ gg \ kpi \ "j \ gnf \ "qp" Qevqdgt \ "46." 4245 \ "cpf \ "eqpugs \ wgpvn" \ "vj \ g"pco \ g"qh" \ left \ gg \ "cp" o \ g"qh" o o$ qwt "Eqo r cp{ "y cu"ej cpi gf "vq": Cunqekc vgf "Eqc vgt u"Nko kvgf ø'cpf "c"ht guj "egt vkhlec vg"qh"kpeqtr qt cvkqp "f cvgf "F gego dgt "3; ." 4245"y cu"kuwgf "d{"vj g"Tgi kutct"qh"Eqo r cpkgu."Mqmcvc0'Vj g"eqtr qtcvg"kf gpvkhkecvkqp"pwo dgt"qh"qwt"Eqo r cp{"ku" W4: 34; Y D4239RNE4462230'

Qwt"Eqorcp{"ku"gpicigf"kp"yjg"dwukpguu"qh"rtqxkfkpi"ugtxkegu"d{"yc{"qh"rtg/vtgcvogpv"cpf"rqyfgt"eqcvkpi"qh"cnvokpkwo" gz vtwukqpu''kp''Ctej kgev'cpf "Tgcn'Gurcvg''Kpf wurt {0'Vj g"r tqeguu''dgi kpu''y kj "c"eqo r tgj gpukxg"engcpkpi ."y j gtg"vj g"vcti gvgf" $uwthceg"qh"cnwo \ kpkwo "gz vtwukqpu"ku" vj \ qtqwi \ j \ n ("engcpugf"qh"cp ("f \ kt v." i \ tgcug."qt"eqpvco \ kpcpvu" vj \ cv' o \ ki \ j \ v' ko \ r \ gf \ g" vj \ g")$ uwdugs wgpv'eqcvkpi "rtqeguu0Hqmqy kpi "vj ku."c"uwtcvgi ke"ej go kecn'uqnwkqp"ku"crrnkgf "vq"gpj cpeg"vj g"cfj gukqp"qh"vj g"rqy fgt" eqcvkpi OVj ku'kpxqrxgu'\j g''cr r rkecvkqp"qh''cp''cekf ke''uqruvkqp''hqt''uvthceg''gvej kpi "qt''\j g''wug''qh''c''ur gekcrkl gf 'r t gvt gcvo gpv''ci gpv'' vq''qr vko kt g''uwthceg''y gwcdkrkv{0'

Vj g"crrnkecvkqp"qh"r qy f gt"eqcvkpi "kwgnh"ku"c"r tgekukqp"ctv0"Gz gewwgf "y kyj "cp"gngevtquvcvke"ur tc{"i wp."vj ku"o gvj qf "kpxqnxgu" ko r ctvkpi "c"pgi cvkxg"ej cti g"vq"yj g"r qy f gt"r ctvkengu0"Vj gug"ej cti gf "r ctvkengu"ctg"yj gp"kttgukuvkdn("f tcy p"vq"yj g"r qukvkxgn(" ej cti gf "twthceg." et gcvkpi "c"o ci pgvke/rkng" cf j gukqp0" Vj g"twdugs wgpv" ugr "kpxqrxgu" vj g"o gnkpi "cpf "hwukqp" qh" vj gug"r ctvkergu." tguwnkpi 'kp'c'hrcy rguun('gxgp'eqckpi 0'

Qwt 'Eqo r cp{ 'ku'r tqo qvgf 'd{ 'O t0Lci lk/'Ukpi j 'F j kmqp'cpf 'O tu0P cxpggv'Mcwt0'

Ej cpi g'kp't gi kwgt gf 'qhhleg'qh'qwt 'Eqo r cp{'''

Vj g'tgi kngtgf 'qlthleg'qh'\j g'Eqo r cp{ 'y cu'ukwcyf 'cv'3; 9. 'F kco qpf 'I ctdqwt "Tqcf .'Dgj cn:".'Mqmcvc'/922256. "Y guv'Dgpi cn'' 421: 5168."Xkxgmcpcpf cr wt."Uqwj "46"Rcti cpcu."Vj cmwtr wmwt."O cj guvqrc."Mqmcvc" 6"922363."Y guv'Dgpi cn"Kpf kc"xkc" uj ctgj q
nf gtu'tguqnwkqp'f cvgf 'Lwn{ ''4: .''4245''hqt''qr gtcvkqpcn'ghhlekgpe
{ $0^{\prime\prime\prime}}$

Oclp'Qdlgewi'qh'qwt 'Eqorcp{''

Vj g'o ckp''qdlgew'qh'qwt'Eqorcp{ 'ctg'cu'hqmqy u<'''

 $Vq"ectt\{"qp"kp"kp'kp'kp'kp'kp' kc"qt"gnigy\ j\ gtg"vj\ g"dwikpguu"vq"o\ cpwhcewtg."rtqf\ weg."rtqeguu."gzecxcvg."s\ wctt\{."o\ gnx"o\ qwrf."tqm"left (left) for the control of the contro$ $eqo\ o\ gtekcn \not \ \ g."eqnf\ ."engcp."ewtg."tgcv."o\ kz."o\ cpkr\ wrcvg."r\ tgr\ ctg"cpf\ "vq"cev"cu"dtqmgt."ko\ r\ qtvgt."gzr\ qtvgt."dw \not \ gt."ugmgt."$ uvqemkmu." f kmtkdwqt." eqpvtcevqt." uwr r nkgt." o gvcmwti kmu." gpi kpggt." eqmcdqtcvqt." lqd" y qtmgt." qt" qvj gty kug" vq" f gcn" kp" cnvo kpkvo ."cnvo kpkvo "cmq{u."cnvo kpkvo "o gvcn"vpy tqvi j v"cnvo kpkvo ."cnvo kpkvo "y cuvg."cnvo kpkvo "uetcr ."cnvo kpkvo " hqknı."cnvo kpkvo "r qy f gtu."cnvo kpkvo "hrcmgu."cnvo kpkvo "uxtkr u."cnvo kpkvo "uj ggvu."cnvo kpkvo "y ktgu"y j gy gt"eqcvgf." wpeqcvgf."emf gf."r gthqtcvgf."r tkpvgf."go dquugf."kpuwrcvgf"cpf"cmfv{r gu"qhfugevkqpu."xctkgvkgu."uvtgpi vj u."ur gekhkecvkqpu." f guetkr wkqpu. 'f ko gpukqpu. 'cpf 'tij cr gu'qh'cnwo kpkwo 'r tqf wew. 'kpenwf kpi 'dctu. 'cpi rgu. 'wdgu. 'r kr gu'cpf 'drcpmu'tj gtgqh 'j qrrqy " dctu."eqpvckpgtu."uxtcpf gf "y ktgu."ecdrgu."eqtf ci g. "tqr gu."r rckgf "dcpf u."kpuwrcygf "grgevtke"y ktgu"("ecdrgu."grgevtqf gu."i cwi g." enq y gu."i tkmı."pgvkpi ."tgkphqtekpi "hodtkeu."ej okpu."poknı."vcemı."uvcr ngu."j qqmı."poknı."ur kngf "etco r u."uj kgnf u."ur kngu" cpf 'f tcy kpi 'r kpu. 'tkxgw. 'dwemgu. 'dqnw. 'pww. 'uetgy u. 'eqwgtu. 'eqwgt'r kpu. 'y cuj gtu. 'ur tkpi 'y cuj gtu. 'ur tkpi u. 'ucpkct { 'y ctgu. ' j ctfy ctg. "wygpuknu. "gngentqpke" i qqfu "cpf" qvj gt"cmkgf" kygo u. "vj gkt" r ctnu. "hknkpi u. "ceeguuqtkgu" ("eqo r qpgpnu. "cpf" vq" f q"cm" lpekf gpvcn'cew'cpf "vj kpi u'pgeguuct { 'hqt 'vj g'cwckpo gpv'qh'vj g'cdqxg'qdlgew'cpf 'vq'ectt { ''qp'cm'r tqeguugu'rkng'o gvcn'r tkpvkpi ." o gven'epqf kukpi ."enwo kpkwo "r qy f gt"eqevkpi ."gngevtq/r nevkpi ."ej go keen'vtgevo gpv'epf "nees wgt kpi "kp"tgur gevu"qh'r tqf wevu" o cpwhcewtgf "qt"f gcn/'y kj "d{ "tj g"Eqo r cp{0'

Vj g'o ckp'qdlgevu'cu'eqpvckpgf 'kp''y g'O qC "gpcdrg'qwt'Eqo r cp{ ''vq'ectt { "qp''y g'dwukpguu'r tgugpvn{ ''dgkpi ''ecttkgf ''qw''cpf ''y g'' cevkxkkgu'r tqr qugf "\q"dg"\vpf gt\cmgp"r wtuwcpv'\q"\j g"qdlgevu'qh'\j ku'Kuwg0'

Co gpf o gpw'vq'vj g'O go qt cpf wo 'qh'Cunqekcvlqp'''

Vj g'hqnqy kpi "co gpf o gpvu"j cxg"dggp"o cf g"vq"vj g'O go qtcpf wo "qh"Cuuqekcvkqp"qh"qvt "Eqo r cp{"ukpeg"kpeqtr qtcvkqp<"

Fevg'qh'tij et gj qrf gtøu'' t guqnwkqp''	P cwt g'thtco gpf o gpw'
"Lxn{ "4: ."4245"	Kpetgcug'kp'Cwyj qtkugf'Uj ctg'Ecrkwrk'



Fcvg'qh'lij ctgj qıf gtøt' tguqnvvlqp''	P cvvt g'qhico gpf o gpvu''
	Ercwug'X'qh'\\diggrig g'OqC'\y cu''co gpf gf '\q't ghgev\\j g'\pet gcug'\p'\j g''cw\j qt kugf '\uj ct g''ecr k\cn'qh'' qwt "Eqo rcp{"htqo" "32.22.222"f kx\f gf "\pvq"322222"Gs w\\ta\f"\Uj ct gu"qh' "32"gcej "\q" " 72.22.222'f kx\f gf '\pvq'722222'Gs w\\f '\Uj ct gu'\qh' '32'gcej " "
"Qevqdgt"46."4245"	Cngt c shap 'lp 'P c o g'Enc wig<'
	Ercwug"K'qh'vj g"OqC"y cu''co gpf gf "vq"ej cpi g"vj g"pco g"qh'vj g"Eqo rcp{"It qo ":Cuuqekcvgf" Eqcvgtu'Rt kxcvg"Nko kgf ø'vq":Cuuqekcvgf "Eqcvgtu'Nko kgf ø' 'vq"t ghgev'vj g"eqpxgtukqp"qh'qwt" Eqo rcp{"ht qo "c"rt kxcvg"hko kgf "eqo rcp{"vq"c"rwdnke"hko kgf "eqo rcp{0""
"F gego dgt"3: ."4245"	Kpetgcug'kp'Cwnj qthugf'Uj ctg'Ecrhocn<'
	Encwug'X'qhlij g'OqC''y cu''co gpf gf "iq't ghgev'ij g'hpet gcug'hp'ij g''cwij qt kugf 'lij ct g''ecr kwn'qhl' qwt "Eqorcp{"ht qo" "72.22.222"f kxlf gf "hpiq"722222"Gs wki{"Uj ct gu"qhl' "32"gcej "vq" " 4.22.22.222'f kxlf gf 'hpiq"4222222'Gs wki{"Uj ct gu''qhl' "32"gcej " "
F gego dgt '48. '4245"	Cngt c skap 'kp 'kj g'Qdlgev'ên: wug''
	F gngskqp"qh'und"en:wug"5*c+3+"qh'En:wug"KK'qh'vj g"O go qtcpf wo "qh'Cuuqekcskqp"qh'vj g" Eqo rcp{ 'uncvgf 'cu'dgnqy <"'
	õVq"vcng"qxgt lces wkt g"ij g"gzkiokpi "rtqrtkgvqtuj kr"lkto "CUUQE ICVGF"EQCVGTU"j cxkpi "ku'qllkeg"cv'3; 9. 'F ICO QPF" J CTDQWT"TQCF. 'DGJ CNC. 'MQNMCVC"/'922256. 'cu'c'i qkpi "eqpegtp"y kj "ku'cuugu. 'rtqrgt vkgu "hcdkiokgu"cpf 'qdrki cvkqpu'y kj "qt'y kj qwv'o qf llkecvkqp" cu'o c{'dg'f gelf gf 'wrqp'uwdlgev'vq'rc{o gpv'qh'Ucor"F wv{"cu'o c{'dg'crrnecdng0o"

EQTRQTCVG'RTQHKNG'QH'QWT'EQORCP["

Hqt"kphqto cvkqp"qp"qvt"Eqo r cp{øu"dwukpguu"r tqhkrg."cevkxkklgu."ugtxkegu."o cpci gtkcri'eqo r gvgpeg."cpf "ewuvqo gtu."ugg" ej cr vgtu"vkrgf ."õQwt"Dwukpguuö."õHkpcpekcri'Uvcvgo gpvu"cu"Tguvcvgf ö."cpf "õO cpci go gpvøu"F kuewuukqp"cpf "Cpcn{uku"qh" Hkpcpekcri'Eqpf kklqp"cpf "Tguvvnu"qh'Qr gtcvkqpuö"dgi kppkpi "qp"r ci g"; 5."359"cpf "362"tgur gevkxgn{ "qh'vj ku'F tchv'Rtqur gevwu0"

O CLQT'GXGPVUCPF'O KNGUVQPGU"

Vj g'\cdrg''dgrqy ''ug\u'hqt\yi ''uqo g''qh'\yi g''ng{ ''gxgp\u.''o krgu\qpgu''kp''q\ut''j ku\qt{ ''ukpeg'k\u'hpeqtr qtc\kqp0'''

[gct"	Gxgpw''
4239"	Kpeqtrqtckqp"qh'vjg"Eqorcp{"
4243"	Uctygf 'kw'Qr gtcykqpu''
4245"	Qwt 'Eqorcp{ 'hwt yi gt 'gzrcpf gf 'kwu'dwukpguu'qr gtc kqpu'd { 'uwct kpi 'pgy 'Eqc kpi 'Nkpg'qh'RXFH'
4245"	Qwt 'Eqorcp{'y cu'eqpxgtygf'htqo'Rtkxcyg'Nkokygf'eqorcp{'vq'Rwdnke'Nkokygf'Eqorcp{''
4245"	Eqorcp{"jcu"dggp"eqornkcpv'ykj"yjg"tgswktgogpv'qh<"HVQ"; 223<42370"

VKO G'CPF'EQUV'QXGTTWP'''

Qwt'Eqorcp{'jcu'pqv'gzrgtkgpegf'cp{'ukipkhecpv'vkog'cpf'equv'qxgttwp'kp'ugwkpi'vr'rtqlgevu0''

FGHCWNVUQT'TGUEJ GFWNRPI 'QHDQTTQY RPI U'Y KVJ 'HRP CPEKCN'RPUVKVWKQPUIDCPMU''

 $Cu''qh''f\ cvg''qh''vj\ ku''F\ tchv''Rtqur\ gewu. ''vj\ gtg''ctg''pq''f\ ghcwnu''qt''tguej\ gf\ wkpi\ ''qh''dqttqy\ kpi\ u''htqo\ ''hpcpekcn'hpuvkwwkqpu''qt''dcpmu''\ qt''eqpxgtukqp''qh''nqcpu''kpvq''gs\ wkw{''kp''tgncvkqp''vq''qwt''Eqo\ r\ cp{0'''}$

FGVCKNU' TGI CTFKPI " O CVGTKCN" CES WKUKVKQP" QT" FKKPXGUVO GPVU' QH' DWUKPGUU' 1' WPFGTVCMKPI U'O GTI GTU'CO CNI CO CVKQP'''

 $Qwt"Eqo\ r\ cp{"j\ cu"pqv"o\ cf\ g"cp{"dwulpguu"ces\ wkukklqp."o\ gti\ gt"cpf"co\ cni\ co\ cvkqp"qt"f\ kulpxguvo\ gpv"qh"dwulpguu"ulpeg"\ lpeqtr\ qtcvkqp0'$

"



TGXCNWCVIQP'QH'CUUGVU''

Qwt'Eqorcp{'j`cu'pgksj`gt'tgxcnwgf'ku'cuugwi'pqt'j`cu'kuuwgf"cp{'Gswkw{"Uj`ctgu'*kpenwfkpi "dqpwu'uj`ctgu+'d{"ecrkscnkikpi "cp{"tgxcnwcvkqp"tgugtxgu'kp'vj`g'ncuv'vgp"{gctu0"

J QNF IPI 'EQO RCP[""

..

UWDUNF KCTKGU'QH'QWT'EQO RCP["

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 $Cu''qp''yj\ g''f\ cvg''qh''yj\ ku''F\ tchv''Rtqur\ gewuu.''qwt''Eqo\ r\ cp\{''f\ qgu''pqv''j\ cxg''cp\{''uwdukf\ kctkgu0'''\ cvg''qh''yj\ ku''F\ tchv''Rtqur\ gewuu.''qwt''Eqo\ r\ cp\{''f\ qgu''pqv''j\ cxg''cp\{''uwdukf\ kctkgu0'''\ cvg''qh''yj\ ku''F\ tchv''Rtqur\ gewuu.''qwt''Eqo\ r\ cp\{''f\ qgu''pqv''j\ cxg''cp\{''uwdukf\ kctkgu0'''\ cvg''qh''yj\ ku'''F\ tchv''Rtqur\ gewuu.''qwt''Eqo\ r\ cp\{''f\ qgu''pqv''j\ cxg''cp\{''uwdukf\ kctkgu0'''\ cvg''qh''yj\ ku'''F\ tchv''Rtqur\ gewuu.''qwt''Eqo\ r\ cp\{''f\ qgu''pqv''j\ cxg''cp\{''uwdukf\ kctkgu0'''\ cvg''qh''yj\ ku'''F\ tchv''Rtqur\ gewuu.''qwt''Eqo\ r\ cp\{''f\ qgu''pqv''j\ cxg''cp\{''uwdukf\ kctkgu0'''\ cvg'''qh''yj\ ku'''F\ tchv''Rtqur\ gewuu.''qwt''Eqo\ r\ cp\{''f\ qgu''pqv''j\ cxg''cp\{''uwdukf\ kctkgu0'''\ cvg'''qh''yj\ ku''' cyg''' cyg'''qh''yj\ ku''' cyg''' cyg'''' cyg''' cyg'''' cyg''' cyg''' cyg''' cyg''' cyg''' cyg''' cyg''' cyg''' cyg'''' cyg''' cyg''' cyg''' cyg''' cyg''' cyg''' cyg''' cyg''' cyg'''' cyg''' cyg''' cyg''' cyg''' cyg''' cyg''' cyg''' cyg''' cyg'''' cyg''' cyg''' cyg''' cyg''' cyg''' cyg''' cyg''' cyg''' cyg'''' cyg''' cyg''' cyg''' cyg''' cyg''' cyg''' cyg''' cyg''' cyg'''' cyg''' cyg''' cyg''' cyg''' cyg''' cyg''' cyg''' cyg''' cyg''''$

CUUQEKCVG'QT'LQKPV'XGPVWTGU'QH'QWT'EQORCP["

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 $Cu'qp''y g''f cvg''qh''y ku'F tchv'Rtqur gewu. "qwt'Eqo r cp{ "fqgu''pqv' j cxg''cp{ "lqkpv'xgpwtgu''qt "cuuqekcvg''eqo r cpkgu0''' lqkpv'xgpwtgu''qt "cuuqekcvg''eqo r cpkgu0''' lqkpv'xgpwtgu''qt "cuuqekcvg''eqo r cpkgu0''' lqkpv'xgpwtgu''qt "cuuqekcvg''eqo r cpkgu0''' lqkpv'xgpwtgu''qt "cuuqekcvg''eqo r cpkgu0'''' lqkpv'xgpwtgu''qt "cuuqekcvg''eqo r cpkgu0''' lqkpv'xgpwtgu''qt "cuuqekcvg''' lqkpv'xgpwtgu''qt lqkpv'xgpwtgu'' l$

UVTCVGI KE'CPF'HKPCPEKCN'RCTVPGTU''

"

Cu''qp''f cvg''qh''yj ku'F tchv'Rtqur gewu''qwt 'Eqo r cp{ 'f qgu'pqv'j cxg''cp{ 'uvtcvgi ke''cpf 'hkpcpekcn'r ct ypgtu0'''

UJ CTGJ QNFGTUCPF'QVJ GT'CI TGGO GPVU"

"

Vj gtg"ctg"pq"uj ctgj qrf gtu"cpf "qvj gt"o cvgtkcri'ci tggo gpvu. "cr ctv'htqo "vj qug"gpvgtgf "kpvq"kp"vj g"qtf kpct { "eqwtug"qh'dwukpguu"" ecttkgf "qp"qt"kpvgpf gf "vq"dg"ecttkgf "qp"d{ "wu0""

CI TGGO GPVU'Y KVJ 'MG[''O CPCI GTKCN'RGTUQPPGN''QT''C''FKTGEVQT''QT''RTQO QVGTU'QT''CP['' QVJ GT'GO RNQ[GG'QH'VJ G'EQO RCP[''

 $\label{thm:continuous} Vj\ gtg"ctg"pq"ci\ tggo\ gpw"gpvgtgf "kpvq"gzegr v'kp" ij\ g"qtf kpct { "eqwtug"qh"dwukpguu"d { "c"Mg{ "O\ cpci\ gtkcn"Rgtuqppgn"qt"F ktgevqt" qt "Rtqo\ qvgtu"qt"cp{ "qvj\ gt"go\ r\ m{ gg"qh"qwt"Eqo\ r\ cp{ ."gkj\ gt"d{ "vj\ go\ ugmxgu"qt"qp"dgj\ crh"qh"cp{ "qvj\ gt"r\ gtuqp."y\ kj "cp{ "uj\ ctgj\ qrf\ gt"qt"cp{ ."qvj\ gt"vj\ ktf "r\ ctv{ "y\ kj "tgi\ ctf"vq"eqo\ r\ gpucvkqp"qt"rtqhkv"uj\ ctkpi "kp"eqppgevkqp"y\ kj "f\ gcrkpi\ u"kp"vj\ g"ugewtkkgu"qh"qwt"Eqo\ r\ cp{ .0"}$

I WCTCPVGGUI KXGP'D['RTQOQVGTUQHHGTKPI 'KVUUJ CTGUKP'VJ G'QHHGT'HQT'UCNG"

Vj ku'ku'c'htguj 'kuwg'qh'Gs wkx{ 'Uj ctgu'cpf 'qwt'Rtqo qygtu'ctg'pqv'qhhgtkpi ''yj gkt''uj ctgu'kp''yj ku'Kuwg0'''

O CVGTICN'CI TGGO GP VU''

"

Cu'qp''y g'f cvg'qh''y ku'F tchv'Rtqur gewu. 'qwt'Eqo r cp{'j cu'pqv'gpvgtgf 'kpvq'cp{"o cvgtkcn'ci tggo gpvu'qvj gt''y cp'kp''y g'qtf kpct{" eqwtug"qh''dwukpguu"ecttkgf "qp"d{"qwt"Eqo r cp{0'Hqt"f gvcknu''qp"dwukpguu"ci tggo gpvu''qh''qwt"Eqo r cp{."r rgcug''tghgt"vq"'y g" ugevkqp"\kurgf "::Qwt"Dwukpguuy'dgi kppkpi "qp"r ci g"; 5'qh''y ku'F tchv'Rtqur gewuv0'



QWI'O CPCI GO GPV"

QWT'DQCTF'QHFKTGEVQTU"

 $\label{thm:linear} \mbox{Ugv$hqty$' "dgmy"."ctg" f gvcknu"tgi~ctf kpi~"qwt" Dqctf~"cu"qp" yi~g" f cvg"qh' yi~ku"F~tchv'Rtqur~gewuc'''$}$

Pcog.'FkP.'Fcvg'qhlDktvj.'Fguki pcvkqp.'Cfftguu.'' Qeewrcvkqp.'Vgto'cpf'Pcvkqpcnkv{''	Ci g'' *{ gct u+''	Qyj gt 'Fkt gewqt uj kr u''
Ot0Lci lk/Upi j 'F j kmp''	'65"	Eqo rcplgu'
F IP <29; : 2663"		Okpfjkijyc{" Vgejpqnqikgu" Rtkxcvg" Nkokgf"
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S workheckqp <dcej grqt"qh'eqo="" gteg'"<="" o="" td=""><td></td><td>" P ktl'</td></dcej>		" P ktl'
F guki pcvkqp<'O cpci kpi 'F ktgevqt'''		n n
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Vgto <"Hqt"c"r gtkqf "qh"hkxg"*7+" { gctu"y kj "ghhgev"htqo "; ^{vj} " F gego dgt"4245"vq": ^{vj} "F gego dgt"424: "		
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P cykqpcrkv{ < Kpf kcp'''		
O t 0 J c t dj c l c p 'Upi j vj gvj K'	78"	Eqo rcplgu"
F IP <3263867; "		P kti'
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S workheevkqp<"KZ ^{ij} "Uvcpf ctf"		P kti'
F guki pcvkqp<"Y j qng"Vko g"F ktgevqt"cpf "Ej ckto cp"		
Cfftguu<" 3; ; ." Fko qpf" J ctdqwt" O cpf cri' Rctc" Mqmcvc" 922256."Y guv'Dgpi cn"Kpfkc"		
Qeewr cwlqp<'Dwukpguu'''		
Vgto <"Hqt"c"r gtkqf "qh"hkxg"*7+" { gctu"y kj "ghhgev"htqo "; 'j" F gego dgt"4245"\q": 'j "F gego dgt"424: "		
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P cylaperky (Kpf kep'''		
OtuOP expggv'Mewt''	68"	Eqo replgu"
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Pco g.'F IP.'Fcvg'qh'Dlt vj.'Fguli pcvlqp.'Cf f t guu.'' Oeewr cykm.'Vgto 'cpf 'Pcvkmcdw''	Ci g'' *{ gct u+''	Qvj gt 'Fkt gevqt uj kr u''
Qeewrcvkqp.'Vgto''epf'Pcvkqpcrkv{" Fcvg'qh'Dktyj'_Lcpwct{"23."3; 99"" " Swcrkthecvkqp <dcej "="" '224434662"="" 'cwi="" 'fktgevqt'ukpeg'fgego="" 'nkcdrg''q'tgvktg''d{'tqvcvkqp"="" 3;="" 9."="" 922256."y="" cfftgux''="" crc".mqmevc"="" cri."kpfkc"="" dgj="" dgt''44."4239"="" fcvg''qh'dktyj="" fguki="" fko="" fkp="" grqt'qh'uelgpeg"="" guv'dgpi="" gzgewkxg'fktgevqt"="" jctdqwt"="" kr="" ouffgypc'i="" pcvkqp<pqp="" pcvkqpcrkv{'kpfkcp'''="" qeewrcvkqp<dwukpguu"="" qpf"="" rgtkqf"qh'fktgevqtuj="" td="" tqcf"="" vgto="" wrwc''="" ww'36."3;:9"<=""><td>*{gctu+''</td><td>" Nko ksgf 'Nkcdkks{ 'Rct vpgt uj kr u' " P ki' " " " Eqo r cpkgu' " Lwkgp'Ci tq'Kohtevgej 'Nko ksgf " " Nko ksgf 'Nkcdkks{ 'Rct vpgt uj kr u'</td></dcej>	*{gctu+''	" Nko ksgf 'Nkcdkks{ 'Rct vpgt uj kr u' " P ki' " " " Eqo r cpkgu' " Lwkgp'Ci tq'Kohtevgej 'Nko ksgf " " Nko ksgf 'Nkcdkks{ 'Rct vpgt uj kr u'
"S werkhkeevkqp<" Hgmqy "O go dgt" qh" KEUK" O DC" kp" J wo cp" Tguqwtegu0' "F guki pevkqp<"Cff kskqpen"Kpf gr gpf gpv"F ktgevqt" "Cfftguu<" 47" Ej kpct" Retm" F gukp { "Vqy gt." Hrev" P q" 7" D." Mqmreve"922379."Y guv"Dgpi en". "Kpf ke" "Qeewr evkqp<"Rtqhguukqpen" "Vgto <"Vkm" yj g"Cppwen'I gpgten'O ggvkpi "vq"dg" j gnf "qp"qt" dghqtg"52 ^{yj} "Ugr vgo dgt"42460' "Rgtkqf" qh" F ktgevqtuj kr <" Cff kskqpen' F ktgevqt" ukpeg" 9 ^{yj} " F gego dgt"4245" "P evkqpenkv{ <"Kpf kep"" "		Y qy 'Qti cple'NNR'" " "
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Pco g.'FkP.'Fcvg'qh'Dktvj.'Fguki pcvkqp.'Cfftguu.''	Ci g''	Qvj gt 'Fkt gevqt uj kr u' '
Qeewrcvkqp.'Vgto 'cpf 'Pcvkqpcnks{ ''	*{ gct u+''	
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OtOJ ctdj clcp'Upi j vj gvj k'ci gf "78" { gctu0'J g"ku'ce-kxgn("kpxqnxgf "kp"rtqxkf kpi "xctkqwu"vtckpkpi "uguukqpu"vq"y qtngtu"vq" kpetgcug" ghhekgpe { 0' J g" r quuguugu" gzegngpv' vko g" o cpci go gpv' unkmı." vqr " ewuvqo gt" tgrcvkqpu" cdkrkkgu" cpf " uvtqpi " eqo o wpkec-kqp"unkmı0'J g"j cu"cuukuvgf "kp"guvcdrkuj kpi "rtqlgevu."o qpkvqtkpi "vj g"rtqi tguu"qh'vj g"rtqlgevu"cpf "eqo r ngvkpi "vj g" rtqlgevu"y kyj kp"f gcf rkpgu0'J g"y cu"crrqkpvgf "cu"Y j qng"Vko g"F ktgevqt"cpf "Ej ckto cp"qh'vj g"Eqo r cp{ "y Q00'F gego dgt"; ." 42450'

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Ut 0P q''	Pco g'qh'yj g'Fkt gewqt IMO R''	Pco gʻqhʻyj gʻFktgevqt''	Tgrevkqpuj kr''
30'	Ot0'Lci lk/'Ukpi j 'Fj kmpp''	O tu0P cxpggv'Mcwt"	Ur qwug"
40'	O tu0P cxpggv'Mcwt"	Ot0Lcilk/Ukpij'Fjkmqp"	Ur qwug"

- Vj gtg"ctg"pq"cttcpi go gpw"qt"wpf gtuvcpf kpi "y kj "o clqt"uj ctgj qrf gtu."ewnqo gtu."uwr r nkgtu"qt "qvj gtu."r wtuwcpv"vq"y j kej "cp{"qh"yj g"F ktgevqtu."Mg{"O cpci gtkcn"Rgtuqppgn"qt"Ugpkqt"O cpci go gpv"y gtg"ugrgevgf "cu"c"F ktgevqt"qt"O go dgt"qh"Ugpkqt"O cpci go gpv"y gtg"ugrgevgf "cu"c"F ktgevqt"qt"O go dgt"qh"Ugpkqt"O cpci go gpv"y gtg"ugrgevgf "cu"c"F ktgevqt"qt"O go dgt"qh"Ugpkqt"
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 Hwi kxkxg''Geqpqo ke''Qhhgpf gtu''Cev.''423: 0'



- Cu'qp" iy g"f cvg"qh' iy ku'F tch/"Rtqur gewu. "pqpg"qh'qwt "f ktgevqt"ku"qt "y cu'c "f ktgevqt "qh'cp { "rkurgf "Eqorcp { "f wtkpi "y g'rcuv" 7'*hksg+"{gctu'r tgegf kpi 'kj g'f cvg'qh'vj kı'F tchv'Rtqur gewu.'y j qug'uj ctgu'j cxg'dggp'qt''y gtg'uwur gpf gf 'htqo 'dgkpi '\tcf gf'' qp"vj g"Uvqem"Gzej cpi g*tı+: "f wtkpi "vj g"vgto "qh"vj gkt "f ktgevqtuj kr "kp"uwej "Eqo r cp{0"
- Cu'qp''y g'f cvg'qh''y ku'F tchv'Rtqur gewu."pqpg'qh'qwt'f ktgevqt'ku'qt'y cu'c'f ktgevqt'qh'cp{'rkkrgf 'Eqo r cp{'y j kej 'j cu'dggp'' $qt'y\ cu'f\ grkurgf\ 'htqo\ 'cp{\ 'uvqem'gzej\ cpi\ g'f\ wtkpi\ ''y\ g''ygto\ ''qh''y\ gkt''f\ ktgevqtuj\ kr\ 'kp''uwej\ ''Eqo\ r\ cp{\ }0'' \ g''ygto\ ''qh''y\ gkt''f\ ktgevqtuj\ kr\ ''kp''uwej\ ''Eqo\ r\ cp{\ }0'' \ g''ygto\ ''qh''y\ gkt''f\ ktgevqtuj\ kr\ ''kp''uwej\ ''Eqo\ r\ cp{\ }0'' \ g''ygto\ ''qh''y\ gkt''f\ ktgevqtuj\ kr\ ''kp''uwej\ ''Eqo\ r\ cp{\ }0'' \ g''ygto\ ''qh''y\ gkt''f\ ktgevqtuj\ kr\ ''kp''uwej\ ''Eqo\ r\ cp{\ }0'' \ g''ygto\ ''qh''y\ gkt''f\ ktgevqtuj\ kr\ ''kp''uwej\ ''Eqo\ r\ cp{\ }0'' \ g''ygto\ ''qh''y\ gkt''f\ ktgevqtuj\ kr\ ''kp''uwej\ ''Eqo\ r\ cp{\ }0'' \ g''ygto\ ''qh''y\ gkt''f\ ktgevqtuj\ kr\ ''kp''uwej\ ''Eqo\ r\ cp{\ }0'' \ g''ygto\ ''qh''y\ gkt''f\ ktgevqtuj\ kr\ ''kp''uwej\ ''Eqo\ r\ cp{\ }0'' \ g''ygto\ ''qh''y\ gkt''f\ ktgevqtuj\ kr\ ''kp''uwej\ ''Eqo\ r\ cp{\ }0'' \ g''ygto\ ''qh''y\ gkt''f\ ktgevqtuj\ kr\ ''kp''uwej\ ''Eqo\ r\ cp{\ }0'' \ g''ygto\ ''qh''y\ gkt''f\ ktgevqtuj\ kr\ ''kp''uwej\ ''Eqo\ r\ cp{\ }0'' \ g''ygto\ ''qh''y\ gkt''f\ ktgevqtuj\ kr\ ''kp''uwej\ ''Eqo\ r\ cp{\ }0'' \ g''ygto\ ''qh''y\ gkt''f\ ktgevqtuj\ kr\ ''kp''uwej\ ''Eqo\ r\ cp{\ }0'' \ g''ygto\ ''qh''y\ gkt'' \ g''ygto\ ''qh''y\ gkt''ygto\ ''qh''ygto\ ''qh''ygto$
- Cu'qp'y g'f cvg'qh'y ku'F tchv'Rtqur gewu. 'pqpg'qh'y g'Rtqo qvgtu. 'Rgtuqpu'hqto kpi 'r ctv'qh'qwt 'Rtqo qvgt'I tqwr . 'F ktgevqtu' $qt"r\ gtuqpu"lp"eqpvtqn"qh"qwt"Eqo\ r\ cp\{."j\ cu"dggp"qt"lw"lpxqnxgf\ "cu"c"r\ tqo\ qvgtu."f\ ltgevqt"qt"r\ gtuqp"lp"eqpvtqn"qh"cp\{"qvj\ gt"lp"eqpvtqn"qh"cp{"qvj\ gt"lp"eqpvtqn"qh"cp"qvj\ gt"lp"eqpvtqn"qh"cp{"qvj\ gt"lp"eqpvtqn"qh"cp"qh"$ tgi wrcvqt { 'cwyj qtkv{ 0'
- Pq"rtqeggf kpi u"Tkpxguki cykqpu"j cxg"dggp"kpkkcygf "d{ "UGDKci ckpuv"cp{ 'Eqo rcp{. "vj g"Dqctf "qh'Fktgevqtu"qh'y j kej "cnuq" eqo r tkugu'cp{ ''qh''yj g'F ktgevqtu''qh'qwt''Eqo r cp{0'

TGO WPGTCVKQP'TEQO RGPUCVKQP'VQ'QWT'FKTGEVQTU''

Vj g"eqo r gpucvkqp"r c{cdrg"vq"qwt"F ktgevqtu"y km'dg"i qxgtpgf "cu"r gt"yj g"vgto u"qh"vj gkt"cr r qkpvo gpv'cpf "uj cm'dg"uwdlgev'vq" $\label{eq:control_co$ qyj gt "cr r rlecdrg"r tqxkulqpu. "kh"cp{ "qh"yj g"Eqo r cpkgu"Cev."4235"tgcf "y kyj "Uej gf wrg"X"vq"yj g"Eqo r cpkgu"Cev."4235"cpf "yj g" $Eqo\ r\ cpkgu''Cev."3;\ 78."hqt"vj\ g"vko\ g"dgkpi\ "kp"hqteg-0'Ugv'hqtvj\ "dgnqy\ "ku"vj\ g"tgo\ wpgtcvkqp"r\ c\{cdng"d\{"qwt"Eqo\ r\ cp\{"vq"qwt"legner to the constraint of the constraint of$ Fktgevqtu'hqt'c'hkpcpekcn'{gct<

'* 'kp'hcmj u+'

Ut 0P q0'	Pco g'qhFktgevqt''	Tgo wpgt cwlqp'tij cmlþqv'gzeggf ''
30'	Ot0Ici lk/Ukpi j "Fj kmpp"	; 082, "
40'	Ot0J ctdj clcp"Ukpi j vj gvj k"	6022, "
"""	Vqwd'	35@2"

[,] gzennf kpi ''y g'r gt s wkuksgu''cpf ''cmqy cpegu0'

Tgo wpgtc\kqp"r ckf "hqt"H["4244/4245="\u00edy g"f ktgevqtu"\u00ed cxg"dggp"r ckf "i tquu'tgo wpgtc\kqp"cu'hqmqy u<"

'* 'kp'hcmj u+''

Ut OP qO'	Pco g'qhFhtgevqt''	Tgo wpgtcvkqp'rclf''
30'	Ot0Ici lk/Ukpi j "Fj kmpp"	32@2"
40'	OtOJ ctdj clcp"Ulpi j vj gvj k"	P0C0 "
""	Vqvcn'	32@2"

[,] Ot0I ctdj clcp'Upi j vj gvj k'y cu'crrqkpvgf ''qp'F gego dgt'2; .''42450'

Vgt o u'Cpf 'Eqpf kskqpu'Qh'Gorm(o gpv'qh'Qwt 'Fktgevqtu''

Ot0Lcilk/Upij'Fjkmp'''

Ot0Lcilk/Upij 'Fjkmpp.'ku'\jg'Rtqoqvgt'cpf'Ocpcikpi'Fktgevqt'qh'qwt'Eqorcp{0Ig'ku'\jg'Fktgevqt'qh'\jg'Eqorcp{'ukpeg'' Kpeqtrqtcvkqp"qh'vjg"Eqorcp{0Jg"ycu"ncvgt"fgukipcvgf"cu"Ocpcikpi"Fktgevqt"ykjg"ghhgev'htqo"; ^{ij} "Fgegodgt"4245"hqt"c" r gtkqf "qh'7"*hkxg+"{ gctu'km': 'j 'F gego dgt''424: 0Vj g'uki pkhecpv'\gto u'qh'j ku'go r m{ o gpv'ctg''cu'dgmy <''

Tgo wpgtcwqp"	"; 082 'hcnj u'r gt 'cppwo '"'
Dqpwdcpf 'Rtqhw/uj ctlpi 'Tcvlq''	P qv'Cr r rlecdrg"
Vgto "	Crrqkpvgf "cu"Ocpci kpi "Fktgevqt"qh"vj g"Eqorcp{"hqt"c"rgtkqf "qh"7"*hkxg+"{gctu"
	eqo o gpekpi 'htqo "; ^y 'F gego dgt '4245' \km'; ^y 'F gego dgt '424: 0'
Tgo wpgt cwqp'lp'vj g'gxgpv'qh'hquu'	Kp"yj g"gxgpv"qh"kpcf gs wce{ "qt"cdugpeg"qh"r tqhku"kp"cp{ "hkpcpekcn"{gctu"f wtkpi "j ku"
qt 'kpcf gs wce{ 'qhh't qhku''	vgpwtg."vjg"Fktgevqt"ykm"dg"rckf"tgowpgtcvkqp"cu"ogpvkqpgf"kp"Uejgfwrg"X"cu"
	oc{"dg"crrtqxgf"d{"\jg"Ujctgjqnfgtu"qh"\jg"Eqorcp{0"

OtOJ ctdj clcp'Upi j vj gvj k'

 $O t0 J ctdj clcp "Ukpi j vj gvj k"ku" vj g"Y j qrg "Vko g"F ktgevqt" qh" vj g"Eqo r cp \{0 J g" y cu" cr r qkpvgf "cu" c" Y j qrg "Vko g"F ktgevqt" qh" vg g" Eqo r cp \{0 J g" y cu" cr r qkpvgf "cu" c" Y j qrg "Vko g" F ktgevqt" qh" vg g" v$ yj g"Eqo r cp{"y kjj "ghhgev"htqo ''; ^yj "F gego dgt"4245"hqt"c"r gtkqf "qh"7"*hkxg+"{gctu"vkm': ^yj "F gego dgt"424: 0'Vj g"uki pkhkecpv" vgto u'qh'j ku'go r nq{o gpv'ctg''cu'dgnqy <'



Tgo wpgt cvkqp''

Dqpwu'cpf 'Rt qhk/uj ct lpi 'T cvkq''

Pqv'Crrnkecdg"

Vgto ''

Crrqkpvgf "cu''Y j qrg'Vlo g'F kt gevqt "qh''y g'Eqorcp{ "hqt"c'r gtkqf "qh'7"*hkxg+"{ gctu" eqo o gpekpi "htqo "; y "F gego dgt "4245" km!; y "F gego dgt "424: 0'

Tgo wpgt cvkqp'lp'vj g'gxgpv'qh'hquu'

qt'lpcf gs wce{ 'qhi't qhku''

ypwtg."'y g"F kt gevqt"y km'dg"rckf "tgo wpgtcvkqp"cu"o gpvkqpgf "lp"Uej gf wg"X"cu" o c{ "dg"crrtqxgf"d{ "y g"Uj ctgj qnf gtu'qh'y g"Eqorcp{0'

UKVVIPI 'HGGU''

Vj g'r c{o gpv'qh'ukwlpi 'hggu'\q'ij g'Kpf gr gpf gpv'F ktgevqtu'qh'\j g'Eqo r cp{ 'hqt'cwgpf kpi '\j g'o ggvkpi ''qh'\j g'Dqctf ''qh'F ktgevqtu'' cpf ''o ggvkpi u''qh'\j g'Eqo o kwggu''qh'\j g'Dqctf ''qh'F ktgevqtu''kp'hqmqy kpi ''o cppgt<''

Ut OP qO'	Pco g'\dHFktgevqt''	Hggu'hqt 'c wgpf lpi 'vj g'o ggvlpi 'qh'	
		Dqctf 'qhlFktgevqtu''	Eqo o kwgg'O ggwpi u''
30'	Ou0Ej gypc'I wrvc''	'32.2221/'r gt'O ggvkpi "	"32.2221/"r gt "O ggvkpi "
40'	OtOLc{"Mwoct"Ujcy"	"32.2221/"r gt "O ggvkpi "	"32.2221/"r gt "O ggvkpi "
50'	O tu0P cxpggv'Mcwt"	"32.2221/"r gt "O ggvkpi "	"32.2221/"r gt "O ggvkpi "

DQTTQY IPI 'RQY GTUQH'QWT'DQCTF'''

Qwt'Ctvkergu'qh'Cuuqekcvkqp. 'uwdlgev'q'cr r necdug'rcy .'cwj qtk g'qwt'Dqctf 'vq'tckug'qt'dqttqy 'o qpg{ 'qt'ugewtg'yj g'r c{o gpv' qh'cp{ 'uwo 'qh'o qpg{ 'lqt'yj g'r wtr qugu'qh'qwt'Eqo r cp{0Rwtuwcpv'vq'c'tguqnwkqp'r cuugf 'd{ 'qwt 'uj ctgj qrf gtu'cv'yj gkt'Gz vtc' Qtf kpct{ 'I gpgtcn'O ggvkpi 'j grf 'qp'F gego dgt'48.'4245.'qwt'uj ctgj qrf gtu'j cxg'cwj qtk gf 'qwt'Dqctf 'vq'dqttqy 'cp{ 'uwo 'qh' o qpg{ "htqo "vko g'vq'vko g'pqw kyj uvcpf kpi "vj cv'yj g''uwo "qt''uwo u''uq'dqttqy gf "vqi gyj gt''y kyj "yj g''o qpkgu. "kh'cp{."crtgcf { 'dqttqy gf "d{ 'vj g'Eqo r cp{ '*cr ctv'htqo "vgo r qtct { 'mqcpu'qdvckpgf "htqo "vj g'Eqo r cp{ \phi u''dcpngtu''kp''yj g''qtf kpct { "eqwtug'qh'' dwukpguu+"gzeggf 'vj g'' ckf 'wr 'ecr kcn'cpf 'htgg'tgugtxgu'qh'yj g'Eqo r cp{ 'r tqxkf gf 'uwej 'co qwpv'f qgu'pqv'gzeggf " '322'etqtgu'' qxgt"cpf "cdqxg"yj g''ci i tgi cvg''qh''yj g''r ckf 'wr "uj ctg''ecr kcn'cpf "htgg''tgugtxgu''y j kej "o c{ "j cxg''pqv'dggp''ugv'cr ctv'hqt''cp{ 'r wtrqugO'

UJ CTGJ QNFKPI 'QHFKTGEVQTUKP'QWT'EQORCP["

Qwt "Ct vlergu"qh" Cuuqekc vlqp" if q"pqv" tgs wkt g"qwt "Fktgevqtu" vq" j qrf "s wcrkhlec vlqp" uj ct gu0"

Cu'qp'fcvg'qh'vjku'Ftchv'Rtqurgewu."qwt'Fktgevqtu'jqnf'vjg'hqnnqykpi'pwodgt'qh'Gswkv(''Ujctgu'qh'qwt'Eqorcp{<"

Ut OP qO'	Pco g'qhFktgevqtu''	Rt g/Kuwg'P q0'qh'Gs wls{ ''	' 'qh'rtg/Kanvg'ecrlscn'
		Uj ct gu'J grf ''	
30 '	Ot0Lci lk/Upi j 'Fj kmp"	8.3; .: 36"	88087' "
40 '	O tu0P cxpggv'Mcwt"	5.32.222"	55\&5' "
50 '	Ou0Ej gypc'I wrvc"	P K V'	P KN"
60 '	Ot0Lc{ 'Mwo ct'Uj cy "	P kď	P kri'
70 '	OtOJ ctdj clcp"Ukpi j vj gvj k"	P kri'	P kti'

Uj ct gj qnf kpi 'Qh'F kt gevqt u'Kp'Qwt 'Uwdukf kct kgu''

IP VGTGUV'QH'QWT'F KTGEVQTU''

Qwt'Gzgewkzg'Fktgevqtu'oc{"dg''f ggo gf "vq''dg''kpvgtguvgf "vq''yj g"gzvgpv'qh'tgo wpgtcvkqp''rckf "vq''yj go "hqt''ugtxkegu'tgpf gtgf" cu'c'Fktgevqt''qh''qwt''Eqorcp{"cpf 'tgko dwtugo gpv'qh'gzrgpugu. 'kh''cp{.'rc{cdrg''vq''yj go 0'Hqt''f gvckru''qh'tgo wpgtcvkqp''rckf''vq'' qwt''ugg''ö*Vgto u'qhltrrqkpw gpv'tpf 'tgo wpgtcvkqp'qh'qwt'Gzgewkxg'Fktgevqtu*ö''cdqxg0'''

...



 $Qwt"Fktgevqtu"oc{"cnu"dg"kpvgtguvgf"vq"ijg"gzvgpv"qh"Gswkx{"Ujctgu."kh"cp{."jgnf"d{"ijgnf"d{"ijgnf"d{"ijgngvkkgu"kp"yjkg" yjkg" vjg{"ctg"cuvqekcvgf"cu"rtqoqvgtu."fktgevqtu."rtqrtkgvqtu"qt"kwvvggu"qt"hctvcu"qt"eqrctegpgtu"qt"jgnf"d{"ijgnkkgu" vkzgu"qt"ijcv"oc{"dg"hvduetkdgf"d{"qt"cmqwgf"vq"ijg"eqorcpkgu."hktou."xgpwkgu."kwvu"kp"yjkej"vjg{"ctg"kpvgtguvgf"cu"rtqoqvgtu."fktgevqtu."rtqrtkgvqtu."ogodgtu"qt"kwvvggu."rwvvggv."hktou."xgpwkgu."kwvvg0Czegrv"cu"fkuenqugf"kp"ö<math>H$ pcpekcnKphqtocvkqp"o"cpf"õQwt'Rtqoqvgtu"bpf'Rtqoqvgt"Itqwr"o"dgikppkpi"qp"Rcig"359"cpf"353"."tgurgevkxgn{."qh"ijku"Ftchv"Rtqurgewu."qwt"Fktgevqtu"ctg"pqv"kpvgtguvgf"kp"cp{"qijgt"eqorcp{."gpvkx{"qt"hkto0""}}}

Hwt yi gt. "qwt "Fkt gevqtu"ct g "kpvgt guvgf "kp" yi g "r tqr gt vkgu" qh "qwt "Eqo r cp {. "hqt "f gvcktu"r ngcug" ugg "õQwt 'Dwukp guu' 'Ncp f'cp f''Rt qr gt v{ \ddot{o} " qp "r ci g; 50'

Gzegr v'cu'uvcvgf "kp"õ*Tguw vgf 'HhpcpekcnlKphqto cvkqp''/'Cppgz wtg'b'b'Uli plilecpv'Ceeqwpvkpi 'Rqnkelgu'cpf 'Gzrncpcvqt{''} Pqygu'iq'ij g'Tguw vgf 'HhpcpekcnlUw vgo gpvu*ö"dgi kppkpi "qp"Rci g\(0.859'\text{qh''vj ku'Ftchv'Rtqur gewu. "qwt "Fktgevqtu'fq"pqv'j cxg" cp{"qvj gt'kpvgtguv'kp"vj g'dwukpguu'qh'qwt "Eqo r cp{0"

Kpvgt guv'Cu'Vq'Rt qr gt v{ '''

 $Gzegr \ v'cu''f \ kwenqugf 'kp''y \ ku''F \ tchv'Rtqur gewu. ''qwt''F \ ktgevqtu''f \ q''pqv'y \ cxg''cp{ ''kpvgtguv'kp''cp{ ''r tqr gtv{ ''ces wktgf ''qt''r tqr qugf ''vq'' dg''ces wktgf ''d{ ''qwt''Eqo r cp{ ''qt''qh'qwt'Eqo r cp{ 0'''}}}$

Dqpwu'Qt 'Rt qllw'Uj ct lpi 'Rrcp'Hqt 'Qwt 'F lt gevqt u'''

, -

Pqpg"qh"qwt"Fktgevqtu"ctg"c"rctv{"vq"cp{"dqpwu"qt"rtqhkv"ujctkpi "rncp0""

Rqrkelgu'Cf qr vgf 'd{ 'vj g'Eqo rcp{ ''

"

Vjg'Eqorcp{'jcu'cfqrvgf'vjg'hqmqykpi'rqnkekgu<"

- 'Rqrke{'hqt'Eqf g'qh'Eqpf wev'hqt'Rtgxgpvkqp'qh'Kpukf gt'Vtcf kpi "
- Rqrke { 'hqt 'Eqf g'qh'Rtcevkeg'cpf 'Hckt 'F kuerquwtg''
- Hoo knotk cvkqp"Rtqi too o gu'hqt"Kpf gr gpf gpv'F ktgevqtu"
- Rtgxgpvkqp"qh"Ugzwcn'J ctcuuo gpv"Rqnle{"
- Rqrke { 'hqt 'f gygto kpcykqp'qh'O cygtkcri'Gx gpviF kuenquwt g''
- Rqrke{ 'hqt 'Rtgugtxcvkqp''qh'F qewo gpvu''
- Rqrke{ "qp 'Ctej kxcn'qh'F qewo gpw"
- Eqf g'Qh'Eqpf wev'hqt 'F ktgevqtu'cpf 'Ugpkqt 'O cpci go gpv'
- Crrqkpvo gpv'qh'Kpf gr gpf gpv'F ktgevqtu'cpf 'Eqf g'qh'Eqpf wev'
- Rqrke{ "hqt"O cvgtkcrkv{ "qt"tgrcvgf "r ctv{ "vtcpucevkqpu"
- Tkum'O cpci go gpv'Rqnke{"

Ej cpi gu'Kp'Qwt'Dqctf 'Fwtkpi 'Vj g'Ncuv'Vj tgg'[gctu'''

"

Gzegr v'cu'f kvenqugf 'dgnqy .''yj gtg''j cxg''dggp''pq''ej cpi gu'kp''qwt''Dqctf 'f wtkpi ''yj g''rcuv''yj tgg''{ gctu0'''

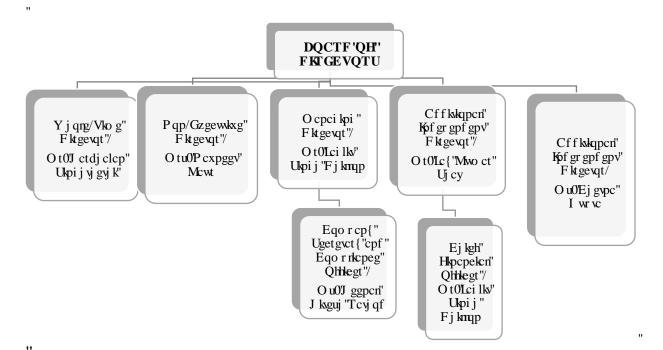
UtO' PqO'	Fk gevqt u''	F cvg'tht' Gxgpv''	Gxgpv''	Т де цари''
30'	Ou0Fkd{c"Rtcucf"	Lwn{ "4: ."4245"	Crrqkpvgf "cu'Cffkkkqpcn"Kpfgrgpfgpv" Fktgevqt"	Pqv'Crrnlecdng"
40"	Ou0Fkd{c"Rtcucf"	Ugr vgo dgt" 52."4245"	Tgi wrctk gf "cu"Kpf gr gpf gpv'Fktgevqt"	Pqv'Crrnlecdng''
50"	Ou0Fkd{c"Rtcucf"	F gego dgt"29." 4245"	Tguki pgf "cu"Kpf gr gpf gpv"Fktgevqt"	Rtg/Qeewrcpe{"
60'	Ot0Xkpc{'Ej qy fj wt{"	Ugr vgo dgt" 52."4245"	Crrqkpvgf "cu"Kpf grgpf gpv"Fktgevqt"	Pqv'Crrnlecdng''
70'	Ot0Xkpc{'Ej qy fj wt{"	F gego dgt"29." 4245"	Tguki pgf "cu"Kpf gr gpf gpv"Fktgevqt"	Rtg/Qeewrcpe{"
80'	Ou0Ejgypc"Iwrvc"	F gego dgt"29." 4245"	Crrqkpvgf "cu''Cffkkkqpcn''Kpfgrgpfgpv'' Fktgevqt"	Pqv'Crrnlecdng''
90'	Ot0Lc{''Mwoct''Ujcy'''	F gego dgt"29." 4245"	Crrqkpvgf "cu''Cffkkkqpcn''Kpfgrgpfgpv'' Fktgevqt"	Pqv'Crrrlecdrg''



: 0'	Ot0' J ctdj clcp" Ukpi j vj gvj k"	F gego dgt"2; ." 4245"	Crrqlpvgf "cu"Y j qrg"Vko g"Fktgevqt"	Pqv'Crrrlecdrg"
; 0'	O t0Lci lk/Ukpi j 'F j kmpp"	F gego dgt'2; ." 4245"	Ej cpi g'kp'F guki pcvkqp''cu''O cpci kpi " Fktgevqt"	Pq√Crrrkecdrg"

O cpci go gpv'Qti cpkrvkqp'Uvt wevwt g"

Ugv'hqtyj 'ku''yj g''o cpci go gpv'qti cpk| cvkqp''untwewtg''qh''qwt 'Eqo r cp{<'



Eqtrqtcvg'I qxgtpcpeg'''

Cu'qwt''Eqo rcp{'kı'eqo kpi 'y kj ''cp''kııwg''kp''yto u'qh'Ej cr yt''KZ ''qh''y g''UGDK'*MEFT+'Tgi wævkqpu."423: "cu''co gpf gf 'htqo '' vlo g."cu''qp''f cvg''qh''y kı'Ftchv'Rtqur gewu. "y g'tgs wktgo gpv'tr gekhlef 'lp'tgi wævkqpu'39."3: .'3; .'42."43."44."45."46."47." 48."49"cpf "eræwıgu''*d+''q''*k+''qh''uwd/tgi wævkqp''*84+''qh''tgi wævkqp''68"cpf ''r ctc''E. "F ''cpf ''G'qh''Uej gf wg''X ''qh''UGDK'*NQFT+'' Tgi wævkqpu."4237 ''ctg'pqv''cr r rhecdig''q'qwt ''Eqo r cp{0Kp''cf f kklqpu''q''y g''cr r rhecdig''tq'kuklqpu''qh''y g''Eqo r cpkgu'Cev."4235" y kn''dg''cr r rhecdig''q'qwt ''eqo r cp{ ''lo o gf kcvgn(''wr ''qp''y g''hkrhoi ''qh''Gs wkx{ ''Uj ctgu''qp''y g''Uqeni'Gzej cpi gu0J qy gxgt."qwt'' Eqo r cp{ ''j cu''eqo r rhgf 'y kj ''y g''eqtr qtcvg''i qxgtpcpeg'tgs wktgo gpv."r ctvlewætn(''kp''tgrevkqp''yq''cr r qkpvo gpv'qh'hpf gr gpf gpv' f ktgevqtu'kpenxf kpi ''y qo cp''f ktgevqt''qp''qwt''Dqctf. "eqpurkwwkqp''qh''cp''Cwf kv'Eqo o kwgg''cpf 'P qo kpcvkqp''cpf 'Tgo wpgtcvkqp'' Eqo o kwgg0Qwt'Dqctf 'hwpevkqpu'gksj gt''qp''ku''qy p'qt''y tqwi j ''eqo o kwggu''eqpurkwwgf ''y gtgqh ''q''qxgtugg''tr gekhle''qr gtcvkqpcn'' ctgcu0'

Eqo o kwggu'Qh'Qwt 'Dqctf'''

Qwt"Dqctf"j cu"eqpurkwwgf "hqmqy kpi "eqo o kwggu"kp"ceeqtf cpeg"y kyj "vj g"tgs wktgo gpwu"qh"vj g"Eqo r cpkgu"Cev"cpf "UGDK Nkurkpi "Tgi wcvkqpu<""

- c+ Cwf kd'Eqo o kwgg="
- d+ Ucngj qrf gtuøTgrcvkqpuj kr 'Eqo o kvgg="
- e+ Pqo kpcvkqp"cpf"Tgo wpgtcvkqp"Eqo o kwgg="
- f + Kpvgtpcn'Eqornckpvu'Eqookwgg="

F gvcknu'qh'gcej ''qh'\j gug''eqo o kwggu''ctg''cu''hqmqy u<'''

"



c0 Cwf ky'Eqo o kwgg''

Qwt"Eqo r cp{"j cu"eqpuvkwygf "cp"Cwf kv"Eqo o kwgg"*\$Cwf kv"Eqo o kwgg\$+."cu"r gt"Ugevkqp"399"qh"vj g"Eqo r cpkgu"Cev."4235" cpf "Tgi wrcvkqp"3: "qh"vj g"UGDK*NQF T+"Tgi wrcvkqp."4237="xkf g"tguqnwkqp"r cuugf "cv"vj g"o ggvkpi "qh"vj g"Dqctf "qh"F ktgevqtu" j grf "qp"F gego dgt"35."42450'

Ut 0P q0'	Рсо g'qHO go dgt ''	Fguli pcvkqp''
30'	Ot0Lc{"Mwoct"Ujcy."Cffkkqpcn"Kpfgrgpfgpv"Fktgevqt"	Ej cktr gtuqp"
40'	Ou0Ej gypc"I wrvc.''Cffkwkqpcn'lkpfgrgpfgpv'Fktgevqt"	O go dgt"
50'	Ot0 Lcilk/Ukpij 'Fjkmpp.'Ocpcikpi'Fktgevqt''	O go dgt"

Vj g'Cwf kv'Eqo o kwgg'ku'kp'eqo r nkcpeg'y kyj 'Ugevkqp'399'qh'vj g'Eqo r cpkgu'Cev'4235''cpf 'Tgi wncvkqp'3: ''qh'vj g'UGDKNkuvkpi '' Tgi wncvkqpu0Vj g'Eqo r cp{ ''Ugetgvct{ ''uj cm'cev'cu'vj g'ugetgvct{ ''qh'vj g'Cwf kv'Eqo o kwgg0'

Vj g'ueqr g.'hwpevlqpu'cpf 'vj g'vgto u'qh'tghgtgpeg'qh'qwt'Cwf kvEqo o kvgg.'ku'kp'ceeqtf cpeg'y kyj 'Ugevlqp'399'qh'vj g'Eqo r cpkgu'' Cev.''4235''cpf 'Tgi wrcvlqp''3: ''qh'vj g''UGDK'Nkvvkpi 'Tgi wrcvlqpu'y j kej ''ctg''cu'hqmqy u<'''

 ${\bf C0}~{
m Rqy}~{
m gtu''qh''Cwf}~{
m k''Eqo}~{
m o}~{
m kwgg''}$

Vj g'Cwf kv'Eqo o kwgg'uj cm'j cxg'vj g'hqmqy kpi 'r qy gtu<'

- $30 \quad Vq'' kpx gunki \ cvg'' cp \{ ''cevkxkv \{ ''y \ ky \ kp''ksu' \ vgto \ u''qh''t ghgt gpeg=''$
- 40 Vq"uggmikphqto cvkqp"htqo "cp{ "go r nq{ gg="
- 50 Vq"qdvclp"qwulf g"rgi cn'qt"qyj gt"r tqhguulqpcn'cf xleg="cpf"
- 60 Vq'ugewtg''cwgpf cpeg''qh''qwwlkf gtu''y kyj ''tgrgxcpv''gzr gtvkug. ''kh'tkv'eqpulkf gtu''pgeguuct { ''
- D0 'Tqrg'qh'\'j g'C\'wf k\'Eqo o k\'wgg''

 $Vj \; g'tqng'qh'vj \; g'cwf \; k'eqo \; o \; kwgg'uj \; cm'kpenwf \; g''vj \; g'hqmqy \; kpi <'$

- 30 Qxgtuki j v'qh''yi g"eqo r cp{øu'hlpcpekcn'tgrqtvkpi "r tqeguu''cpf "yi g"f kuenquwtg"qh''kuu'hlpcpekcn'llphqto cvkqp"vq"gpuwtg"yi cv' yi g'hlpcpekcn'luvcvgo gpuu''ctg"eqttgev.''uwhhlekgpv''cpf "etgf kdrg=""
- 40 Tgeqo o gpf cvkqp'hqt"crrqkpvo gpv.'tgo wpgtcvkqp"cpf 'vgto u'qh'crrqkpvo gpv'qh'cwf kxqtu'qh'vj g'eqo rcp{=""
- Tgxkgy kpi ."y kj "j g"o cpci go gpv."j g"cppwcn"htpcpekcn"uvcvgo gpvu"cpf "cwf kqt)u"tgr qtv"j gtgqp"dghqtg"uwdo knukqp"vq" y g"Dqctf "hqt"crrtqxcn"y kj "rctvkewrct"tghgtgpeg"vq<""
- c0 O cwgtu't gs wkt gf '\q'dg'kpenwf gf 'kp'\j g'F kt gevqt øu'T gur qpukdkrk\{ 'Uvcvgo gpv\'q'dg'kpenwf gf 'kp'\j g'Dqctf øu't gr qtv\kp'\gto u' qh'encwug'*e+'qh'uwd/ugevkqp''5'qh'ugevkqp''356'qh'\j g'Eqo r cpkgu'Cev.'4235=""
- d0 Ej cpi gu. "kh"cp{. "kp"ceeqwpvkpi "r qrkekgu"cpf "r tcevkegu"cpf "tgcuqpu"hqt"vj g"uco g=""
- e0 O clqt "ceeqwpvkpi "gpvtkgu"kpxqrxkpi "guvko cvgu"dcugf "qp" yj g"gzgtekug"qh"lwf i o gpv'd { "o cpci go gpv=""
- f 0 Uki pkhlecpy'cf lwuvo gpvu'o cf g'kp'vj g'hkpcpelcn'uvcvgo gpvu'ctkukpi ''qwi'qh'cwf kv'hkpf kpi u='''
- g0 Eqornkcpeg'y kij "hkukpi "cpf "qvj gt "ngi cn't gs vkt go gpvu"t gncvkpi "vq "hkpcpekcn't vcvgo gpvu=""
- $\label{eq:homogeneous} \begin{tabular}{ll} h0 & F kwenquwtg"qh"cp{ ''tgmcvgf ''r ctv{ ''tcpucevkqpu="cpf '''}} \end{tabular}$
- i 0 S workhlecvkqpu'kp'yj g'f tchv'cwf kv'tgr qtv0''
- 70 Tgxkgy kpi ."y kyj "'y g"o cpci go gpv."yj g"s wctvgtn("hlpcpekcn'lucvgo gpvu"dghqtg"luwdo kuukqp"vq"yj g"Dqctf "hqt"crrtqxcn=""
- Tgxkgy kpi ."y kj "y g"o cpci go gpv."y g"uvcygo gpv'qh'wugu"I'crrnkecvkqp"qh'hwpf u'tckugf "y tqwi j "cp"kuuwg"*r wdrke "kuuwg." tki j wi'kuuwg. "r tghgtgpvkcn'kuuwg. "gve0#."y g"uvcygo gpv'qh'hwpf u'wwkrk gf "hqt"r wtr qugu"qyi gt "y cp "y qug"uvcygf "hp "y g"qhhgt" f qewo gpv' I"r tqur gewuu" I"pqvkeg"cpf "y g"tgr qtv'uvdo kwgf "d { "y g"o qpkqtkpi "ci gpe { "o qpkqtkpi "y g"wkrk cvkqp"qh" r tqeggf u'qh'c"r wdrke "qt"tki j wi'kuuwg. "cpf "o cmkpi "crrtqrtkcvg"tgeqo o gpf cvkqpu"vq"yi g"Dqctf "vq"vcng"wr "uvgr u"kp"yi ku" o cwgt=""
- 90 O qpkqtkpi 'yj g'gpf 'wug'qh'hwpf u'tckugf 'yj tqwi j 'r wdrke 'qhhgtu'cpf 'tgrcvgf 'o cwgtu='''
- : 0 Tgxkgy kpi "cpf "o qpkqtkpi "vj g"cwf kqtøu"kpf gr gpf gpeg"cpf "r gthqto cpeg."cpf "ghlgevkxgpguu"qh"cwf kv'r tqeguu=""
- ; O Crrtqxcn'qh'cp{''uwdugs wgpv'o qf khkecvkqp''qh'\tcpucevkqpu''qh'\j g''eqorcp{''y kj ''tgrcvgf''r ctvkgu='''

Gzrwpcwlqp<"Vj g"vgto "õtgrevgf "r ctv{ "vtcpucevlqpuö"vj cm"j cxg"vj g"uco g"o gcpkpi "cu"r tqxkf gf "kp"Enewug"4"*| e+"qh"vj g" UGDKNkuvkpi "Tgi wrcvlqpu"cpf lqt"vj g"Ceeqwpvkpi "Uvcpf ctf u0"

- 320 Uetwkp{"qh"kpvgt/eqtrqtcvg"hqcpu"cpf "kpxguvo gpvu=""
- 330 Xcnwcwqp"qh"wpf gt vcmkpi u"qt "cuugvu"qh"vj g"eqo r cp{."y j gtgxgt"kv"ku"pgeguuct {=""
- 340 Gxcnwcvkqp"qh"kpvgtpcn"hkpcpekcn"eqpvtqnu"cpf "tkum"o cpci go gpv"u{ uvgo u=""

"



- 350 Tgxkgy kpi ."y ký "ý g"o cpci go gpv."r gthqto cpeg"qh"uvcwvqt { "cpf "kpvgtpcn"cwf kqtu."cf gs wce { "qh"vý g"kpvgtpcn'eqpvtqn" u{ uvgo u=""
- 360 Tgxkgy kpi "ý g"cf gs wce { "qh"kpygtpcn"cwf kv"hwpevkqp."kh"cp { ."kpenwf kpi "ý g"untwewtg"qh"ý g"kpygtpcn"cwf kv"f gr ct vo gpv." uvchhkpi "cpf "ugpkqtkv{ "qh"ý g"qhhkekcn"j gcf kpi "ý g"f gr ct vo gpv."tgr qt vkpi "untwewtg"eqxgtci g"cpf "lttgs wgpe { "qh"kpygtpcn" cwf kv=""
- 370 F kuewuukqp'y kij 'kpygtpcn'cwf kqtu'qh'cp{ 'uki pkhlecpv'hkpf kpi u'cpf 'hqmqy 'wr 'yj gtg'qp='''
- 380 Tgxkgy kpi "y g'hkpf kpi u'qh'cp{ "kpvgtpcn'kpxguvki cvkqpu''d{ "y g"kpvgtpcn'cwf kxqtu''kpvq"o cvvgtu''y j gtg"y gtg"ku''uwur gevgf "htcwf 'qt'ktgi wrctkx{ "qt'c'hcknxtg"qh'kpvgtpcn'eqpvtqn'u{uvgo u'qh'c'o cvgtkcn'pcwxtg"cpf 'tgr qtvkpi ''y g''o cvvgt 'vq'y g'Dqctf =""
- 390 F knewnukap"y kij "uncwwqt { "cwf kqtu"dghqtg"yj g"cwf kv'eqo o gpegu. "cdqwv'yj g"pcwtg"cpf "neqr g"qh'cwf kv'cu'y gm'cu'r quw' cwf kv'f knewnukap"yq "cuegt vckp"cp { "ctgc"qh'eqpegtp=""
- 3: 0 Nqqmkpi 'kpvq''y g't gcuqpu'hqt'uwduvcpvkcnff ghcwmu'kp''y g't c{o gpv'\q'f gr qukqtu.'f gdgpwstg'j qnf gtu.'uj ctgj qnf gtu''kp'ecug'' qh'pqp/r c{o gpv'qh'f genetgf ''f kxkf gpf u+"cpf 'etgf kqtu="''
- 3; 0 Tgxkgy kpi "'y g'hwperkqpkpi "qh''y g''y j kung''dnqy gt''o gej cpkuo =""
- 420 Crrtqxcn'qh'crrqkpvo gpv'qh'EHQ"chygt "cuuguukpi "yj g"s wcnkhlecvkqpu. "gzrgtkgpeg"cpf "dcemi tqwpf. "gve0'qh'yj g'ecpf kf cvg="
- 430 Ectt{kpi "qw"cp{"qyj gt"hwpevkqp"cu"ku"o gpvkqpgf "kp"yj g"vgto u"qh"tghgtgpeg"qh"vj g"Cwf kv"Eqo o kwgg="cpf""
- 440 Tgxkgy kpi "y g"wkrk cvkqp"qh"rqcpu"cpf kqt"cf xcpegu"htqo lkpxguvo gpwu"d{"yi g"j qrf kpi "eqo r cp{"kp"yi g"uwdukf kct{" gzeggf kpi "twr ggu"j wpf tgf "etqtgu"qt"322' "qh"yi g"cuugv"ukļ g"qh"yi g"uwdukf kct{."y j kej gxgt"ku"nqy gt"kpenwf kpi "gzkunkpi " qcpu"l"cf xcpegul"kpxguvo gpvu."cu"o c{"dg"crr nkecdig0"
- 450 eqpulf gt "cpf "eqo o gpv"qp"tcvkqpcrg. "equv dgpghku"cpf "lo r cev"qh"uej go gu"kpxqrxkpi "o gti gt. "f go gti gt. "co cri co cvkqp" gve0"qp"vj g"huvgf "gpvk\{"cpf "kuvij ctgj qrf gtu0"

Hwt y gt. "y g"C wf ky"Eqo o kwgg" y cm'o cpf c vqt kn('tgxkgy "y g"hqmqy kpi "kphqto c vkqp<"

O cpci go gpv'f kuewuukqp"cpf "cpcn(uku"qh"hkpcpekcn'eqpf kkqp"cpf "tguwnu"qh"qr gtcvkqpu="

Ucvgo gpv'qh'uki pkhecpv'tgrcvgf 'r ctv{ "tcpucevlqpu" cu"f ghlpgf "d{"vj g"cwf kv'eqo o kvygg+: 'uwdo kvygf "d{"o cpci go gpv="

O cpci go gpv'igwgtu"I'igwgtu"qh'ikpvgtpcn'eqpvtqn'y gcmpguugu'kunwgf "d{ "vj g'uwcwwqt { "cwf kqtu="

Kpvgtpcn'cwf kv'tgr qtvu'tgrcvkpi "vq'kpvgtpcn'eqpvtqn'y gcmpguugu="cpf"

Crrqkpvo gpv.'tgo qxcn'cpf ''yto u'qh'tgo wpgtc\kqp"qh'\j g"ej kgh'kpvgtpcn'cwf kqt ''uj cm'dg''uwdlgev'\q''tgxkgy ''d { ''yj g''cwf kv'' eqo o kwgg0'

uvcvgo gpv'qh'f gxkcvkqpu<'

 $S \ wct \ ytn ("uvc \ yo \ gpv" \ qh" \ f \ gx \ kc \ kqp \ "u+" \ kpenwf \ kpi "t \ gr \ qtv" \ qh" \ o \ qp \ kqt \ kpi "c \ r \ r \ kecd \ g. "uwdo \ kwgf "vq" uvqen' \ gzej \ cpi \ g\ "u+" \ kp" \ ygto \ u'qh'T \ gi \ wc \ kqp" \ 54 \ "3 + "qh" \ y \ g" \ UGDKN kwkpi "T \ gi \ wc \ kqpu0"$

Cppwcn'uvcvgo gpv'qh'hwpf u'wkrkl gf "hqt"r wtr qugu"qvj gt "vj cp"vj qug"uvcvgf "kp"vj g"qhhgt "f qewo gpvlr tqur gewulpqvleg"kp" yto u'qh'Tgi wtcvkqp"54*9+'vj g"UGDK'Nkuvkpi "Tgi wtcvkqpu0'

Cu't gs wkt gf "wpf gt "yj g"UGDKNkurkpi "Tgi wrcvkqpu." yj g"Cwf kk'Eqo o kwgg"uj cm'o ggv'cv'ngcuv'nqwt "ko gu'c" {gct "y kij "o cz ko wo "kpvgtxcn"qh"hqwt "o qpvj u"dgwy ggp" wy q"o ggvkpi u"cpf "vj g"s wqtwo "hqt" gcej "o ggvkpi "qh" yj g"Cwf kk'Eqo o kwgg" uj cm'dg" wy q"o go dgtu "qt "qpg" yj ktf "qh" yj g"o go dgtu "y j kej gxgt" ku'i tgcvgt. "r tqxkf gf "vj cv'yj gtg" uj qwf "dg"c"o kpko wo "qh' wy q"kpf gr gpf gpv" f ktgevqtu'r tgugpv0'

d0 Uvengj qrf gt uø'T gre vlapuj kr 'E qo o kveg''

0.007

Qwt"Eqorcp{"jcu"eqpuvkwygf"c"Ucngjqrfgtuø'Tgrcvkqpujkr"Eqookwgg"*\$Cwfkv'Eqookwgg\$+:"cu"rgt"Ugevkqp"39: "qh"yjg" Eqorcpkgu'Cev."4235"cpf"Tgiwrcvkqp"42"qh"yjg"UGDK*NQFT+Tgiwrcvkqp."4237=xkfg"tguqnwkqp"rcuugf"cv'yjg"oggvkpi"qh" yjg"Dqctf"qh'Fktgevqtu'jgrf"qp"Fgegodgt"35."42450"

	Ut OP qO'	Pco g'qhO go dgt''	F guli pcvkqp''		
	30'	O tu0P cxpggv'Mcwt. "P qp/Gz gewkx g'F kt gevqt"	Ej cktr gtuqp"		
40' Ot0 I c{		Ot0Lc{"Mwoct"Ujcy."Cffkkqpcn"Kpfgrgpfgpv"Fktgevqt"	O go dgt"		
	50'	Ot0Ici lk/Upi j 'Fj kmp.'Ocpci kpi 'Fktgevqt"	O go dgt"		

Vj g"Uvcngj qrf gtuø'Tgrcvkqpuj kr "Eqo o kvgg"ku'l\p"eqo r rkcpeg"y kij "Ugevkqp"39: "qh''y g"Eqo r cpkgu'Cev'4235"cpf "Tgi wrcvkqpu" 42"qh''y g"UGDKNkrvkpi "Tgi wrcvkqpu0'Vj g"Eqo r cp{"Ugetgvct{"uj crrl'cev'cu''y g"ugetgvct{"qh''y g"Uvcngj qrf gtuø'Tgrcvkqpuj kr "Eqo o kvgg0'

Vj g"ueqr g"cpf "hwpevlqp"qh"vj g"Uvcngj qrf gtuø Tgrcvlqpuj kr "Eqo o kvgg"ku"kp"ceeqtf cpeg"y kj "Ugevlqp"39: "qh"vj g"Eqo r cpkgu" Cev "4235"cpf "vj g"UCDKNkrvlpi "Tgi wrcvlqpu"cpf "vj g"vgto u"qh"tghgtgpeg. "r qy gtu"cpf "ueqr g"qh"vj g"Uvcngj qrf gtuø Tgrcvlqpuj kr "Eqo o kvgg"qh"qwt "Eqo r cp{ "kpenvf g<""

Tguqnxkpi ''y g'i tkgxcpegu'qh'y g'ugewtkv{ 'j qnf gtu'qh'y g'Eqo r cp { 'kpenwf kpi 'eqo r nckpwi'tgncvgf ''q''tcpuhgt htcpuo kuukqp'' qh'uj ctgu. 'pqp/tgegkr wi'qh'cppwcnttgr qtw. 'pqp/tgegkr v'qh'f genctgf 'f kxlf gpf u. 'kuuwg'qh'pgy If wr nlecvg'egt whecvgu.'i gpgtcn' o ggvkpi u. 'gve0±''

...



- 40 Tgxkgy "qh"o gcuwtgu'\cmgp"hqt"ghhge\kxg"gzgtekug"qh'xq\kpi "tki j wl'qh'd{ '\uj ctgj qnf gtu='''
- Tgxkgy 'qh'cf j gtgpeg'\q'\j g'\ugtxkeg'\ucpf ctf u'cf qr \ugf 'd{ '\j g'hkn\ugf "gp\k\\ '\p'\tg\ur ge\'qh'\xctk\qwu'\\ugtxkeg\'dgkpi '\tgpf gtgf '' d{ '\j g'Tgi kn\utct'cpf 'Uj ctg'\understeen 'Uj ctg'\understeen '\understeen '\understeen
- 60 Tgxkgy "qh" y g"xctkqwu" o gcuwtgu"cpf "kpkkcvkxgu" vcmpp"d { "y g"rkuvgf "gpvkv{ "hqt"tgf welpi "y g"s wcpwo "qh" wpencko gf "f kxkf gpf u"cpf "gpuwtkpi "vko gn("tgegkr wu"qh"f kxkf gpf "y cttcpwul"cppwcn"tgr qtwul"uvcwwqt { "pqvkegu"d { "y g"uj ctgj qrf gtu"qh" y g"Eqo r cp{="cpf""
- 70 Ectt{kpi "qw/cp{"qyj gt hwpevkqp"cu"r tguetkdgf "wpf gt"yj g"UGDKNkuvkpi "Tgi wucvkqpu"cu"cpf "y j gp"co gpf gf 'htqo "vko g"vq" vko g0'

Cu'tgs wktgf "wpf gt" y g"UGDKNkulpi "Tgi wrcllqpu." y g"Ukcngj qnf gtu'Tgrcllqpuj kr "Eqo o kwgg" uj cm'o ggv'cv'ngcuv'qpeg" c" { gct." cpf "y g"ej cktr gtuqp" qh" y g"eqo o kwgg" uj cm'dg" r tgugpv'cv' y g"cppwcn'i gpgtcn'o ggvlpi u"vq"cpuy gt "s wgtkgu" qh" y g"ugewtk { " j qnf gtu0'V j g"s wqtwo "qh' y g"o ggvlpi "uj cm'dg" gkyj gt "y q"o go dgtu" qt "qpg" y ktf "qh' y g"o go dgtu" qh' y g"eqo o kwgg" y j kej gxgt" ku'i tgcvgt0'

e0 Pqo kpcvkqp'cpf 'Tgo wpgtcvkqp'Eqo o kvgg''

Qwt"Eqorcp{"j cu"eqpurkwygf "c"Ucngj qrf gtuø"Tgrcvkqpuj kr "Eqookwgg"*\$Cwf kv"Eqookwgg\$+."cu"r gt "Ugevkqp"39: "qh" y g" Eqorcpkgu"Cev."4235"cpf "Tgi wrcvkqp"3; "qh" y g"UGDK*NQFT+"Tgi wrcvkqp."4237="xkf g"tguqnwkqp"r cuugf "cv" y g"oggvkpi "qh" y g"Dqctf "qh"Fktgevqtu" y grf "qp"F gegodgt"35."42450"

Ut 0P q0'	Pco g'qhOgo dgt''	Fguli pcvkqp''		
30'	Ou0Ej gypc'I wrwc.'CffkwlqpcnllKpfgrgpfgpv'Fktgevqt"	Ej cktr gtuqp"		
40'	Ot0"Lc{"Mwoct"Ujcy."Cffkkqpcn"Kpfgrgpfgpv"Fktgevqt"	O go dgt"		
50'	O tu0P cxpggv'Mcwt. 'P qp/Gz gewkxg'F kt gevqt"	O go dgt"		

Vj g"P qo kpcvkqp"cpf "Tgo wpgtcvkqp"Eqo o kwgg"ku"kp"eqo r ncpeg"y kj "Ugevkqp"39: "qh"yj g"Eqo r cpkgu"Cev"4235"cpf "Tgi wrcvkqp"3; "qh"yj g"UGDKNkrvkpi "Tgi wrcvkqpu0"Vj g"Eqo r cp{"Ugetgvct{"uj cm'cev'cu"yj g'ugetgvct{"qh'yj g'P qo kpcvkqp"cpf" Tgo wpgtcvkqp"Eqo o kwgg0"

Vj g"ueqr g"cpf "hwpevlqp"qh" yj g"P qo kpcvlqp"cpf "Tgo wpgtcvlqp"Eqo o kwgg"ku"kp"ceeqtf cpeg" y kyj "Ugevlqp"39: "qh" yj g" Eqo r cpkgu"Cev."4235"cpf "UGDKNkuvlpi "Tgi wrcvlqpu"cpf "yj g"vgto u"qh"tghgtgpeg."r qy gtu"cpf "tqrg"qh"qwt "P qo kpcvlqp"cpf "Tgo wpgtcvlqp"Eqo o kwgg"ctg"cu"hqmqy u<""

- 30 hqto wrwlqp"qh" yi g"etksgtkc"hqt" f gvgto kpkpi "s workhecvkqpu."r qukskxg" cwtkdwgu" cpf "kpf gr gpf gpeg"qh" c"f ktgevqt "cpf" tgeqo o gpf "vq" yi g"dqctf "qh"f ktgevqtu" c"r qrke{"tgrcvkpi "vq." yi g"tgo wpgtcvkqp"qh" yi g"f ktgevqtu." mg{"o cpci gtkcn"r gtuqppgn" cpf "qyi gt"go r mq{ggu="
- 40 Hqt"gxgt {"crrqkpvo gpv"qh"cp"kpf gr gpf gpv"f ktgevqt."vj g"P qo kpcvkqp"cpf "Tgo wpgtcvkqp"Eqo o kwgg"uj cm"gxcnwcvg"vj g" dcmcpeg"qh"unkmu."npqy ngf i g"cpf "gzr gtkgpeg"qp"vj g"Dqctf "cpf "qp"vj g"dcuku"qh"uwej "gxcnwcvkqp."r tgr ctg"c"f guetkr vkqp" qh"vj g'tqng"cpf "cr cdkrkkgu"tgs wktgf "qh"cp"kpf gr gpf gpv"f ktgevqt0Vj g"r gtuqp"tgeqo o gpf gf "vq"vj g"Dqctf "hqt"cr rqkpvo gpv" cu"cp"kpf gr gpf gpv"f ktgevqt"uj cm"j cxg"vj g"ecr cdkrkvkgu"kf gpvkhkgf "kp"uwej "f guetkr vkqp0"Hqt"vj g"r vtr qug"qh"kf gpvkh{kpi "uwkxcdng"ecpf kf cvgu."vj g"Eqo o kwgg"o c{<"
- c+ w_i g''y g''ugtxkegu''qh''cp''gz vgtpcn'ci gpekgu. 'kh''t gs wkt gf ="
- d+ eqpulf gt "ecpf lf cvgu" htqo "c"y lf g"tcpi g"qh" dceni tqwpf u." j cxlpi "f wg"tgi ctf "\q"f kxgtulx{="cpf"
- e+ eqpulf gt 'vj g 'vlo g 'eqo o ko gpvu'qh 'vj g 'ecpf lf cvgu0'
- $50 \quad \text{hqto wewlqp"qh"etkgtkc"hqt"gxcnwcwlqp"qh"r gthqto cpeg"qh"lpf gr gpf gpv"f ktgevqtu"cpf "vj g"dqctf"qh"f ktgevqtu="" and the second of the second o$
- 60 f gxkukpi "c"r qrke { "qp"f kxgtukx{ "qh"dqctf "qh"f ktgevqtu="
- 70 If gpvlh{kpi "r gtuqpu"y j q"ctg"s wcnlhlgf "vq"dgeqo g"f ltgevqtu"cpf "y j q"o c{"dg"crrqkpvgf "kp"ugpkqt"o cpci go gpv"kp" ceeqtf cpeg'y kj "vj g"etkgtkc'nckf "f qy p. "cpf "tgeqo o gpf "vq"vj g"dqctf "qhlf ltgevqtu'vj gkt "crrqkpvo gpv'cpf "tgo qxcn="
- 80 y j gvj gt"vq"gzvgpf"qt"eqpvkpwg"vj g"vgto "qh"crrqkpvo gpv"qh"vj g"kpf grgpf gpv"f ktgevqt."qp"vj g"dcuku"qh"vj g"tgrqtv"qh" rgthqto cpeg"gxcnwcvkqp"qh"kpf grgpf gpv"f ktgevqtu≓
- 90 tgeqo o gpf "\q"\j g"dqctf ."cmltgo wpgtc\\qpp."\qp"\y j c\yxxgt"\qto ."r c{cdrg"\q"\ugpkqt"o cpci go gpv="
- : 0 htco kpi "uwkscdrg"r qrkekgu"cpf "u{ uvgo u"vq"gpuwtg"'yj cv"vj gtg"ku"pq"xkqrcvkqp."d{"cp"go r rq{gg"qh"cp{"cr r rkecdrg"rcy u"kp" Kpf kc"qt"qxgtugcu."kpenwf kpi <"
- ; 0 yi g"Ugewtkkgu"cpf "Gzej cpi g"Dqctf "qh"Kpf kc"*Rtqj kdkkqp"qh"Kpukf gt"Vtcf kpi +'Tgi wrcvkqpu."3; ; 4"qt"yi g"Ugewtkkgu"cpf "Gzej cpi g"Dqctf "qh"Kpf kc"*Rtqj kdkkqp"qh"Kpukf gt "Vtcf kpi +'Tgi wrcvkqpu."4237"vq"yi g"gzvgpv'gcej "ku"cr r rkecdrg="qt"
- 320 yj g"Ugewtkskgu"cpf "Gzej cpi g"Dqctf "qh"Kpf kc"*Rtqj kdkskqp"qh"Htcwf wrgpv"cpf "Wphckt"Vtcf g"Rtceskegu"tgrcskpi "vq"yj g"
 Ugewtkskgu"O ctngv+Tgi wrcskqpu."4225="
- 330 gxcnwcvlpi " yi g" r gthqto cpeg" qh" yi g" kpf gr gpf gpv" f ktgevqtu" cpf " qp" yi g" dcuku" qh" yi gkt" r gthqto cpeg" gxcnwcvlqp" tgeqo o gpf kpi 'yi g'Dqctf 'qh'F ktgevqtu'cpf 'yi g'o go dgtu'qh'yi g'Eqo r cp{ 'vq"gz vgpf 'qt"eqpvkpwg"yi g'vgto 'qh'cr r qkpvo gpv' qh'yi g'kpf gr gpf gpv'f ktgevqt="cpf""



340 r gthqto kpi "uwej "qvj gt"cevkxkkgu"cu"o c{"dg"f grgi cvgf "d{"vj g"Dqctf "qh"f ktgevqtu"cpf lqt"ctg"uvcwvqtkn{"r tguetkdgf "wpf gt" cp{"rcy "vq"dg"cvgpf gf "vq"d{"vj g"P qo kpcvkqp"cpf "Tgo wpgtcvkqp"Eqo o kvgg0"

Cu'tgs wktgf "wpf gt"y g"UGDKNkukpi "Tgi wrckqpu."y g"P qo kpckqp"cpf "Tgo wpgtckqp"Eqo o kwgg"uj cm'o ggv'cv'ngcuv'qpeg"c" {gct."cpf "y g"ej cktr gtuqp"qh"y g"eqo o kwgg"uj cm'dg"r tgugpv'cv'y g"cppwcn'i gpgtcn'o ggkpi u"vq"cpuy gt"s wgtkgu"qh'y g" uj ctgj qnf gtu0Vj g's wqtwo "hqt"gcej "o ggkpi "qh'y g"uckf "eqo o kwgg"uj cm'dg"gkyj gt"y q'o go dgtu"qt"qpg/y ktf "qh'y g'o go dgtu" qh'y g"eqo o kwgg"y j kej gxgt'ku'i tgcvgt. "kpenwf kpi "cv'ngcuv'qpg'kpf gr gpf gpv'f ktgevqt "kp'r tgugpeg0"

f 0 Kpvgt pcnEqo r nckpvu'Eqo o kvgg''

Cp"Kpvgtpcn'Eqo r nckpw'Eqo o kwgg'ku'eqpukwwgf 'hqt'qwt'Eqo r cp{ "d{ "ý g"Dqctf "vq'nqm'kpvq"ý g"o cwgtu'eqpegtpkpi "ugz wcn" j ctcuuo gpv'' r wtuwcpv'' vq" tguqnwkqp" qh" yi g" Dqctf "qh' F ktgevqtu" f cvgf "F gego dgt" 35." 42450' Vj g" Dqctf "ci tggf "hqt" yi g" cr r qkpvo gpv'qh'y q"o cng'ecpf kf cvgu''cu'O go dgtu'qh'yi g"KEE'ukpeg'yi g'Eqo r cp{ 'j cu'P KN''pwo dgt'qh'hgo cng''go r nq{ ggu0Vj g" Kpvgtpcn'Eqo r nckpvu''eqpukwu''qh'yi g'hqmyy kpi "o go dgtu<"

Ut OP qO'	Pco g''	Uvcvvu'lp'tj g'Eqo o kvgg''	I gpf gt ''
30'	O tu0P expggv'Mewt"	Rtgulfkpi 'Qhhlegt''	Hgo crg"
40'	O t0'Dkıy cpcyj 'Ej cwgtlgg''	O go dgt"*Go r m{gg+"	O crg"
50'	Ot0Cpwrco 'Pcumct"	O go dgt'*Go r nq{gg+''	O crg"
60'	Ou0'Cfkkk'!Mqjrk''	Gz vgt pcn'O go dgt "\O go dgt "qh'P I Q+"	Hgo crg"

C'eqormkpcpv'ecp'crrtqcej 'cp{'o go dgt'qh'vj g'eqo o kwgg'y kj 'j kulj gt'y tkwgp'eqormkpv0'

Vgp wt g''

Vjg"Rtgulfgpv"cpf "qvjgt"ogodgtu"qh'vjg"eqoolweg"ujcm"jqnf "qhhleg"hqt"uwej"rgtkqf."pqv"gzeggfkpi "5"*vjtgg+"{gctu."htqo" yjg"fcvg"qh'vjgkt"pqokpcvkqp"cu"oc{"dg"urgekhlef"d{"vjg"gornq{gt0'

Ueqrg''

 $\label{thm:controlled} Vj ku"r qrke{"ku"cr r rkecdrg" q"go r rq{ggu."y qtngtu."xqnwpvggtu."r tqdcvkqpgt"cpf "vtckpggu"kpenwf kpi "vj qug"qp"f gr wcvkqp."r ctv' vko g. "eqpvtcev"y qtnkpi "cu"eqpuwncpvu"qt "qvj gty kug" "vj gvj gt"kp"vj g"qhhkeg"r tgo kugu"qt "qwulkf g"y j krg"qp"cuuki po gpv+0"Vj ku" r qrke{"uj cm'dg"eqpukf gtgf "vq"dg"c"r ctv'qh"vj g"go r rq{o gpv'eqpvtcev"qt"vgto u"qh"gpi ci go gpv'qh"vj g"r gtuqpu"kp"vj g"cdqxg" ecvgi qtkgu0'$

 $Y j g t g " j g " cmpi g f " lipek f g p v ' q e w t u " v q " q w t " g o r m \{ g g " d \{ " c " j k f " r c t v \{ " y j k r g " q p " c " f w \{ " q w u k f g " q w t " r t g o k u g u. " y g " E q o r c p \{ " u j c m ' r g t h q t o " c m ' t g c u q p c d m ' c p f " liver u ' v q ' u w r q t v ' q w t " g o r m \{ g g 0 ' liver r q t v ' q w t " g o r m \} g g 0 ' liver n q t v ' q w t " g o r m \} g 0 ' liver n q t v ' q w t ' g o r m \} g 0 ' liver n q t v ' q w t ' g o r m \} g 0 ' liver n q t v ' q w t ' g o r m \} g 0 ' liver n q t v ' q w t ' q$

Y j cv'Eqpuskwvgu'Ugz wcn'J ctcuuo gpvA''

Ugzwcn'I ctcuuo gpv'o gcpu'uwej "wpy gneqo g'ugzwcm("f gvgto kpgf "dgj cxkqwt"*f ktgevn("qt"vj tqwi j "ko r nlecvkqp+."nkmg"r j {ukecn' eqpvcev'cpf "cf xcpegu'd{ 'vj g"go r nq{gg*u+"kpenwf kpi <"

- 30 C"f go cpf "qt"tgs wguv"hqt"ugz wcn"hcxqwtu. "ugz wcm" "eqnqwtgf "tgo ctmu."uj qy kpi "r qtpqi tcr j {."cp{"qyj gt"wpy greqo g" r j {ukecn'eqpf wev'qh'ugz wcn'pcwtg. "nwtkf "uvctgu."r j {ukecn'eqpvcev'qt"o qrguvcvkqp. "uvcmkpi ."uqwpf u."f kur rc{"qh'r kewtgu." uki pu="
- 40 Gxg"\gculpi ."kppwgpfqu"cpf "\cwpvu."rj {ulecn'eqphkpgo gpv'ci clpuv'qpgøu'y km="
- C"f go cpf "qt"tgs wguv'hqt"ugzwcn'hcxqwtu."y j gvj gt"xgtdcm("qt"pqp/xgtdcm(."y j gtg"vj g"uwdo kuulqp"vq"uwej "eqpf wev'ku" o cf g"gkj gt"gzr nlekm("qt"ko r nlekm("c"vgto "qt"eqpf kklqp"qh"cp"kpf kxkf wcnxu"go r m{o gpv'qt"r tqo qvkqp"l"gxcnwcvkqp"qh" y qtm'vj gtgd{ "f gp{kpi "cp"kpf kxkf wcn'gs wcn'qr r qtwpkx("cv'go r m{o gpv="
- 60 Cp"cev'qt"eqpf wev'd{"c"r gtuqp"kp"cwj qtkx{"y j kej "o cngu"y g"gpxktqpo gpv'cv'y qtmr nceg"j quxkrg"qt"kpvko kf cvkpi "vq"c" r gtuqp"qt"kptgcuqpcdn{ 'kpvgthgtgu'y kj "y g"kpf kxkf wcnxu"r tkxce{ "cpf"r tqf wevkxkx{ "cv'y qtm="
- 70 Xgtdcn'j ctcuuo gpv'qh'c'ugz wcn'pcwtg."uwej "cu'ngy f "eqo o gpw."ugz wcn'lqngu"qt"tghgtgpegu."cpf "qhhgpulxg"r gtuqpcn' tghgtgpegu="f go gcplqi .'lqnwnlqi .'lqnlo lf cvlqi .'qt'ugz wcm\"uwi i guvlxg'eqo o gpw."qtcn'qt'y tlwgp+'cdqw'cp'lqpf kxlf wcn)u' r gtuqpcn'cr r gctcpeg'qt "grgevtqplecm\"vtcpuo kwgf "o guuci gu'*lqngu."tgo ctm. "rgwgtu."r j qpg'ecmn==""
- 80 Cp{"qyi gt"dgj cxkqwt"y j kej "cp"kpf kxkf wcn'r gtegkxgu'cu''j cxkpi "ugz wcn'qxgt qpgu0""

,,



Tgf tguuc dO gej cpkw <'

Qpeg'y g'eqo r nckpv'ku't gegkxgf 'd{ 'y g'Eqo o kwgg<'''

- Vj g"r gtuqp"y j q"ku"ceewugf "d{"vj g"eqo r nckpcpv'y kmi'dg"kphqto gf "vj cv'c"eqo r nckpv'j cu''dggp"hkngf "ci ckpuv'j ko "∜j g"y kmi" dg'o cf g'cy ctg'qh'y g'f gwku'qh'y g'cmgi cwqp'cpf 'cnuq'y g'pco g'qh'y g'eqo r mkpcpv'cu'kv'y qwrf 'dg'pgeguwct { 'hqt 'r tqr gt'' kps wkt { +"cpf "pq "wphckt "cevu"qh"tgvcnkcvkqp"qt "wpgvj kecn"cevkqp"y km"dg "vqngtcvgf 0""
- lkO Vj g"eqo rıckpcpv"j cu"yj g"qrrqtwypk/{ "vq"cum"hqt"eqpektkcvkqp"rtqeggfkpi u"d { "j cxkpi "eqo o wpkecvkqp"y kyj "vj g"ceewugf" kp"yj g"r tgugpeg"qh"yj g"Eqo o kwgg0'Rrgcug"pqvg"yj cv"kp"uwej "eqpekrkcvkqp"yj g"eqo r rckpcpv'ecppqv"f go cpf "o qpgvct {" eqo r gpucvkqp0"
- 1440 Vj g"Eqo o kwgg"uj cmi'r tqxkf g"vj g"eqr kgu"qh'vj g"ugwngo gpv'cu't geqtf gf "f wtkpi "eqpeknkcvkqp"vq"vj g"ci i tkgxgf "go r nq { gg" cpf 'vj g'tgur qpf gpv0"
- kx0Ki'y g"o cwgt"j cu'dggp"ugwrgf 'd{ "eqpekrkcwlqp"dww'y g"tgur qpf gpv'ku'pqv'eqo r n{ kpi "y ky "y g"ygto u'cpf "eqpf kwlqpu."y g" ci i tkgxgf 'r ctv{ "ecp"crrtqcej 'vj g"Eqo o kwgg'hqt"Tgf tguucn0"
- x0Vj g"Eqo o kwgg"y km's wguwlqp"dqyj "yj g"eqo r nckpcpv"cpf "yj g"cmgi gf "ceewugf "ugr ctcvgn(0"Kt"tgs wktgf. "yj g"r gtuqp"y j q" j cu"dggp"pcogf"cu"c"y kapguu"y km"pggf"vq"rtqxkfg"yjg"pgeguuct{"kphqtocvkqp"vq"cuukuv"kp"tguqnxkpi"yjg"ocwgt" ucvkuhcevqtkn{0"
- xk0Vj g"Eqo o kwgg"uj cm'ecm'wrqp"cm'y kwpguugu"o gpvkqpgf "d{"dqvj "vj g"r ctvkgu0"
- xkt0Vjg"Eqookweg"ecp"cum'hqt"ur gekhle"fqewogpwu"htqo"c"r gtuqp"kh"k/"hggnu"yjcv"yjg{"ctg"korqtvcpv"hqt"yjg"rwtrqug"qh" kpxguvki cvkqp0"
- xkkO Vj g"eqor nekpepv'j cu"yj g"qr klqp"vq"uggmi'vtepuhgt"qt"ngexg"uq"yj ev'yj g"kps wkt { "r tqeguu"ecp"eqpvkpwg"uo qqyj n{ "cpf "vq" qh"5"o qpyj u0"Ngcxg"i tcpygf "wpf gt"yj ku"r tqxkukqp"y km'dg"r ckf "rgcxg"cpf "y km'pqv'dg"eqwpygf "kp"yj g"pwo dgt"qh'rgcxgu" $\label{eq:control_co$ nggr kpi "kp"o kpf "vj g"pcwtg"qh"y qtm'qh"vj g"eqo r nckpcpv"j gcnj "cpf "o gpvcn'eqpf kkqp0J qy gxgt."vj g"eqo r nckpcpv'kı" wpf gt"c"i qqf "hcksj "qdrki cwlqp"cpf "uj cm'pqv'cdwug"yj g"r tqeguu'vq"tgs wguv'wplwuvkhledn("hqpi "r gtkqf u"qh'rgexg. "hggr kpi "kp" o kpf "vj g"geqpqo ke"ghhgewi'qhi'yj g"gcxg"vq"vj g"qti cpkl cvkqp0"Vj g"Eqo o kwgg"uj cmij cxg"vj g"f kuetgvkqp"vq"i tcpv'ngcxg"qh" cp"crrtqrtkcvg"f wtcvkqp. "f gr gpf kpi "qp" yj g"hcevu"cpf "ektewo uvcpegu"qh" yj g"ecug. "qt" i tcpv'cp"cngtpcvg" o gcuwtg" uwej "cu" vtcpuhgttkpi 'y g'go r m{ gg'qt'y g'ceewugf .''cu'kk'f ggo u'hk0''

Y j gtg'hgcxg'ku'i tcpvgf 'vq'vj g'eqo r nckpcpv.'vj g'Eqo o kwgg'vj cm'o cng'dguv'cwgo r wi'vq'gpuwtg'ur ggf { 'eqo r ngwlqp'qh'vj g' kps wkt { "rtqeguu"cpf "vq"o kpko kl g"cf xgtug"geqpqo ke"eqpugs wgpegu"vq"yj g"Eqo rcp{"ctkukpi "qw"qh"yj g"cdugpeg"qh"yj g" eqo r nckpcpv'htqo 'vj g'y qtmr nceg0"

- kO Vj g"eqo r nckpcpv'cpf "vj g"ceewugf "uj cm'dg"kphqto gf "qh"vj g"qweqo g"qh"vj g"kpxguvki cvkqp0'Vj g"kpxguvki cvkqp"uj cm'dg" eqo r ngvgf "y ky ky kp"5"o qpvj u"qh"vj g"tgegkr v"qh"vj g"eqo r nckpv0"Kir'yj g"kpxguvki cvkqp"tgxgcnu"vj cv"vj g"eqo r nckpcpv"j cu"dggp" ugzwcm("j ctcuugf "cu'encho gf ."yj g"ceewugf "y km'dg"uwdlgevgf "\q"f kuekr nkpct { "cevkqp"ceeqtf kpi n(0"
- coVj g'tgrqtv'qh'vj g'kpxguki cvkqp'tij cm'dg'tuwrnkgf 'kq'vj g'go rmq{gt"*qt'vj g'F kuxtkev'Qhhkegt+; 'yj g'ceewugf 'cpf 'vj g'eqo rnckpcpv' y ky ky '32'f c $\{u''qh''eqo\ r\ ngvkqp''qh''y\ g''kpxguvki\ cvkqp0'''$
- d0Vj g"go r nq{gt"qt"yj g"F kıntkev"Qhhkegt"y kni'cev'qp"yj g"tgeqo o gpf cvkqpu"qh'yj g"Eqo o kwgg"y kıj kp'82"f c{u"qh'yj g'tgegkr v'qh" yj g'tgrqtv0"
- 140 Vj g'eqpvgpvu'qh'yj g'eqo r nckpv'o cf g. 'yj g'kf gpvkx{ "cpf 'cf f t guugu'qh'yj g'ci i t kgxgf 'go r nq{ gg. 't gur qpf gpv'cpf 'y kxpguugu." cp{'lphqtocvlqp'tgrcvlpi ''q'eqpeldcvlqp''cpf'lps vlkt{'rtqeggf lpi u.'tgeqo o gpf cvlqpu'qh''yj g''lfovgtpcn'Eqo o kvgg''cpf''yj g'' cevlqp"\cngp"d{"\j g"go r nq{gt"uj cm'pqv'dg"r wdrkuj gf ."eqo o wplecygf "qt"o cf g"npqy p"\q"\j g"r wdrke."r tguu"cpf "o gf kc"\p" cp{ 'o cppgt0'

Cp{"rctv{"ciitkgxgf"d{"vjg"tgrqtv"ecp"rtghgt"cp"crrgcn"kp"vjg"crrtqrtkcvg"Eqwtv"qt"Vtkdwpcn"kp"ceeqtfcpeg"ykyj"vjg"ugtxkeg" twrgu'y kj kp"; 2"f c{u'qh'vj g'tgeqo o gpf cwqp"dggp"i kxgp"vq"vj g''go r m{gt"I'F kwtkev'Qhhlegt0"

,,



Fluelr rlspct { 'Cevlqp<'

 $Y\ j\ gtg"cp{"o\ kveqpf\ wev"ku"hqwpf"d{"vj\ g"Eqo\ o\ kvgg."crrtqrtkcvg"f\ kvekr\ nkpct{"cevkqp"uj\ cm'dg"vcngp"ci\ ckpuv"vj\ g"ceewugf\ 0'} F\ kvekr\ nkpct{"cevkqp"o\ c{"kpenvf\ g"vcpuhgt."y\ kj\ j\ qnf\ kpi\ "rtqo\ qvkqp."uwur\ gpukqp"qt"gxgp"f\ kvo\ kvvcn0'Vj\ kv"cevkqp"uj\ cm'dg"kp"\ cf\ f\ kvkqp"vq"cp{"rgi\ cn'tgeqwtug"uqwi\ j\ v'd{"vj\ g"eqo\ r\ nckpcpv0"}}$

Kliki/kulhqwpf "qwi'yi tqwi j "gxkf gpeg"d{ "'yi g'Eqo o kwgg"yi cv'yi g"eqo r nckpcpv'j cu'o cnkekqwun{ 'i kxgp'hcnug'eqo r nckpv'ci ckpuv'yi g" ceewugf . 'f kuekr nkpct { "cevkqp"uj cm'dg''cngp"ci ckpuv'yi g"eqo r nckpcpv'cu'y gm0""

 $Tgi\ ctf\ rguu''qh''y\ g''qweqo\ g''qh''y\ g''eqo\ r\ rckpv''o\ cf\ g''kp''i\ qqf''lckyi\ .''y\ g''go\ r\ rq\{gg''nqf\ i\ kpi\ ''y\ g''eqo\ r\ rckpv''cpf''cpf\{''r\ gtuqp''\ rtqxkf\ kpi\ ''kphqto\ cvkqp''qt''cpf\{''y\ kpguu.''y\ kn''dg''rtqyevgf''ltqo\ ''cpf''lqt''vy' g''y\ kpguu''ctg''pqv''xkevko\ ky gf''qt''f\ kuetko\ kpcvgf''\ ugzwcn''j\ ctcuuo\ gpv.''yj\ g''Eqo\ o\ kwgg''uj\ cm''gpuwtg''yj\ g''eqo\ r\ rckpcpv''qt''yj\ g''y\ kpguu''ctg''pqv''xkevko\ ky gf''qt''f\ kuetko\ kpcvgf''\ ci\ ckpuv''d\{''yj\ g''ceewugf\ ''cryg''yt''yj\ g''ceewugf''\ ci\ ckpuv''yj\ g''eqo\ r\ rckpcpv''yj\ kg''yj\ g''ceewugf''\ ci\ ckpuv''yj\ g''eqo\ r\ rckpcpv''yj''yj\ g''Eqo\ o\ kwgg''ci\ ckpuv''cpf''uwej''eqo\ r\ rckpvu''yj\ kej''ctg''\ hqwpf''i\ gpwkpg0'''$

Vj ku'r qrke{"uj cm'dg"f kuugo kpcvgf "vq"gcej "go r rq{gg"qh'vj g"Eqo r cp{"cu'y gm'cu'pgy "tget wkuu'y j q"y km'j cxg"vq"cempqy rgf i g" yj cv'vj g{"j cxg"tgcf "cpf "wpf gtuvqqf "vj g"r qrke{"cpf "vj cv'vj g{"uj cm'cdkf g"d{"vj g"r qrke{0"

Qwt 'Mg{ 'O cpci gt kcnRgt uqppgrlcpf 'Ugpkqt 'O cpci go gpv'''

Kp"cffkkqp"vq"qwt"Ocpci kpi "Fktgevqt"cpf"Pqp/Gzgewkxg"Fktgevqt."yjqug"fgvcknu"jcxg"dggp"rtqxkfgf"wpfgt"rctcitcrj"cdqxg"\kngf"-*DtkghRtqlkng'qhlqwt'Fktgevqtus\"ugvhqtyj"dgqny "ctg'\jg"fgvcknu"qh'qwt"Mg{ 'Ocpcigtkcn'Rgtuqppgn'cpf"Ugpkqt""

O cpci go gpv'cu'qp''y g'f cvg''qh'hkkpi ''qh''y ku'F tchv'Rtqur gewu<''

Rtqhkg"qh'qwt"F ktgevqtö."ugg"öQwt"O cpci go gpvö"ej cr vgt"dgi kppkpi "qp"r ci g"339"qh'vj ku"F tchv'Rtqur geww.0"

O t0J ctdj clcp'Upi j vj gvj k'/'Y j qrg'Vko g'Fktgevqt'''

Hqt"f gvcktu."ugg"õDtkgh"Rtqhktg"qh"qwt"F ktgevqtö."ugg"õQwt"O cpci go gpvö"ej cr vgt"dgi kppkpi "qp"r ci g"339"qh"vj ku"F tchv' Rtqur geww.0'

Oul J ggpcn J kaguj 'Tcvj qf ''' Eqorcp ('Uget gwct {'('Eqorn kcpeg'Qhhkegt < Ou0 J ggpcn J kaguj 'Tcvj qf ."ci gf "46" {gctu"ku" yj g"Eqorcp { "Uget gwct { "cpf 'Eqorn kcpeg" Qhhkegt "qh "qwt"Eqorcp { 0Uj g"ku "crqkpygf" cu "Eqorcp { "Uget gwct { "cpf 'Eqorn kcpeg" Qhhkegt "qh "qwt"Eqorcp { "cv' yj g" oggwlapi "qh "yj g" Dqctf" qh "Fkgevqtu" ykj "ghhgev "htqo" Fgegodgt" 9."42450 "Uj g" ku "cp" Cuuqekcyg" Ogodgt "qh "Kayukwwg" qh "Eqorcp { "Uget gwct kgu "qh "Kayt kcj" cxkapi "Ogodgt "y 1000 27:7""

Vgto ''qh''Qhheg''y kaj ''gzrktcalqp''	Crrqkpvgf"cu"Eqorcp{"Ugetgvct{"("Eqornkcpeg"Qhhkegt"yksj"ghhgev'htqo"
Fcvg''	F gego dgt'9."42450"
F gvcku'qh'igt xleg'eqpvt cev'	P qv'Cr r rlecdrg''
Hwpevkqp'cpf 'ct gcu'qh'gzr gt lgpeg''	Tgurqpukdng"hqt"eqorn(kpi"ykyj"rtqxkukqpu."tgiwncvkqpu."cevu"crrnkecdng"vq"yjg"
	ego r cp $\{0'$

Cm'qwt 'Mg{ 'O cpci gtkcn'Rgtuqppgn'cpf 'Ugpkqt 'O cpci go gpv'ctg'r gto cpgpv'go r nq{ ggu'qh'qwt 'Eqo r cp{0'''

Tgrevlqpuj kr'lqhlMg{ 'O cpci gt krılRgt uqppgrlcpf 'Ugpkqt 'O cpci go gpv'y kvj 'lqwt 'Fkt gewqt u 'Rt qo qwgt u'cpf 'I'qt 'lqvj gt ''' Mg{ 'O cpci gt krılRgt uqppgrlcpf 'Ugpkqt 'O cpci go gpv''

Uj ct gj qnf lpi 'qh'\'j g'Mg{ 'O cpci gt lcnlRgt uqppgnlcpf 'Ugplqt 'O cpci go gpv'

Gzegr v'cu''f kvenqugf 'kp''õ*Uj ct gj qrf kpi "qh'qwt "F kt gevqt u*ö'pqpg"qh'qwt 'MO Ru''j qrf u'cp{ 'Gs wkx{ "Uj ctgu''qh'qwt 'Eqo r cp{ ''cu''qp'' y g'f cvg''qh'hkrkpi ''qh'yj ku''F tchv'Rtqur gewu0"'

"

-



Dqpwu'qt 'Rt qllw'Uj et lpi 'Rrcp'lqt 'qwt 'Mg{ 'O epei gt le nlRgt uqppgnlepf 'Ugplqt 'O epei go gpv''

Pqpg"qh"qwt"Mg{ 'O cpci gtkcn"Rgtuqppgn"cpf "Ugpkqt"O cpci go gpv'kn"c"r ctv{ "'q"cp{ "dqpwu"qt"r tqhkv/uj ctkpi "r rcp0"

Rc{o gpv'qt'dgpghv'\q'Mg{'O cpci gt k:rlRgt uqppgrlcpf 'Ugpkqt'O cpci go gpv'qh'qwt'Eqo rcp{'''

Gzegr v'cu''f kuenqugf "kp"vj ku'F tchv'Rtqur gewu. "pq"co qwpv'qt"dgpghkv'j cu''dggp"r ckf "qt"i kxgp"y ky kp''vy q''r tgegf kpi "{ gctu'qt 'ku" $kpvgpf \ gf \ "vq" dg"r \ ckf \ "qt" \ i \ kxgp" \ vq" cp \{ \ "qh" \ iy \ g" \ Mg \{ \ "O \ cpci \ gt \ kcn' \ Rgt \ uqppgn' \ cpf \ "Ugpkqt" \ O \ cpci \ go \ gpv' \ gzegr \ v' \ iy \ g" \ pqto \ cn' \ n' \ properties \ (n') \ properties \ propertie$ qh''qwt ''Mg{ 'O cpci gt
kcn''Rgtuqppgn'cpf ''Ugpkqt 'O cpci go gpv0'''

Kpvgt guv'qh'Mg{ 'O cpci gt kcn'Rgt uqppgn'cpf 'Ugpkqt 'O cpci go gpv''

Gzegr v'cu'f kuenqugf "kp"vj ku'F tchv'Rtqur gewu."pqpg"qh"qwt "Mg{ "O cpci gtkcn'Rgtuqppgnøu"cpf "Ugpkqt "O cpci go gpwi"j cxg"cp{ " ctg"gpvkrgf "vq"cu'r gt"vj gkt "vgto u'qh'crrqkpvo gpv'cpf 'tgko dwtugo gpv'qh'gzr gpugu'kpewttgf "d{ 'vj go 'f wtkpi 'vj g'qtf kpct { 'eqwtug'' qh'dwukpguu0"

Hwt y gt. "y gtg"ku"pq"cttcpi go gpv'qt"wpf gtucpf kpi "y ky "y g"o clqt"uj ctgj qrf gtu. "ewrqo gtu. "uwr r rkgtu"qt"qyj gtu. "r wtuwcpv'\q" y j kej "cp{ "qh"qwt "Mg{ 'O cpci gt kcn"Rgtuqppgn"cpf "Ugpkqt "O cpci go gpv"j cxg "dggp"cr r qkpvgf 0'

$Ej~cpi~gu'lp'Mg\{~'O~cpci~gt~lcrlRgt~uqppgrlcpf~'Ugplqt'O~cpci~go~gpv'lp''j~g'Ncuv'Vj~tgg'[~gctu'''~lcrl']$

 $Ugv''hqtv'j "dgrqy ."ctg"v'j g"ej cpi gu"kp"qwt"Mg\{"O cpci gtkcrl'Rgtuqppgrl'cpf "Ugpkqt"O cpci go gpv''kp"v'j tgg"\{gctu"l'', gctu'', gctu''$ ko o gf kcvgn("r tgegf kpi "vj g"f cvg"qh"hkrkpi "qh"vj ku"F tchv"Rtqur gewu.<""

Pco g''	Fguli pcvkqp''	Fcvg'qh'Crrqkpvo gpv1'	Tgcuqp''
		ej cpi g''	
J ggpcn'J kguj "Tcyj qf"	Eqorcp{"Ugetgvct{"cpf "Eqornkcpeg"Qhhlegt"	F gego dgt '9. '4245"	Crrqkpvo gpv'
Lci lk/Ukpi j 'Fj kmp"	Ej kgh'Hkpcpekcn'Qhhkegt"	F gego dgt '9. '4245"	Crrqkpvo gpv"
Lci lk/Ukpi j 'F j kmp"	Ocpci kpi "Fktgevqt"	F gego dgt"; ."4245"	Crrqkpvo gpv'
J ctdj clcp"Ukpi j yj gyj k"	Yjqng''Vkog'Fktgevqt"("Ejcktocp"	F gego dgt"; ."4245"	Crrqkpvo gpv'

Vj g"cwtkklqp"qh"\j g"ng{"o cpci go gpv"r gtuqppgn"cpf "Ugpkqt"O cpci go gpv"ku"cu"r gt"\j g"kpf wuxt{"uvcpf ctf u0"

Go rnq{gguø'Uvqem!Qrvkqp'Rncp'''

Cu'qp'f cvg'qh'y ku'F tchv'Rtqur gewu. "qwt'Eqo r cp{ 'f qgu'pqv'j cxg''cp{ 'go r rq{ gg'uvqem'qr vkqp'r rcp'qt'r wtej cug'uej go gu''' hqt 'qwt 'go r nq { ggu0"

Nqcpu'\cngp'd{ 'F ktgevqtu''I'Mg{ 'O cpci go gpv'Rgtuqppgn'cpf 'Ugpkqt'O cpci go gpv'

Qwt'Eqo r cp{"j cu'pqvi tcpvgf "cp{"nqcpu'vq'vj g'Fktgevqtu'cpf lqt'Mg{"O cpci go gpv'Rgtuqppgn'cpf "Ugpkqt'O cpci go gpv'cu'qp" yj g'f cvg''qh''yj ku'F tchv'Rtqur gewu0'''



QWT'RTQO QVGTU'CPF'RTQO QVGT'I TQWR''

Qwt'Rt qo qvgt u''

Vj g'Rtqo qygtu'qh'qwt'Eqo r cp{ 'ctg'O t OLci lk'Upi j 'Fj kmpp'cpf 'O tuOP cxpggv'Mcwt0''

 $Cu'qp''y g''f cvg''qh''y ku''F tchv'Rtqur gewu. ''qwt''Rtqo qvgtu''j qrf u''; .4; ..: 36''Gs wkw{ ''Uj ctgu. ''eqpurkwwkpi ''; ; Q: ' ''qh''y g''r tg''o''Kuwwg'' | Yu'y ctgu. ''eqpurkwwkpi ''; ; Q: ' ''qh''y g''r tg''o'' Kuwwg'' | Yu'y ctgu. ''eqpurkwwkpi ''; ; Q: ' ''qh''y g''r tg''o'' Kuwwg'' | Yu'y ctgu. ''eqpurkwwkpi ''; ; Q: ' ''qh''y g''r tg''o'' Kuwwg'' | Yu'y ctgu. ''eqpurkwwkpi ''; ; Q: ' ''qh''y g''r tg''o'' Kuwwg'' | Yu'y ctgu. ''eqpurkwwkpi ''; ; Q: ' ''qh''y g''r tg''o'' Kuwwg'' | Yu'y ctgu. ''eqpurkwwkpi ''; ; Q: ' ''qh''y g''r tg''o'' Kuwwg'' | Yu'y ctgu. ''eqpurkwwkpi ''; ; Q: ' ''qh''y g''r tg''o'' Kuwwg'' | Yu'y ctgu. ''eqpurkwwkpi ''; ; Q: ' ''qh''y g''r tg''o'' Kuwwg'' | Yu'y ctgu. ''eqpurkwwkpi ''; ; Q: ' ''qh''y g''r tg''o'' Kuwwg'' | Yu'y ctgu. ''eqpurkwwkpi ''; ; Q: ' ''qh''y g''r tg''o'' Kuwwg'' | Yu'y ctgu. ''eqpurkwwkpi ''; ; Q: ' ''qh''y g''r tg''o'' Kuwwg'' | Yu'y ctgu. ''eqpurkwwkpi ''; ; Q: ' ''qh''y g''r tg''o'' Kuwwg'' | Yu'y ctgu. ''qh''y g''r tg''o'' | Yu'y ctgu. ''qh''y ctgu. ''qh''y g''r tg''o'' | Yu'y ctgu. ''qh''y ctgu. ''qh''y ctgu. ''qh''y g''r tg''o'' | Yu'y ctgu. ''qh''y ctgu.$ $kuw gf."uwduetkdgf"cpf"r\ ckf/wr"gs\ wkx{"uj\ ctg"ecr\ kcn'qh''qwt"} Eqo\ r\ cp{\{0'Hqt"f\ gvcknu"qh''yj\ g"dwkrf/wr"qh''qwt"Rtqo\ qvgtu\phi''\}}$ uj ctgj qrf kpi "kp"qwt"Eqo r cp{."ugg"õEcr kcn"Utvwewtgö"qp"r ci g"78"**J kwqt{''qh'\j g'Gs wkv{''Uj ctg'Ecr kcn'j grf 'd{''qwt''}** Rt qo qvgt 'bpf 'Rt qo qvgt 'l t qwr 0'qh' 'y ku'F tchv'Rt qur gewu0''

Fgvcku'Qh'Qwt'Rt qo qvgt u''



Ot0Lci lk/Upi j 'Fj kmp."ci gf "65"{ gctu."j cu"c"f gi tgg"kp" Dcej gmt "qh"Eqo o gteg"htqo "Vj g"Dj cy cpkr wt "Gf weckqp" Uqekgv('Eqnrgi g. 'Mqmcvc0J g'ku'y g'Hqwpf gt 'cpf 'qpg'qh'y g' Hktuv'F ktgevqtu'qh'vj g'Eqo r cp{.'hcvgt'j g'y cu'f guki pcvgf 'cu' yj g"O cpci kpi "Fktgevqt"qh"yj g"Eqo r cp{ "y kj "ghhgev"htqo ' ; yj "F gego dgt "4245" \km": yj "F gego dgt "424: "hqt "c"r gt kqf "7" { gctu0J g'j cu'gzr gtkgpeg'qh'o qtg'vj cp'38"{ gctu'kp'r qy f gt" Eqcvkpi "Kpf wuxt { 0.5 g"j cu'r tqxgp"cdkrkv{ "\q"s wkemn{ "cpcn{ ug" $mg\{$ " dwukpguu " f tkxgtu " cpf " f gxgrqr " uvtcvgi kgu0' <math display="inline">J g " ku " cp " gpgti gwle "rgcf gt "rpqy p"hqt" j ku "cdkrkv ("vq "et gcvg 'uweeguuhwil" qweqo gu'lip'eqo r ngz 'ukwcvkqpu0'

S werkleevkqp<Deej grqt 'qh'Eqo o gteg'''

Fcvg'qh'Dkt vj <"Lvn{ "49."3; : 2"

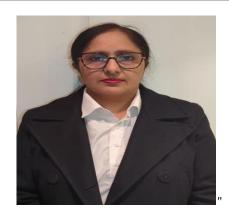
Tgulf gpvlcn' Cfftgun<' 3; 9." Flco qpf " J ctdqvt" Tqcf" Dgj crc'Mqmcvc/'922256."Y guv'Dgpi cn'Kpf kc"

Pcvkqpcrkv{ <"Kpf kcp"

RCP<'CK, RF; 768M'

Fkt gevqt uj kr 'J grf <"'

O kpf j ki j y c{ ''Vgej pq
mi kgu'Rtkxcvg'Nko kvgf ''



Otul P cxpggv' Mcwt. "ci gf "68" { gctu. "Uj g"j cu"c" F gi tgg" kp" Dcej grqt"qh"Uelgpeg"htqo "Rwplcd"Wplxgtukx{0'Uj g"cnuq" j qnfu"c"f gi tgg"kp"O cuvgt"qh"Gf wecvkqp"htqo "Rwplcd" Wpkxgtukx{ "cpf "O cuvgt "qh"Ctvu"kp"Rwplcdk"htqo "Rwplcd" Wpkxgtukx{0'Uj g''y cu''cr r qkpvgf ''cu'P qp/Gz gewkxg'F ktgevqt'' qh'y g'Eqo r cp { 'y ky "ghhgevhtqo "F gego dgt "44."4239."Uj g" ku'cuuqekcygf 'y kij 'yj g'Eqo r cp{ 'ukpeg'kvu'Kpeqtr qtcvkqp0'

S werktheevlap<'Deej grqt''qh''Uekgpeg''''

Feyg'qh'Dkt yj < Lepwet { "23."3; 99"

Tgulf gpvlcn' Cfftguu 3; 9." Flco qpf "J ctdqvt" Tqcf" Dgj crc'Mqmcvc''/922256."Y guv'Dgpi cn'Kpf kc"

Pcvkqpcrkv{ < "Kpf kcp"

RCP<EMHRM: ;95D"

Fkt gevqt uj kr 'J grf <"'

P KN''



FGENCTCVKOP"

Y g"f gentg"cpf "eqphkto "ý cv'ý g"f gvckru"qh'ý g"Rgto cpgpv'Ceeqwpv'P wo dgt."Ccf j cct "Ectf "P wo dgt "cpf "F tkxkpi "Nkegpug" P wo dgt."Rcuur qtv'P wo dgt "cpf "Dcpm'Ceeqwpv'P wo dgt "qh'qwt "Rtqo qvgt "y km'dg"uwdo kwgf "vq"ý g"Uqem'Gzej cpi g"Ng0"DUG" Nko ksgf .'y j gtg'ý g'Gs wks{ "Uj ctgu'ctg"r tqr qugf "vq"dg'nkrvgf "cv'ý g"ko g'qh'hkrkpi "ý ku'F tchv'Rtqur gewuu0"

WPFGTVCMIPI U'CPF'EQPHITO CVIQPU'

 $Pqpg''qh''qwt''Rtqo\ qvgtu''qt''Rtqo\ qvgt''I\ tqwr\ ''Eqo\ r\ cp\{''qt''r\ gtuqp''kp''eqpvtqn''qh''qwt''eqo\ r\ cp\{''j\ cu''dggp<'''ll\ properties of the properties of the$

r tqj kdksgf "qt"f gdcttgf "htqo "ceeguukpi "qt"qr gtcvkpi "kp"vj g"ecr kscn'o ctngv"qt"tguvtckpgf "htqo "dw{kpi."ugnkpi "qt"f gcnkpi "kp"ugewtkkgu"vxpf gt"cp{ "qtf gt"qt"f ktgevkqp"r cuugf "d{ "UGDKqt"cp{ "qvj gt"cwj qtkx{ "qt="

tghwugf "hkukpi "qh'cp{ "qh'vj g"ugewtkkgu'kuuwgf "d{ "uwej "gpvkx{ "d{ "cp{ "uvqem'gzej cpi g."kp"Kpf kc"qt"cdtqcf ="

 $\label{thm:constraint} Vj gtg"ctg"pq"f ghcwnu"lp"tgur gev'qh'r c o gpv'qh'lpvgtguv'cpf "r tlpekr cn'vq"vj g"f gdgpwtg"l'dqpf "l"hkzgf "f gr qukv"j qnf gtu." dcpmu."HKi"d{ "qwt "Eqo r cp{."qwt "Rtqo qvgtu."I tqwr "Eqo r cp{"cpf "Eqo r cp{"r tqo qvgf "d{"vj g"r tqo qvgtu"f wtkpi "vj g" r cuv'vj tgg"{ gctu="}}$

Vj g'hkki cvkqp'tgeqtf.''yj g'pcwtg'qh'hkki cvkqp.''cpf 'urcwu'qh'hkki cvkqp'qh'qwt'Eqo r cp{.''Rtqo qvgtu.''I tqwr 'eqo r cp{'cpf' Eqo r cp{"rtqo qvgf"d{" vj g" Rtqo qvgtu" ctg" f knemugf " kp" ej cr vgt" vkngf " õ**Qwnacpf kpi ''Nkki cvkqpu''cpf''O cvgt kcn'' Fgxgnqr o gp w**ö''dgi kppkpi "qp"r ci g''376''qh''yj ku'F tchv'Rtqur gewu0'

 $Pqpg"qh"qwt"Rtqo qvgtu"r gtuqp"kp"eqpvtqn'qh"qwt"Eqo r cp{"ctg"qt"j cxg"gxgt"dggp"c"rtqo qvgtu."f ktgevqt"qt"r gtuqp"kp" eqpvtqn'qh'cp{"qvj gt'eqo r cp{"y j kej 'kulf gdcttgf 'htqo 'ceeguukpi 'vj g'ecr kcn'o ctngwi'wpf gt'cp{ 'qtf gt'qt'f ktgevkqp'r cuugf '' d{"vj g'UGDKqt"cp{"qvj gt'cwj qtkv{0'}}}$

EJ CPI G'IP 'EQPVTQN'QH'VJ G'EQORCP["

Vj gtg'j cu'pqv'dggp'cp{ "ej cpi g'kp''yj g'eqpvtqn'qh'qwt'Eqo r cp{ 'kp''yj g'hkxg''{ gctu'ko o gf kcvgn('r tgegf kpi ''yj g'f cvg''qh''yj ku'F tchv'' Rtqur gewwl0'

GZRGTKGPEG'QHQWT'RTQOQVGTURP'VJG'DWURPGUUQH'QWT'EQORCP["

Hqt"f gvckul"kp"tgrcvkqp"vq"gzr gtkgpeg"qh"qvt"Rtqo qvgtu"kp"vj g"dwukpguu"qh"qvt"Eqo r cp $\{$."r rgcug"tghgt"vj g"ej cr vgt"õQwt'' O cpci go gpvö"dgi kppkpi "qp"r ci g"339"qh"vj ku'F tchv'Rtqur gewu0'

IP VGTGUV'QH'QWT'RTQO QVGT"

Qwt"Rtqo qvgtu"ctg"lpvgtguvgf "lp"qwt"Eqo r cp{"vq"yi g"gzvgpv"*k+"yi cv"yi g{"j cxg"rtqo qvgf "qwt"Eqo r cp{."cpf "*kk+"vq"yi g"gzvgpv" qh"yi gkt"uj ctgj qrf kpi "kp"qwt"Eqo r cp{0' Hqt"f gvcknu"qp"uj ctgj qrf kpi "qh"qwt"Rtqo qvgtu"kp"qwt"Eqo r cp{."ugg"õ*Ecr kvcn''***Utwewtgö"qp"r ci g'78'qh'yi kt'F tch'Rtqur gewu0'

Gzegr v'cu'uwcyf "qyj gty kug "kp" j ku'F tchv'Rtqur gewu." y g"j cxg"pqv'gpygtgf "kpvq"cp{"eqpvtcev." ci tggo gpwi'qt"cttcpi go gpwi'lp" y j kej "qwt"Rtqo qygtu"ctg" f ktgevn("qt "kpf ktgevn("kpvgtguvgf "cpf "pq" r c{o gpvu"j cxg"dggp"o cf g"vq" j go "kp"tgur gev'qh" j g" eqpvtcevu." ci tggo gpvu'qt "cttcpi go gpvu'y j kej "ctg'r tqr qugf "vq"dg"o cf g"y kij "iy go "kpenwf kpi "iy g'r tqr gtvkgu'r wtej cugf "d{"qwt" Eqo r cp{"cpf "f gxgrqr o gpvt'ki j wu"gpvgtgf "kpvq"d{"qwt" Eqo r cp{"qyj gt" y cp"kp" y g"pqto cn'eqwtug"qh'dwukpguu0'Hqt"hwty gt" f gvckru. "r rgcug'tghgt" y g"ugevkqp" knzgf "io *Tgrc vgf "Rct v{"Vtcpucevkqpu"o"kp"ej cr vgt"o *HlpcpekcnUvcvgo gpvu'cu'T guac vgf o"qp"r ci g" 359"qh'iy ku'F tchv'Rtqur gewu0'

Kpvgtguv'kp'rtqo qvkqp'qh'qwt'Eqorcp{''

 $Qwt'Eqo\ r\ cp{'ku'ewttgpwf''tqo\ qvgt''dy''g''Rtqo\ qvgtu''kp''qtf\ gt''q''ectt{''qp''kw''r\ tgugpv''dwwlpguu0Qwt''Rtqo\ qvgtu''tcg''kpvgtguvgf'' kp''qwt''Eqo\ r\ cp{''vq''yj\ g''gzvgpv''qh''yj\ gkt''uj\ ctgj\ qnf kpi ''cpf''f ktgevqtuj kr''kp''qwt''Eqo\ r\ cp{''vp''yj\ g''f kxkf\ gpf''f genctgf.''kh''cp{.''d{''}''qwt''Eqo\ r\ cp{0''}} enctgf.''kh''cp{.''d{''}'yj\ g''t kxkf\ gpf''f genctgf.''kh''cp{.''d{''}'yj\ g''t kxkf\ gpf''f genctgf.''kh''cp{.''d{''}'$



$\textit{Kpvgt guv'kp''ij g''rt qr gtv}\{.'\textit{lcpf}.'\textit{leqp ust we skqp''qh'dwhf kpi}.'\textit{lwrr n}('qh'b\ c\ ej\ \textit{kpgt}\{.'\textit{gve}\,0'', \textit{logt}, \textit{logt}\}\}$

Gzegr v'cu'o gpvkqpgf "kp"yj g"ej cr vgt "kwrgf " \div Qwt 'Dwukpguuø'dgi kppkpi "qp"r ci g"; 5"qh'yj ku'F tchv'Rtqur geww. "qwt "Rtqo qvgtu"f q" pqv'j cxg"cp{ "qvj gt "kpvgt guv'kp"cp{ "t tqr gt v{ "ces wkt gf "qt"r tqr qugf "vq"dg"ces wkt gf "d{ "qwt "Eqo r cp{ "kp"c'r gt kqf "qh"4" "vy q+"{ gctu" dghqtg'hkrkpi "qh'yj ku'F tchv'Rtqur geww."qt "kp"cp{ "vtcpucevkqp"d{ "qwt "Eqo r cp{ "hqt"ces wkukvkqp"qh'hcpf . "eqpuvtwevkqp"qh'dwkrf kpi "qt"uwr r n{ "qh'o cej kpgt{ "qt"cp{ "qvj gt "eqpvtcev."ci tggo gpv'qt"cttcpi go gpv'gpvgtgf "kpvq"d{ "qwt "Eqo r cp{ "cpf "pq"r c{o gpwi" j cxg"dggp"o cf g"qt"ctg'r tqr qugf "vq"dg"o cf g"kp"tgur gev'qh'vj gug"eqpvtcew. "ci tggo gpwu'qt "cttcpi go gpwu'0'

Kpvgtguv'kp'qwt'Eqorcp{'ctkukpi 'qwv'qhldgkpi 'c'b godgt'qhlc'lkto'qt'eqorcp{''

 $Qwt"Rtqo\ qvgtu"ctg"pqv"kpvgtguvgf"cu"o\ go\ dgt"qh"c"hto\ "qt"eqo\ r\ cp{."cpf"pq"uwo\ "j\ cu"dggp"r\ ckf"qt"ci\ tggf"vq"dg"r\ ckf"vq"yj\ go\ "qt"vq"uwej\ "hto\ "qt"eqo\ r\ cp{"kp"ecuj\ "qt"uj\ ctgu"qt"qyj\ gty\ kug"d{"cp{"r\ gtuqp"gkj\ gt"vq"kpf\ weg"uwej\ "r\ gtuqp"vq"dgeqo\ g."qt"s\ wcnkh{"vg'uwej\ "hto\ "qt"eqo\ r\ cp{"kp"eqppgevkqp"y\ kyj\ "yj\ g"r\ tqo\ qvkqp"\ qt"hqto\ cvkqp"qh"qwt"Eqo\ r\ cp{0'}$

Kovgt guv'kp 'qwt 'Eqorcp{'qvj gt 'vj cp'cu'Rt qo qvgt u''

Gzegr v'cu'o gpvkqpgf "kp"ij ku'ej cr vgt "cpf "ej cr vgtu'vkxrgf "õ*Qwt 'Dwulpgui*ö."õ"*Qwt "J kwqt { 'bpf 'Egt w kp 'Eqtr qt cvg'O c wgt u*ö." õ*Qwt 'O cpci go gpv*ö"cpf "õ*Tguac vgf 'Hhp c p ekc n'Uw vgo gp vi*ö"dgi kppkpi "qp"r ci gu"; 5."336."339"cpf "359."tgur gevkxgn{."qwt" Rtqo qvgtu'f q"pqv'j cxg"cp{ "qvj gt "kpvgtguv'kp"qwt "Eqo r cp{0'

Rc{o gpv'qt'Dgpghw'iq'ij g'Rt qo qvgtu'qt'Rt qo qvgt'I t qwr'lp'ij g'hc w'4'*vy q+'{gctu''

Gzegr v'cu'uvcvgf "cdqxg"hp"ej cr vgtu"õ**Hhpcpek: d'Uvc vgo gp w'c'u'T gwc vgf** ö"dgi kppkpi "qp"r ci g"359"qh"vj ku'F tchv'Rtqur gewwu" yi gtg"j cu'dggp"pq"co qwpv'qt"dgpghkv'r ckf "qt"i kxgp"f wtkpi "yi g"r tgegf kpi "4"*yy q+"{ gctu'qh'hkrkpi "qh'vj ku'F tchv'Rtqur gewwu'qt" kpvgpf gf "vq"dg"r ckf "qt"i kxgp"vq"cp{"Rtqo qvgtu"qt"o go dgt "qh'qwt"Rtqo qvgt"I tqwr "cpf "pq"eqpukf gtcvkqp"hqt"r c{o gpv'qh" i kxlpi "qh'vj g"dgpghkv0'

EQO O QP'RWTUWWUQH'QWT'RTQO QVGT"

Cu'qp"yj g'f cvg"qh'yj ku'F tchv'Rtqur gewu. "pqpg"qh'qwt "Rtqo qvgtu"j cxg"cp{ "eqo o qp"r wtuwku0"

O CVGTICN'I WCTCP VGGUI IXGP 'VQ'VJ KTF 'RCTVKGU'

Gzegr v'cu'uvcygf 'lp''y g'ö*HlpcpekcnUvcygo gpwi'cu'Tgwcygf* ö'dgi lpplpi 'lqp'r ci g'359'qh''y ku'F tchv'Rtqur gewu. 'lqwt 'Rtqo qygtu'' j cxg''pqv'i kxgp''o cygtkcnii wctcpyggu''q''y g''y ktf 'r ctv(*lgu+'y ky 'l tgur gev'\q''y g''y g''ur gekhlgf 'lugewtkkgu''qh''qwt ''Eqo r cp{0'

GZRGTKGPEG'QH'RTQO QVGTU'R' 'VJ G'NKGP 'QH'DWUR' GUU''

 $Qwt'Rtqo\ qvgtu.''ctg'O\ t0Lci\ lkv'Ukpi\ j\ 'F\ j\ kmp''cpf\ 'O\ tu0P\ cxpggv'Mcwt''j\ cxg''c''xcuv''gzr\ gtlgpeg''kp''yj\ g''kpf\ wnt\{0Vj\ g'Eqo\ r\ cp\{''\ uj\ cm''cnq''gpf\ gcxqwt''q''gpuwtg''yj\ cv'tgngxcpv'r\ tqhguukqpcn''j\ gr''ku''uqwi\ j\ v'cu''cpf\ 'y\ j\ gp''tgs\ wktgf\ 'kp''yj\ g''hwwtg0'$

UJ CTGJ QNF IPI 'QH'VJ G'RTQO QVGT'I TQWR'IP'QWT'I TQWR''

Hqt'f gvcknu'qh'tij ctgj qrf kpi 'qh'o go dgtu'qh'qwt'Rtqo qvgt'I tqwr 'cu'qp''yj g'f cvg'qh''yj ku'F tchv'Rtqur gewwu.'r rgcug''ugg''yj g'ej cr vgt'' vkurgf ''ō*Ecr kvc n'Uxt wewwt g'o''* 'P qvgu''nq 'Ecr kvc n'Uxt wewwt g'' '' qp''r ci g''78 'qh''yj ku'F tchv'Rtqur gewwu''

Nkski cvkqp'Kpxqrxkpi 'Qwt'Rt qo qvgt''

Hqt"f gvcku"tgrcvkpi "vq"rgi cri'r tqeggf kpi u"kpxqrxkpi "vj g"Rtqo qvgtu."r rgcug"tghgt"õ**Qwuucpf kpi 'Nkki cvkqp'cpf'O cvgt kcn' Fgxgrqr o gpw**ö"dgi kppkpi "qp"r ci g"376"qh"vj ku"F tchv"Rtqur geww.0'

Tgrcvgf 'Rctv{ 'Vtcpucevkqpu''

Gzegr v'cu'lwcvgf "kp"ö*Tgw vgf 'Rctv('Vtcpucevkqpu*ö'dgi kppkpi 'qp'r ci g'357'qh'vj ku'F tchv'Rtqur gewu. "cpf "cu'lwcvgf "vj gtgkp. "qwt" Rtqo qvgtu"qt"cp{ "qh'vj g"Rtqo qvgt"I tqwr "Gpvkkgu"f q"pqv'j cxg"cp{ "qvj gt"kpvgtguv'kp"qwt"dwukpguu0'

Eqo replgu'Y kj 'Y j lej 'Qwt 'Rt qo qwgtu'J exg'Flucunqelevgf 'Kp'Vj g'Rt gegf lpi 'Vj tgg'[getu''

Qwt'Rtqo qvgtu'j cxg'þqvf kucuuqekcvgf 'vj go ugnxgu'htqo 'cp{ 'eqo r cpkgu. 'hkto u'qt 'gpvkxkgu'f wtkpi 'vj g'hcuv'yj tgg''{ gctu'r tgegf kpi " y g'f cvg'qh'vj ku'F tchv'Rtqur gewu0'

...



QWI'RTQO QVGT'I TQWR''

Qwt'Rt'qo'qvgt'I't'qwr'kp't'gto'u'qh'Tgi'wuc'kqp'4*3+*rr'+'qh't'jg'UGDK*NEFT+'Tgi'wuc'kqpu'423:'ku'c'u'wpf'gt<''

C0 PewsterlRgtuppu'y j q'hqto 'retv'qh'qwt'Rtqo qvgt'I tqwr<'

Rt qo qvgt ''	Ot0Lcilk/Upij'Fjkmp''	OtuOPcxpggv'Mcwt''
Tgncvkqp'y kvj 'Rt qo qvgt''	•	
Hcvj gt''	Nevg'I wto gn'Ukpi j 'F j kmp''	Ncvg"Uwnj f gx"Ukpi j "
O qvj gt''	Nevg'I wtej ctcp'Mcwt"	O tu0Ej ctcplk/Mcwt"
Ur qwug''	O tu0P expggv'Mewt"	Ot0Ici lk/Upi j 'Fj kmp''
Ukwgt *t+''	c0'O tu0'Reny kpf gt"Mewt" d0'O tu0'J ety kpf gt"Mwo et" e0'O tu0'Uetedlkv'Mewt" f 0'O tu0'J etr tggy'Mewt"	//"
Uqp*u+''	Ot0'Wrmktcv'Ukpij'Fjkmqp"	Ot0Wrmktcv'Ukpij'Fjkmpp"
Fcwij vgt *t+''	Ou0Vcpxggp'Mcwt"	Ou0'Vcpxggp''Mcwt''
Ur qwugøu'He vj gt ''	Nevg''Uwnj f gx''Ukpi j ''	Ncvg'I wto grl'Ukpi j 'F j kmpp''
Ur qwugøu'O qvj gt ''	O tu0Ej ctcplk/'Mcwt''	Ncyg'I wtej ctcp'Mcwt"
Ur qwugou!Ukwgt *i+!'	/"	c0'O tu0Rcny kpf gt"Mcwt" d0'O tu0'J cty kpf gt"Mwo ct" e0'O tu0'Uctcdlky'Mcwt" f0'O tu0'J ctrtggy'Mcwt"

D0 Kp'ecug'rt qo qvgt 'ku'c'Dqf { 'Eqtrqtcvg''

Ut OP qO'	P c wt g'qh'T grevkqpuj kr''	Pco g'qh'tj g'Rt qo qvgt '' Gpvlslgul'Eqo rcp{ ''
30'	Uwdukf kct { "qt" j qrf kpi "eqo r cp { "qh"Rtqo qygt"Eqo r cp { "	P 0C 0'
40'	Cp{"Dqf {"eqtrqtcvg",p"yjkej"rtqoqvgt"*Dqf {"Eqtrqtcvg+"jqrfu"42' "qt" oqtg"qh"yjg"gswkx{"ujctg"ecrkxcn'qt"yjkej"jqrfu"42' "qt"oqtg"qh"yjg" gswkx{"ujctg"ecrkxcn'qh"yjg"rtqoqvgt"*Dqf {"Eqtrqtcvg+0"	P 0C 0'

E0 'Kp'ecug't tqo qvgt 'ku'cp'Kpf kxkf wen'

Ut 0Pq0	Pewtg'qh'Tgrcvkqpuj kr''	Gpvls{''
30'	Cp{"Dqf{"Eqtrqtcvg"kp"yjkej"42' "qt"oqtg"qh"vjg"gswkv{"	Okpfjkijyc{"Vgejpqmikgu"Rtkxcvg"Nkokvgf"
	uj ctg'ecr kxcn'ku'j gnf 'd{ 'r tqo qvgtu'qt'cp'ko o gf kcvg'tgncvkxg'qh'	"
	vjg"rtqoqvgtu"qt"c"hkto"qt"JWH"kp"yjkej"rtqoqvgtu"qt"cp{"qpg"	
	qt"o qtg"qh"j ku"ko o gf kcvg"tgrcvkx.gu"ku"c"o go dgt0'	
40'	Cp{ 'Dqf { "eqtr qtcvg"kp"y j kej "Dqf { "Eqtr qtcvg"cu"r tqxkf gf "	P krl'
	cdqxg"j qrf u"42' "qt"o qtg"qh"vj g"gs wkw{ "uj ctg"ecr kxcrf0"	"
50'	Cp{"Jkpfw"Wpfkxkfgf"Hcokn{"qt"hkto"kp"yjkej"vjg"ciitgicvg"	Cuuqekcygf "Hodtkecyqtu"
	uj ctgj qrf kpi "qh'yj g'r tqo qvgtu'cpf "j ku'ko o gf kcvg"tgrcvkxgu'ku"	
	gs wcri'vq''qt''o qtg''y cp''42' 0'	



TGNCVGF'RCTV['VTCPUCEVKQPU''

Hqt'f gwkul'qp'Tgwyf 'Rctv{ "Vtcpucevkqpu'qh'qwt'Eqo r cp{."r rgcug'tghgt"vq'Cppgzwtg"/ 'ZZXKqh'ugevkqp"vkwgf " \tilde{o} Hlpcpekcn' Ucvgo gpw'cu'Tgwcvgf \tilde{o} "dgi kppkpi "qp'r ci g'359"qh'vj ku'F tchv'Rtqur geww0" "



FKXFFGPF'RQNEE["

 $\label{thm:continuous} Wpf gt''y g'Eqo r cpkgu'Cev.''4235."cp''Kpf kcp'Eqo r cp{'rc{u'f kxkf gpf u'wr qp'c'tgeqo o gpf cxkqp''d{'kxu'Dqctf''qh'F ktgevqtu''cpf'' crrtqxcn''d{''o clqtkx{''qh''y g''U ctgj qnf gtu''cv''y g''i gpgtcn'o ggxkpi 0'Wpf gt''y g''Eqo r cpkgu''Cev.''4235."f kxkf gpf u''o c{''dg''r ckf'' qw''qh''t tqhkxu''qh''c''eqo r cp{'kp''y g''{gct''kp''y j kej ''y g''f kxkf gpf 'ku'f genctgf ''qt''qw''qh''y g''wpf kxxtkdwgf ''r tqhkxu''qt'tgugtxgu''qh''y g'' r tgxkqwu''{gctu''qt''qw''qh''dq'y 0''} r tgxkqwu''{gctu''qt''qw''qh''dq'y 0''}$

 $\label{thm:control_vision} Vj g''Ctvlergu''qh''Cuuqekcvlqp''qh'''Eqorcp{''cnuq''i kxgu''y g''f kuetgvlqp''vq''qwt''Dqctf''qh''F ktgevqtu''vq''f gentg''cpf''r c{''lpvgtko'' f kxkf gpf uOP q''f kxkf gpf ''uj cm'idg''r c{cdrg''hqt''cp{''hlpcpekcn''{gct''gzegr v'qww'qh''r tqhkuu''qh''qwt''Eqorcp{''hqt''y cv''{gct''qt''yj cv'qh'' cp{''r tgxkqwu''hlpcpekcn''{gct''qt'''{gctu''yj cv''qh'' cr''chygt''r tqxkf kpi ''hqt''f gr tgekcvlqp''kp''ceeqtf cpeg''y kxj ''yj g'' r tqxkulqpu''qh''Eqorcplgu''Cev''42350''}$

 $Qw''Eqo\ r\ cp\{'f\ qgu''pq''j\ cxg''c'hqto\ cn'f\ kkf\ gpf\ ''r\ qnke\{'hqt''f\ gentcvkqp''qh''f\ kkf\ gpf\ ''kp''tgur'gev'qh''Gs\ wkk\{''uj\ ctgu0Cp\{'f\ kkf\ gpf\ u''\ q''dg''f\ gentgf\ ''uj\ cm'dg't\ geno\ o\ gpf\ gf\ ''d\{''yj\ g''Dqctf\ ''qh'F\ ktgevqtu''f\ gr\ gpf\ kpi\ ''wr\ qp''yj\ g''hpcpekcn'eqpf\ kkqp.''tguwwu'qh'qr\ gtcvkqpu.''ger'kcentgpf\ kwqp''yg''hpcpekcn'eqpf\ kwqp''yg''hpcpekcn'eqpf\ kwqp''yg''hpcpekcn'eqpf\ kwqp''yg''hpcpekcn'eqpf\ kwqp''yg''hpcpekcn'eqpf\ ''yg''hpcpekcn'eqpf\ ''yg''hpcpekcn'eqpf\ kwqp''yg''hpcpekcn'eqpf\ ''yg''hpcpekcn'eqpf\ ''yg''yg''hpcpekcn'eqpf\ ''yg''hpcpekcn'eqpf''hpcpekcn'eqpf''hpcpekcn'eqpf$



UGE VIQP 'KZ<HIP CP E ICN'IP HQTO CVIQP "

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$\textbf{HRP} \ CPE \ \textbf{ICN'} UVCVGO \ GP \ VU'CU'T \ GUVCVGF''$

Ut 0P q0'	Rct vlewrct u''	Rci g'P q0''	
3"	Tguvcvgf "Hkpcpekcn" Uvcvgo gpvu"	H'6'3''vq'H'6''52''	

FINANCIAL STATEMENTS AS RESTATED Independent Auditor's Report on The Restated Financial Statements of ASSOCIATED COATERS LIMITED

Auditor's Report on the Restated Statement of Assets and Liabilities as on September 30, 2023, March 31, 2023, March 31, 2022 and March 31, 2021, Statement of Profit & Loss and Cash Flow for the period ended September 30, 2023 and financial years ending on March 31, 2023, 2022 and 2021 of ASSOCIATED COATERS LIMITED.

To,
The Board of Directors,
ASSOCIATED COATERS LIMITED
(Formerly ASSOCIATED COATERS PRIVATE LIMITED)
Ashuti Khanberia Maheshtala LP 20/83/46,
Kolkata, Vivekanandapur, Thakurpukur Mahestola,
South 24 Parganas, WB- 700141

Dear Sirs,

- 1) We have examined the attached Restated Summary Statements and Other Financial Information of ASSOCIATED COATERS LIMITED (Formerly known as 'ASSOCIATED COATERS PRIVATE LIMITED'), for the period ended September30, 2023 and financial year ended on March 31, 2023, 2022 and 2021 (collectively referred to as the "Restated Summary Statements" or "Restated Financial Statements") as duly approved by the Board of Directors of the Company.
- 2) The said Restated Financial Statements and other Financial Information have been examined and prepared for the purpose of inclusion in the Draft Prospectus/Prospectus (collectively hereinafter referred to as "Offer Document") in connection with the proposed Initial Public Offering (IPO) on SME Platform of BSE Limited ("BSE SME") of the company taking into consideration the followings and in accordance with the following requirements of:
 - Section 26 and 32 of Part I of Chapter III to the Companies Act, 2013 ("the Act") read with Companies (Prospectus and Allotment of Securities) Rules 2014, as amended from time to time;
 - The Securities and Exchange Board of India (Issue of Capital and Disclosure Requirements Regulations), 2018 (the 'SEBI ICDR Regulations') as amended from time to time in pursuance of Section 11 of the Securities and Exchange Board of India Act,1992;
 - The Guidance Note on Reports in Company Draft Prospectus / Prospectus (Revised) issued by the Institute of Chartered Accountants of India ("ICAI") ("Guidance Note");
 - The applicable regulation of SEBI (ICDR) Regulations, 2018, as amended, and as per Schedule VI (Part A) (11) (II) of the said Regulations; and
 - The terms of reference to our engagement letter with the company dated January 09, 2023 requesting us to carry out the assignment, in connection with the proposed Initial Public Offering of equity shares on SME Platform of BSE Limited ("BSE SME") ("IPO" or "SME IPO").
 - 3) These Restated Financial Information (included in Annexure I to XXXII) have been extracted by the Management of the Company from:

The Company's Financial Statements for the period ended September 30, 2023 and financial year ended March 31, 2023, 2022 and 2021 which have been approved by the Board of Directors at their meeting respectively and books of accounts underlying those financial statements and other records of the Company, to the extent considered necessary for the preparation of the Restated Financial Statements, are the

responsibility of the Company's Management. The Financial Statement of the Company for the period ended on September 30, 2023 and financial year ended March 31, 2023 has been audited by us being the Statutory Auditors of the Company and for the financial year ended March 31, 2022 and 2021 has been audited by M/s. Suvankar Haldar & Associates, Chartered Accountants and had issued unqualified reports for these years.

- 4) In accordance with the requirement of Section 26 and 32 of the Companies Act, 2013 read with Companies (Prospectus and Allotment of Securities) Rules 2014, the SEBI Regulations, the Guidance Note, as amended from time to time and in terms of our engagement agreed with you, we further report that:
 - (a) The Restated Statement of Assets and Liabilities for the period ended September 30, 2023 and financial year ended on March 31, 2023, 2022 and 2021 examined by us, as set out in Annexure I to this report, is prepared by the Company and approved by the Board of Directors. These Restated Summary Statement of Assets and Liabilities, have been arrived at after making such adjustments and regroupings of the financial statements, as in our opinion were appropriate and more fully described in Significant Accounting Policies and Notes to Accounts as set out in Annexure IV to XXXII to this Report.
 - (b) The Restated Statement of Profit and Loss of the Company for the period ended September 30, 2023 and financial year ended on March 31, 2023, 2022 and 2021 examined by us, as set out in Annexure II to this report, is prepared by the Company and approved by the Board of Directors. These Restated Summary Statement of Profit and Loss, have been arrived at after making such adjustments and regroupings of the financial statements, as in our opinion were appropriate and more fully described in Significant Accounting Policies and Notes to Accounts as set out in Annexure IV to XXXII to this Report.
 - (c) The **Restated Statement of Cash Flows** of the Company for the period ended September 30, 2023 and financial year ended on March 31, 2023, 2022 and 2021, examined by us, as set out in **Annexure III** to this report, is prepared by the Company and approved by the Board of Directors. These Restated Summary Statement of Cash Flows, have been arrived at after making such adjustments and regroupings of the financial statements, as in our opinion were appropriate and more fully described in Significant Accounting Policies and Notes to Accounts as set out in Annexure IV to XXXII to this Report.

As a result of these adjustments, the amounts reporting in the above-mentioned statements are not necessarily the same as those appearing in the audited financial statements of the Company for the relevant financial years.

- 5) Based on the above, as per the reliance placed by us on the audited financial statements of the Company and report thereon given by the Statutory Auditor of the Company for the period ended September 30, 2023 and financial year ended on March 31, 2023, 2022 and 2021, and to the best of our information and according to the explanation given to us, we are of the opinion that Restated Financial Statement:
 - (a) have been made after incorporating adjustments for the changes in accounting policies retrospectively in respective financial years to reflect the same accounting treatment as per the changed accounting policies for all the reporting periods based on the significant accounting policies adopted by the Company as at September 30, 2023.

- (b) have been made after incorporating adjustments for prior period and other material amounts, if any, in the respective financial years to which they relate to;
- (c) do not contain any extra ordinary items that need to be disclosed separately other than those presented in the Restated Financial Statement and do not contain any qualification requiring adjustments;
- (d) There were no qualifications in the Audit Reports issued by the Statutory Auditors for the financial year ended March 31, 2023, 2022 and 2021 which would require adjustments in this Restated Financial Statements of the Company;
- (e) Restated Summary Statement of Profits and losses have been arrived at after charging all expenses including depreciation and after making such adjustments/restatements and regroupings as in our opinion are appropriate and are to be read in accordance with the Significant Accounting Polices and Notes to Accounts as set out in Annexure IV to XXXII to this report;
- (f) Adjustments in Restated Summary Statements have been made in accordance with the correct accounting policies,
- (g) There was no change in accounting policies, which needs to be adjusted in the Restated Summary Statements;
- (h) There are no revaluation reserves, which need to be disclosed separately in the Restated Financial Statements;
- (i) The Company has not paid dividend during the financial years under review.
- 6) We have also examined the following other Restated Financial Information as set out in the respective Annexure's to this report and forming part of the Restated Financial Statement, prepared by the management of the Company and approved by the Board of Directors of the company for the period ended September 30, 2023 and financial year ended on March 31, 2023, 2022 and 2021 proposed to be included in the Draft Red Hearing/Red Hearing/Prospectus ("Offer Document") for the proposed IPO:
 - 1. Statement of Share Capital, as restated in **Annexure V** to this report.
 - 2. Statement of Reserves & Surplus, as restated in Annexure VI to this report
 - 3. Statement of Long-Term Borrowings, as restated in **Annexure VII** to this report.
 - 4. Statement of Long-Term Provisions, as restated in Annexure VIII to this report
 - 5. Statement of Trade Payables as restated in **Annexure IX** to this report.
 - 6. Statement of Other Current Liabilities as restated in **Annexure X** to this report.
 - 7. Statement of Short-Term Provisions as restated in **Annexure XI** to this report.
 - 8. Statement of Plant, Property & Equipment and Intangible Assets, as restated in **Annexure XII** to this report.

- 9. Statement of Deferred Tax Assets, as restated in **Annexure XIII** to this report.
- 10. Statement of Other Non-Current Assets as restated in **Annexure XIV** to this report.
- 11. Statement of Inventory as restated in **Annexure XV** to this report.
- 12. Statement of Trade Receivables as restated in Annexure XVI to this report.
- 13. Statement of Cash and Cash Equivalents as restated in **Annexure XVII** to this report.
- 14. Statement of Short-Term Loans and Advances as restated in **Annexure XVIII** to this report.
- 15. Statement of Other Current Assets as restated in Annexure XIX to this report.
- 16. Statement of Revenue from Operations as restated in **Annexure XX** to this report.
- 17. Statement of Cost of Material Consumed as restated in Annexure XXI to this report.
- 18. Statement of Employee Benefit Expenses as restated in Annexure XXII to this report.
- 19. Statement of Finance Cost as restated in **Annexure XXIII** to this report.
- 20. Statement of Depreciation & Amortization as restated in Annexure XXIV to this report.
- 21. Statement of Other Expenses as restated in **Annexure XXV** to this report.
- 22. Statement of Related Party Transactions as restated in Annexure XXVI to this report.
- 23. Statement of Reconciliation of Restated Profit after Tax, Restated Equity/Net worth, as restated in **Annexure XXVII** to this report.
- 24. Statement of Capitalization as restated in **Annexure XXVIII** to this report
- 25. Statement of Other Financial Information as restated in **Annexure XXIX** to this report.
- 26. Statement of Tax Shelters as restated in **Annexure XXX** to this report.
- 27. Statement of Contingent Liabilities as restated in **Annexure XXXI** to this report.
- 28. Statement of Accounting Ratios as restated in **Annexure XXXII** to this report.
- 7) We, JMP & Associates, Chartered Accountants hold a valid peer review certificate issued by the "Peer Review Board" of the Institute of Chartered Accountants of India ("ICAI").
- 8) The preparation and presentation of the Financial Statements referred to above are based on the Audited financial statements of the Company and are in accordance with the provisions of the Act and ICDR Regulations. The Financial Statements and information referred to above is the responsibility of the management of the Company.

- 9) This report should not in any way be construed as a re-issuance or re-dating of any of the previous audit reports issued by us, nor should this report be construed as an opinion on any of the Consolidated Financial Information referred to herein.
- 10) We have no responsibility to update our report for events and circumstances occurring after the date of the report.
- 11) In our opinion, the above Restated Financial Statements contained in **Annexure I to XXXII** to this report read along with the 'Significant Accounting Policies and Notes to the Financial Statements' appearing in **Annexure IV to XXXII** after making adjustments and regrouping/reclassification as considered appropriate and have been prepared in accordance with the provisions of Section 26 and 32 of the Companies Act, 2013 read with the Companies (Prospectus and Allotment of Securities) Rules 2014, to the extent applicable, the SEBI Regulations, the Guidance Note issued in this regard by the ICAI, as amended from time to time, and in terms of our engagement agreed with you.
- 12) Our report is intended solely for use of the Management and for inclusion in the offer documents in connection with the proposed SME IPO of equity shares of the Company and is not to be used, referred to or distributed for any other purpose except with our prior written consent.

For JMP ASSOCIATES Chartered Accountants Firm Registration No.: 324235E

Sd/-CA Manish Gadia Partner Membership No. 059677 UDIN: 23059677BGUIKI6543

Place: Kolkata

Date: December 26, 2023

ASSOCIATED COATERS LIMITED CIN: U28129WB2017PLC224001

RESTATED STATEMENT OF ASSETS & LIABILITIES

(Rs. in Lakhs)

I.		Note No.	As at 30.09.2023	As at 31.03.2023	As at 31.03.2022	As at 31.03.2021
	EQUITY AND LIABILITIES					
1	Shareholders' Funds					
	(a) Share Capital	2	3.00	3.00	3.00	3.00
	(b) Reserves and Surplus	3	100.57	67.34	13.05	(0.62)
2	Non-Current liabilities					
	(a) Long-term Borrowings	4	34.90	9.90	10.10	0.20
	(b) Deferred Tax Liabilities (Net)		-	-	-	
	(c) Long-term Provisions	5	1.60	1.00	0.36	
3	Current Liabilities					
	(a) Short-term Borrowings		-	-	-	-
	(b) Trade Payable	6				
	(I) Dues payable to MSME Creditors		16.38	7.03	9.68	-
	(II) Dues payable to other than MSME Creditors		97.17	94.60	87.93	-
	(c) Other Current Liabilities	7	92.91	93.98	72.84	0.14
	(d) Short-term Provisions	8	24.18	19.28	4.84	-
	TOTAL		370.71	296.12	201.81	2.72
II. 1	ASSETS Non-current Assets (a) Property, Plant & Equipment & Intangible Assets	9				
	(i) Property, Plant & Equipment		87.55	47.80	52.03	-
	(ii) Capital Work-in-progress		-	-	-	-
	(b) Deferred Tax Assets (Net)	10	0.27	0.07	0.04	-
	(c) Non- Current Investments		-	-	-	-
	(d) Long-term Loans and Advances		-	-	-	-
	(e) Other Non- Current Assets	11	-	-	-	0.07
2	Current Assets					
	(a) Inventories	12	29.15	3.93	2.85	-
	(b) Trade Receivables	13	149.24	150.91	135.87	-
	(c) Cash and Cash Equivalents	14	66.14	66.87	8.14	2.65
	(d) Short Term Loans & Advances	15	15.09	19.58	0.02	-
	(e) Other Current Assets	16	23.28	6.97	2.86	-
	TOTAL		370.71	296.12	201.81	2.72
	101112		2.00.1	-> 0.12	201,01	

The accompanying notes 1 - 28 are integral part of financial statements As per our report of even date

For JMP ASSOCIATES Chartered Accountants

FRN: 324235E

For & on behalf of the board of directors, ASSOCIATED COATERS LIMITED

Sd/-CA Manish Gadia *(Partner)*

Membership No. 059677

Place: KOLKATA Date: 26/12/2023

UDIN: 23059677BGUIKI6543

Sd/-Jagjit Singh Dhillon Managing Director & CFO DIN: 07980441 Sd/Navneet Kaur
Director
DIN: 07980468

Sd/-Heenal Hitesh Rathod Company Secretary EVRPR0491A

ASSOCIATED COATERS LIMITED CIN: U28129WB2017PLC224001 RESTATED STATEMENT OF PROFIT & LOSS

(Rs. in Lakhs)

Particulars	Note No.	For the Half year ended 30.09.2023	For the year ended 31.03.2023	For the year ended 31.03.2022	For the year ended 31.03.2021
Revenue from operations	17	232.96	358.94	139.41	_
Other income	17	-	-	-	-
Total Income		232.96	358.94	139.41	-
Expenses:					
Cost of Materials Consumed	18	161.91	236.57	103.57	_
Employee Benefit Expenses	19	5.53	22.17	10.36	-
Finance Cost	20	0.03	0.54	0.01	-
Depreciation and Amortization Expenses	21	6.69	7.56	3.94	-
Other Expenses	22	13.89	18.73	3.07	0.14
Total Expenses		188.06	285.57	120.94	0.14
Profit before Exceptional Items		44.90	73.37	18.47	(0.14)
Exceptional Items					
'-Loss on Sale of Investment		-	-	-	-
Profit/(Loss) before Tax		44.90	73.37	18.47	(0.14)
Tax Expenses:					
Current Tax		11.87	19.11	4.84	_
Mat Credit Entitlement		-	_	-	-
Deferred Tax		(0.20)	(0.03)	(0.04)	-
Profit/(Loss) for the year		33.22	54.30	13.67	(0.14)
Earnings per equity share:					
Basic (in Rs.)		3.57	5.84	1.47	- 0.01
Diluted (in Rs.)		3.57	5.84	1.47	(0.01)

The accompanying notes 1 - 28 are integral part of financial statements

As per our report of even date

For JMP ASSOCIATES

Chartered Accountants

FRN: 324235E

For & on behalf of the board of directors, ASSOCIATED COATERS LIMITED

Sd/-

Jagjit Singh Dhillon
Sd/CA Manish Gadia

Jagjit Singh Dhillon
Managing Director & CFO
DIN: 07980441

Sd/-Navneet Kaur Director DIN: 07980468

(Partner)

Membership No. 059677

Sd/Place: KOLKATA Heenal Hitesh Rathod
Date: 26/12/2023 Company Secretary
UDIN: 23059677BGUIKI6543 EVRPR0491A

ASSOCIATED COATERS LIMITED CIN: U28129WB2017PLC224001 RESTATED CASH FLOW STATEMENT

(Rs. in Lakhs)

	Particulars	For the Half Year ended 30th September, 2023	For the Year ended 31st March, 2023	For the Year ended 31st March, 2022	For the Year ended 31st March, 2021
A	CASH FLOW FROM OPERATING ACTIVITIES:				
	Net Profit before tax	44.90	73.37	18.47	(0.14)
	Depreciation & Amortisation	6.69	7.56	3.94	-
	Finance Cost	0.03	0.54	0.01	-
	Loss/(Profit) on Sale of Property, Plant & Equipments	-	-	-	-
	Provision for Gratuity	0.01	0.00	0.36	-
	Preliminary Expenses	-	-	0.07	0.07
	Interest Income	-	-	-	-
	Operating Profit before Working Capital Charges Adjusted for:	51.63	81.49	22.85	(0.06)
	Inventories	(25.22)	(1.08)	(2.85)	_
	Trade receivables	1.67	(15.04)	(135.87)	
	Short Term Loans & Advances	4.49	(19.55)	(0.02)	-
	Other Current Assets	(16.31)	(4.10)	(2.86)	-
	Trade Payable	11.93	4.01	97.62	-
	Other Current Liabilities	(1.06)	21.13	72.70	0.06
	Short-term Provisions	- 1	-	-	-
	Cash Generated From Operations	27.71	67.49	51.56	-
	Payment of Income Tax (Net of Refund)	(6.97)	(4.68)	-	-
	Net cash generated/ (used in) from operating activities	20.74	62.81	51.56	-
В	CASH FLOW FROM INVESTING ACTIVITIES:				
	Purchase of Property, Plant & Equipment	(46.45)	(3.33)	(55.97)	-
	Capital Work In Progress	-	-	-	-
	Sale of Property, Plant & Equipment	-	-	-	-
	Purchase/(Sale) of Investments	-	-	-	-
	Interest Income	-	-	-	-
	Net Cash used in Investing Activities (B)	(46.45)	(3.33)	(55.97)	-
C	CASH FLOW FROM FINANCING ACTIVITIES:				
	Finance Cost	(0.03)	(0.54)	(0.01)	-
	Movement of Long Term Borrowings	25.00	(0.20)	9.90	-
	Movement Short term borrowings	-	-	-	-
	Net Cash used in Financing Activities (C)	24.97	(0.74)	9.89	-
	Net Increase/(Decrease) in Cash and Cash Equivalents	(0.73)	58.73	5.48	-
	Cash and Cash Equivalents at the beginning of the year	66.87	8.14	2.65	2.65
	Cash and Cash Equivalents at the end of the year	66.14	66.87	8.14	2.65

Note :-

1. Components of Cash & Cash Equivalent

	Particulars	As at 30.09.2023	As at 31.03.2023	As at 31.03.2022	As at 31.03.2021
	a. Balances with banks				
	- Current Accounts	65.19	66.32	6.90	0.07
	b. Cash on hand (As certified by the management)	0.95	0.54	1.24	2.58
te:	Total	66.14	66.87	8.14	2.65

UDIN: 23059677BGUIKI6543

The above cash flow statement has been prepared under the indirect method set out in AS-3 issued by the Institute of Chartered Accountants of India.

3. Figures in Brackets represents outflow.

The accompanying notes 1 - 28 are integral part of financial statements As per our report of even date

As per our report of even date

For & on behalf of the board of directors, ASSOCIATED COATERS LIMITED

FRN: 324235E

For JMP ASSOCIATES

Sd/- Sd/- Sd/-

CA Manish Gadia Jagjit Singh Dhillon Heenal Hitesh Ratho
(Partner) Managing Director & CFO Director
Membership No. 059677 DIN: 07980441 -

Place: KOLKATA Sd/Date: 26/12/2023 Heenal Hitesh Rathod
UDIN: 23059677BGUIKI6543 Company Secretary

ASSOCIATED COATERS PRIVATE LIMITED

STATEMENT OF NOTES TO RESTATED FINANCIAL STATEMENTS NOTE 1

(A) Background of the Company

The company was originally formed & incorporated as a Private Limited Company at Kolkata, West Bengal under the Companies Act, 2013 under the name of "Associated Coaters Private Limited" vide certificate of incorporation dated December 22, 2017 bearing Corporate Identity Number U28129WB2017PTC224001 issued by the Registrar of Companies, Kolkata, West Bengal. Subsequently, our company was converted into Public Limited Company vide special resolution passed by our shareholders at the Extra Ordinary General Meeting held on October 25th, 2023 and the name of the company was changed to "Associated Coaters Limited" pursuant to issuance of Fresh Certificate of Incorporation datedDecember 19th, 2023 by Registrar of Companies, Kolkata, West Bengal. The Corporate Identification Number of our company U28129WB2017PLC224001.

The company is mainly engaged in the business specializing in the pre treatment, poweder coating, wood coating & PVDF coating on Metals, majorly being aluminium extrusions.

(B) Significant Accounting Policies

1.1 Basis of preparation of financial statements

The financial statements have been prepared in accordance with the applicable Accounting Standards notified under Section 133 of the Companies Act, 2013 read with Rule 7 of Companies (Accounts) Rules, 2014 under historical cost convention on accrual basis. All the assets and liabilities have been classified as current or non-current as per Company's normal operating cycle and other criteria set out in the Schedule III to the Companies Act, 2013. Based on the nature of activities, the Company has ascertained its operating cycle as 12 months for the purpose of current and non-current classification of assets and liabilities.

1.2 Use of Estimates

The preparation of the financial statements is in conformity with Indian GAAP (Generally Accepted Accounting Principles) which requires the management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosures of contingent liabilities as on the date of the financial statements. The estimates and assumptions made and applied in preparing the financial statements are based upon management's best knowledge of current events and actions as on the date of financial statements. However, due to uncertainties attached to the assumptions and estimates made actual results could differ from those estimates. Any revision to accounting estimates is recognized prospectively in current and future periods.

1.3 Revenue Recognition

- (a) Revenue is recognized to the extent that it is probable that the economic benefits will flow to the Company and the revenue can be reliably measured.
- (b) Sales are recognized on accrual basis, and only after transfer of goods or services to the customer.
- (c) Dividend on Investments are recognized on receipt basis.
- (d) Interest income is recognized on a time proportion basis taking into account the amount outstanding and the rate applicable.

1.4 Property, Plant & Equipment & Depreciation

Property, plant and equipment are stated at historical cost less accumulated depreciation, and accumulated impairment loss, if any. Historical cost comprises of the purchase price including duties and non-refundable taxes, borrowing cost if capitalization criteria are met, directly attributable expenses incurred to bring the asset to the location and condition necessary for it to be capable of being operated in the manner intended by management and initial estimate of decommissioning, restoring and similar liabilities. Subsequent costs related to an item of property, plant and equipment are recognized as a separate asset, as appropriate, only when it is probable that future economic benefits associated with the item will flow to the group and the cost of the item can be measured reliably. The carrying amount of any component accounted for as a separate asset is derecognized when replaced. All other repairs and maintenance are recognized in statement of profit and loss during the reporting period when they

1.5 Depreciation of Tangible Assets: -

Depreciation on tangible property, plant & equipment is charged on written down value of the asset as per the Companies Act, 2013. Depreciation on assets purchased/acquired during the year is charged from the date of purchase/acquisition of the asset or from the day the asset is ready for its intended use. Similarly, depreciation on assets sold/discarded during the year is charged up to the date when the asset is sold/discarded.

1.6 Investments

Non- Current/ Long-term Investments are stated at cost. Provision is made for diminution in the value of the investments, if, in the opinion of the management, the same is considered to be other than temporary in nature. On disposal of an investment, the difference between its carrying amount and net disposal proceeds is charged or credited to the Statement of Profit and Loss. Current investments are carried at lower of cost and fair value determined on an individual basis. On disposal of an investment, the difference between its carrying amount and net disposal proceeds is charged or credited to the Statement of Profit and Loss.

1.7 Impairment of Assets

Assessment is done at each Balance Sheet date as to whether there is any indication that a tangible asset might be impaired. For the purpose of assessing impairment, the smallest identifiable group of assets that generates cash inflows from continuing use that are largely independent of the cash flows from other assets or other group of assets, is considered as a cash generating unit. If any such indication exists, an estimate of the recoverable amount of asset/ cash generating unit is made. Assets whose carrying value exceeds their recoverable amount are written down to recoverable amount. Recoverable amount is higher of an asset's or cash generating unit's net selling price and its value in use. Value in use is the present value of estimated future cash flows expected to arise from the continuing use of an asset and from its disposal at the end of its useful life. Assessment is also done at each Balance Sheet date as to whether there is any indication that an impairment loss recognized for an asset in prior

1.8 Inventories

Inventories of traded goods are valued at lower of cost and net realizable value. Cost comprises of all costs of purchase and other costs incurred in bringing the inventories to their present location and condition. Cost formula used is FIFO.Net realizable value is the estimated selling price in the ordinary course of business, less estimated cost necessary to make the sale.

1.5 Investments

Investments classified as long-term investments are stated at cost. Provision is made to recognize any diminution other than temporary in the value of such investments. Current investments are carried at lower of cost and fair value.

1.6 Employee Benefits

(i) Short term employee benefits

Short term employee benefits are recognized as an expense at the undiscounted amount in the statement of Profit and loss for the year which includes benefits like salary, wages, bonus and are recognized as expenses in the period in which the employee renders the related service.

(ii) (a) Defined Contribution Plan:

The Company has Defined Contribution Plans for Post-employment benefits in the form of Provident Fund for all employees which are administered by Regional Provident Fund Commissioner. Provident Fund and Employee State Insurance are classified as defined contribution plans as the Company has no further obligation beyond making the contributions. The Company's contributions to Defined Contribution plans are charged to the Statement of Profit and Loss as and when incurred.

(b) <u>Defined Benefit Plan:</u>

Unfunded Plan the Company has a defined benefit plan for post-employment benefit in the form of Gratuity. Liability for the above defined benefit plan is provided on the basis of valuation, as at the Balance Sheet date, carried out by an independent actuary. The actuarial method used for measuring the liability is the Projected Unit Credit method

1.7 Borrowing Costs

Borrowing costs are interest, commitment charges and other costs incurred by an enterprise in connection with Short-Term/ Long-Term borrowing of funds. Borrowing cost directly attributable to acquisition or construction of qualifying assets are capitalized as a part of the cost of the assets, up to the date the asset is ready for its intended use. All other borrowing costs are recognized in the Statement of Profit and Loss in the year in which they are incurred.

1.8 Taxes on Income rax expense for the year comprising current tax & deferred tax are considered in determining the net profit for the year. Provision is made for current tax and based on tax liability computed in accordance with relevant tax laws applicable to the Company. Provision is made for deferred tax for all timing difference arising between taxable incomes & accounting income at currently enacted or substantively enacted tax rates, as the case may be. Deferred tax assets (other than in situation of unabsorbed depreciation and carry forward losses) are recognized only if there is reasonable certainty that they will be realized and are reviewed for the appropriateness of their respective carrying values at each Balance Sheet date. Deferred tax assets, in situation of unabsorbed depreciation and carry forward losses under tax laws are recognized only to the extent that where is virtual certainty supported by convincing evidence that sufficient future taxable income will be available



1.9 Earnings per Share (EPS)

The earnings in ascertaining the Company's EPS comprises the net profit after tax attributable to equity shareholders and includes the post-tax effect of any extraordinary items. The number of shares used in computing basic EPS is the weighted average number of shares outstanding during the year. Diluted earnings per share is computed by dividing the profit/(loss) after tax attributable to Equity Shareholders (including the post-tax effect of extra ordinary items, if any) as adjusted for dividend, interest and other charges to expense or income relating to the dilutive potential equity shares, by the weighted average number of equity shares which could have been issued on conversion of all dilutive potential equity shares. Potential equity shares are deemed to be dilutive only if their conversion to equity shares would decrease the net profit per share from continuing ordinary operations. Potential dilutive equity shares are deemed to be converted as at the beginning of the period, un

1.10 Prior Period Items

Prior Period and Extraordinary items and Changes in Accounting Policies having material impact on the financial affairs of the Company are disclosed in financial statements.

1.1 Provisions, Contingent Liabilities and Contingent Assets **Provisions:**

A provisions is recognized when the Company has a present obligation as a result of past event, if it is probable that an outflow of resources embodying economic benefits will be required to settle the obligation and a reliable estimate can be made of the amount of obligation.

Contingent Liability:

Contingent Liabilities are disclosed when there is a possible obligation arising from past events, the existence of which will be confirmed only on the occurrence or non-occurrence of one or more uncertain future events not wholly within the control of the Company or a present obligation that arises from past events where it is either not probable that an outflow of resources will be required to settle or a reliable estimate of the amount cannot be made.

Contingent Assets:

Contingent Assets are neither recognized nor disclosed in the financial statements.

1.1 Segment Reporting

The Company is operating in only one segment. Hence Segment reporting is not applicable.

1.13 Cash and Cash Equivalents

Cash & cash equivalents comprise cash and cash on deposit with banks and corporations. The company considers all highly liquid investments with a remaining maturity at the date of purchase of three months or less and that are readily convertible to known amount of cash to be cash equivalents.

1.14 Changes in Accounting Policies in the Period/Years Covered in The Restated Financial Statements

There is no change in significant accounting policies adopted by the Company.

1.15 Other Notes on Restated Financial statements

The financial statements including financial information have been prepared after making such regroupings and adjustments, considered appropriate to comply with the same. As result of these regroupings and adjustments, the amount reported in the financial statements/information may not necessarily be same as those appearing in the respective audited financial statements for the relevant years.

Contingent liabilities and commitments (to the extent not provided for) - A disclosure for a contingent liability is also made when there is a possible obligation that may, require an outflow of the Company's resources.

Figures have been rearranged and regrouped wherever practicable and considered necessary.

The management has confirmed that adequate provisions have been made for all the known and determined liabilities and the same is not in excess of the amounts reasonably required to be provided for.

The balances of trade payables, trade receivables, loans and advances are unsecured and considered as good are subject to confirmations of respective parties concerned.

Realizations: In the opinion of the Board and to the best of its knowledge and belief, the value on realization of current assets and loans and advances are approximately of the same value as stated.

Contractual liabilities: All other contractual liabilities connected with business operations of the Company have been appropriately provided for.

Amounts in the restated standalone financial statements: Amounts in the restated standalone financial statements are rounded off to nearest Lakhs. Figures in brackets indicate negative values

ASSOCIATED COATERS LIMITED NOTES TO RESTATED FINANCIAL INFORMATION

<u>NOTE 2</u> SHARE CAPITAL

Annexure-V

Rs. In lakhs

Particulars	As at 30.09.2023	As at 31.03.2023	As at 31.03.2022	As at 31.03.2021
a accurats	Rs. In Lakhs	Rs. In Lakhs	Rs. In Lakhs	Rs. In Lakhs
Authorised 5,00,000 (P. Y. 10,00,000) Equity Shares of Rs.10/- each	50.00	10.00	10.00	10.00
<u>Issued, Subscribed & Fully Paid-up</u> 30,000 (P. Y.30000) Equity Shares of Rs.10/- each fully paidup	3.00	3.00	3.00	3.00
Total	3.00	3.00	3.00	3.00

NOTE 2A: Reconciliation of the shares outstanding at the beginning and at the end of the reporting period

Particulars	As at 30.09.2023	As at 31.03.2023	As at 31.03.2022	As at 31.03.2021
Shares outstanding at the beginning of the year	30,000	30,000	30,000	30,000
Shares Issued during the year		-	-	-
Shares bought back during the year		-	-	-
Shares outstanding at the end of the year	30,000	30,000	30,000	30,000

a. The authorised capital of the company was increased from 5,00,000 equity shares of Rs. 10/- each amounting to Rs. 50.00 Lakhs to 20,00,000 equity shares of Rs. 10/- each amounting to Rs. 200.00 Lakhs vide resolution dated December 18, 2023 (i.e., after the period considered in this financial statements).

NOTE 2B: Term/rights attached to equity shares:

The Company has only one class of equity shares having a par value of Rs10 per share. Holder of each equity share is entitled to one vote. The Company declares and pays dividends in Indian Rupees. The dividend proposed by the board of directors is subject to the approval of shareholders at the ensuing Annual General Meeting.

In the event of liquidation of the Company, the holders of equity shares will be entitled to receive remaining assets of the Company, after distribution of all preferential amounts. The distribution to equity shareholders will be in proportion to the number of equity shares held by the shareholders.

NOTE 2C	NOTE 2C : Shares held by promoters at the end of the period									
Sl. No.	Promoter Name	As at 30.09.2023	% Change during the period	As at 31.03.2023	% Change during the period	As at 31.03.2022	% Change during the period	As at 31.03.2021	% Change during the period	
		No. of Shares		No. of Share	S	No. of Shares	3	No. of Shares		
1	Jagjit Singh Dhillon	20,000	0.00%	20,000	0.00%	20,000	100.00%	10,000	0.00%	
2	Navneet Kaur	10,000	0.00%	10,000	0.00%	10,000	0.00%	10,000	0.00%	
3	Gurmel Singh Dhillon	-		-		-	-100.00%	10,000	0.00%	
	Total		-	30,000	-	30,000	-	30,000	-	

NOTE 2D: The details of Shareholders holding more than 5% shares:

	Name of Shareholder	As at 30.09.2023		As at 31.03.2023		As at 31.03.2022		As at 31.03.2021	
Sl.No		% of Holding	No. of Shares held	% of Holding	No. of Shares held	% of Holding	No. of Shares held	% of Holding	No. of Shares held
1	Jagjit Singh Dhillon	66.67%	20,000	66.67%	20,000	66.67%	20,000	33.33%	10,000
2	Navneet Kaur	33.33%	10,000	33.33%	10,000	33.33%	10,000	33.33%	10,000
3	Gurmel Singh Dhillon		-		-		-	33.33%	10,000
	Total	100.00%	30,000	100.00%	30,000	100.00%	30,000	100.00%	30,000

NOTE 2E : Holding Company

Name of Company
No. of Shares held
of Holding:

NOTE 3 RESERVE & SURPLUS Annexure-VI (Rs. In Lakhs)

Particulars	As at 30.09.2023	As at 31.03.2023	As at 31.03.2022	As at 31.03.2021
a. Securities Premium Reserve				
Opening Balance		-	-	-
Add: Securities premium credited on Share issue		-	-	-
Closing Balance		-	-	-
b. Surplus/(Deficit) in Statement of Profit & Loss				
Opening balance	67.34	13.05	(0.62)	(0.48)
Add/(Less): Net Profit/(Net Loss) for the current year	33.22	54.30	13.67	(0.14)
Closing Balance	100.57	67.34	13.05	(0.62)
Total	100.57	67.34	13.05	(0.62)

b. The paid up share capital of the company was increased from 30,000 fully paid up equity shares of Rs. 10/- each amounting to Rs. 3.00 Lakhs to 9,30,000 equity shares of Rs. 10 each fully paid up amounting to Rs. 93.00 Lakhs by issuing bonus shares in the ration 30:1 (30 fully paid up equity shares for every one fully paid up equity share held) vide resolution dated December

NOTE 4				
LONG TERM BORROWINGS				Annexure-VII
				(Rs. In Lakhs)
Particulars	As at 30.09.2023	As at 31.03.2023	As at 31.03.2022	As at 31.03.2021
(i) SECURED LOANS	!			
	!	-	-	-
		-	-	-
(ii) UNSECURED LOANS				
Loan from Financial Institution	25.00	-	-	
Loan from Director (Refer Note 4.1)	9.90	9.90	10.10	0.20
	34.90	9.90	10.10	0.20
		-	-	
Total (i) + (ii) - (iii)	34.90	9.90	10.10	0.20

NOTE 5 LONG TERM PROVISIONS

Annexure-VIII (Rs. In Lakhs)

Particulars	As at 30.09.2023	As at 31.03.2023	As at 31.03.2022	As at 31.03.2021
Provision for Employee Benefit Expenses				
Provision for Gratuity (Refer Note - 28A)	1.60	1.00	0.36	
Total	1.60	1.00	0.36	-

NOTE 6

TRADE PAYABLES

Annexure-IX

(Rs. In Lakhs)

Particulars	As at 30.09.2023	As at 31.03.2023	As at 31.03.2022	As at 31.03.2021
Micro, Small and Medium Enterprise	16.38	7.03	9.68	-
From Others	97.17	94.60	87.93	-
Total	113.55	101.63	97.62	-

			Ageing Schedule of Trade payables						
	<u>PARTICULARS</u>		6 months- 1 year	1-2 years	2-3 yrs	More Than 3 yrs	Total		
As on 30.09.2023									
MSME			9.65	6.73			16.38		
Other than MSME			6.11	91.06			97.17		
As on 31.03.2023					-	-	-		
MSME			2.60	4.43			7.03		
Other than MSME			6.17	88.43			94.60		
As on 31.03.2022			-		-	-	-		
MSME			1.52	8.16			9.68		
Other than MSME			-	87.93			87.93		
As on 31.03.2021			-	-	-	-	-		
MSME									
Other than MSME									

Micro and Small & Medium Enterprises Note:

The Company is in the process of obtaining necessary confirmations from suppliers regarding their status under the Micro, Small and Medium Enterprises (MSME) Development Act, 2006 (the 'Act') and hence disclosures regarding the following up to the extent identified have been made:

- (i) Amount due and outstanding to MSME suppliers as at the end of the accounting year.
- (ii) Interest paid during the year to MSME.
- (iii) Interest payable at the end of the accounting year to MSME.
- (iv) Interest accrued and unpaid at the end of the accounting year to MSME.
- (v) Management believes that the figures for disclosures, if any, will not be significant.

Note: Trade Payables as on respective dates has been taken as certified by the management of the company

NOTE 7 OTHER CURRENT LIABILITIES

Annexure-X (Rs. In Lakhs)

Particulars	As at 30.09.2023	As at 31.03.2023	As at 31.03.2022	As at 31.03.2021
Statutory Dues	11.73	14.58	6.57	-
Other Advances				
From Related Parties	-	-	-	-
From Others	3.08	-	-	-
Advance from Customers	-	1.49	-	-
Payable for Machineries	55.97	55.97	55.97	
Expenses Payable	22.13	21.94	10.31	0.14
Total	92.91	93.98	72.84	0.14

Note: Advance received from the customers have been taken as certified by the management of the company and no security has been offered by the company against th

NOTE 8

SHORT TERM PROVISIONS

Annexure-XI (Rs. In Lakhs)

Particulars As at 30.09.2023 | As at 31.03.2023 As at 31.03.2022 As at 31.03.2021 Provision for Others 19.27 Provision for Income Tax 24.17 4.84 Provision for Employee Benefit Expenses 0.01 0.00 0.00 Provision for Gratuity (Refer Note - 28A) Total 24.18 19.28 4.84

NOTE 10 DEFFERED TAX ASSETS				Annexure-XIII
				(Rs. In Lakhs)
Particulars	As at 30.09.2023	As at 31.03.2023	As at 31.03.2022	As at 31.03.2021
Fixed assets: Impact of difference between tax depreciation and depreciation/ amortization charged for	0.27	0.07	0.04	-
Unabsorbed Depreciation carried forward.	-	-	-	-
Expenses allowable on payment basis against taxable income in future years	-	-	-	-
Total	0.27	0.07	0.04	-
Notes: In accordance with accounting standard 22, Accounting for taxes on income, issued by the ins	titute of Chartered A	Accountant of India,	the Deferred Tax Asse	ts (net of Assets) is

NOTE 11

OTHER NON-CURRENT ASSETS

Annexure-XIV

				(Rs. In Lakhs)
Particulars	As at 30.09.2023	As at 31.03.2023	As at 31.03.2022	As at 31.03.2021
Preliminary expenses written to the extent written off			0.07	0.14
Less:- Preliminary expenses written off	-	-	(0.07)	(0.07)
Total	-	-		0.07

NOTE 12 INVENTORIES

Annexure-XV

				(Ks. In Lakns)
Particulars	As at 30.09.2023	As at 31.03.2023	As at 31.03.2022	As at 31.03.2021
(As Valued & certified by the Management)				
Raw-materials	29.15	3.93	2.85	-
Total	29.15	3.93	2.85	1

NOTE 13 TRADE RECEIVABLES

Annexure-XVI (Rs. In Lakhs)

Particulars	As at 30.09.2023	As at 31.03.2023	As at 31.03.2022	As at 31.03.2021
Unsecured, considered good				
Trade Receivables	149.24	150.91	135.87	-
Total	149.24	150.91	135.87	-

		Ageing Schedule of Trade receivables				
PARTICULARS	Less than 6 months	6 months- 1 year	1-2 years	2-3 yrs	More Than 3 yrs	Total
As on 30.09.2023						
Undisputed Trade receivables- considered good						-
Undisputed Trade receivables- considered doubtful		39.75	109.48			149.24
Disputed Trade receivables- considered good						
Disputed Trade receivables- considered doubtful						
As on 31.03.2023		-	-	-	-	-
Undisputed Trade receivables- considered good		41.61	109.30			150.91
Undisputed Trade receivables- considered doubtful						
Disputed Trade receivables- considered good						
Disputed Trade receivables- considered doubtful						
As on 31.03.2022		-	-	-	-	-
Undisputed Trade receivables- considered good			135.87			135.87
Undisputed Trade receivables- considered doubtful			-			
Disputed Trade receivables- considered good						
Disputed Trade receivables- considered doubtful						
As on 31.03.2021		-	-	-	-	-

Notes: As per the view of the Management of the Company there is no doubtful debt and hence provisions for doubtful debts have not been made. Trade Receivables as on respective dates has been taken as certified by the Management of the company

NOTE 14 CASH AND CASH EQUIVALENTS

Annexure-XVII

				(Rs. In Lakhs)
Particulars	As at 30.09.2023	As at 31.03.2023	As at 31.03.2022	As at 31.03.2021
a. Balances with banks				
- Current Accounts	65.19	66.32	6.90	0.07
b. Cash on hand (As certified by the management)	0.95	0.54	1.24	2.58
Total	66.14	66.87	8.14	2.65

NOTE 15 SHORT TERM LOANS AND ADVANCES

Annexure-XVIII

				(Rs. In Lakhs)
Particulars	As at 30.09.2023	As at 31.03.2023	As at 31.03.2022	As at 31.03.2021
(Unsecured, considered good)				
a. Loans				
To Related Parties	-	-	-	-
	-	-	-	-
(Recoverable in Cash or in Kind or value to be received)				
b. Advances				
Advance to Suppliers	11.59	-	-	-
Advance to Others	-	16.08	0.02	-
Advance to Employees	3.50	3.50	-	-
Advance to Related Parties	-	-	-	-
	15.09	19.58	0.02	-
Total	15.09	19.58	0.02	-

Note: Advances given to suppliers have been taken as certified by the management of the company.

No Securities have been taken by the company against advances given to suppliers.

Advances given to employees & Advances to others are interest free

NOTE 16 OTHER CURRENT ASSETS

Annexure-XIX (Rs. In Lakhs)

Particulars	As at 30.09.2023	As at 31.03.2023	As at 31.03.2022	As at 31.03.2021
Prepaid Insurance	0.34	-	-	-
Recoverable from Govt Authorities				
Advance Income Tax and TDS	3.78	6.97	2.62	-
GST Input	13.19	-	-	-
Other Advances	5.98	-	0.25	-
Total	23.28	6.97	2.86	-

Note: Prepiad has been taken as certified by the management of the company

NOTE 17

REVENUE FROM OPERATIONS

Annexure-XX (Rs. In Lakhs)

Particulars	For the year ended 30.09.2023	For the year ended 31.03.2023	For the year ended 31.03.2022	For the year ended 31.03.2021
Sale of Products	232.96	358.94	139.41	-
Total	232.96	358.94	139.41	-

NOTE 18 COST OF MATERIALS CONSUMED

Annexure-XXI (Rs. In Lakhs)

Particulars	For the year ended 30.09.2023	For the year ended 31.03.2023	For the year ended 31.03.2022	For the year ended 31.03.2021
Opening Stock of Raw materials	3.93	2.85	-	-
Add: Purchases	146.99	179.61	56.96	-
Add: Consumables	13.70	-	11.30	-
Add: Other manufacturing expenses (Refer note 18.1)	26.45	58.04	38.15	
	191.06	240.50	106.41	-
Less: Closing Stock of Raw Materials	29.15	3.93	2.85	-
Total	161.91	236.57	103.57	-

<u>NOTE 19</u> EMPLOYEES BENEFITS EXPENSE Annexure-XXII (Rs. In Lakhs)

Particulars	For the year ended 30.09.2023	For the year ended 31.03.2023		For the year ended 31.03.2021
Salaries & Wages	0.94	5.23	-	-
Directors Remuneration	3.60	16.00	10.00	-
Contribution to ESI & PF	0.39	0.30	-	-
Gratuity Expenses (Refer Note 25A)	0.60	0.64	0.36	-
Total	5.53	22.17	10.36	-
	-			

NOTE 20				Annexure-XXIII
FINANCE COST				(Rs. In Lakhs)
Particulars	For the year ended 30.09.2023	For the year ended 31.03.2023	For the year ended 31.03.2022	For the year ended 31.03.2021
Other Finanace Charges	0.03	0.54	0.01	-
Total	0.03	0.54	0.01	-
NOTE 21 DEPRECIATION & AMORTIZATION EXPENSES				Annexure-XXIV (Rs. In Lakhs)
Particulars	For the year ended 30.09.2023	For the year ended 31.03.2023	For the year ended 31.03.2022	For the year ended 31.03.2021
Depreciation on Property, Plant & Equipment	6.69	7.56	3.94	-
Total	6.69	7.56	3.94	-
	•	•	•	
NOTE 22 OTHER EXPENSES				Annexure-XXV (Rs. In Lakhs)
Particulars	For the year ended 30.09.2023	For the year ended 31.03.2023	For the year ended 31.03.2022	For the year ended 31.03.2021
Advertisement	0.05	0.80	0.15	-
Auditors Remuneration * (Refer Note No.22.1)	0.25	0.40	0.40	0.06
Carriage outward	0.90	-	-	-
Preliminary expenses written off	-	-	0.07	0.07
Profession tax	0.03	0.03	0.05	-
Office & expenses	0.52	0.69	0.20	-
Round OFF	(0.00)	0.00	-	-
Transportation charges	-	2.30	-	-
Interest & Late fee	0.11	-	-	-
Insurance Expenses	0.02	-	0.11	-
Legal & Professional Fees	6.26	1.19	0.14	-
Printing & Stationery	0.15	0.16	0.09	-
Rates & Taxes		0.02	0.07	-
Repair & Maintenance	3.10	7.02	0.90	-
Accounting Charges	0.18	0.36	0.22	0.01
Telephone Expenses	-	0.12	0.10	-
Travelling & Conveyance Expenses	2.12	5.04	0.43	-
Other General Expenses	0.21 13.89	0.60 18.73	0.15 3.07	0.14
Total	13.89	18./3	3.07	0.14
Note- 22.1 Details of Payment to Auditors	T.	I	I	(Rs. In Lakhs)
Particulars	For the year ended 30.09.2023	For the year ended 31.03.2023	For the year ended 31.03.2022	For the year ended 31.03.2021
Payments to the auditor As auditors	0.25	0.40	0.40	0.06
For Statutory Audit	-	-	-	-
For GST Audit	-	-	-	-
Total	0.25	0.40	0.40	0.06
Note-18.1 Other manufacturing expenses			I	(Rs. In Lakhs)
Particulars	For the year ended 31.03.2023	For the year ended 31.03.2023	For the year ended 31.03.2022	For the year ended 31.03.2021
raruculars	ended 31.03.2023			
(i) Cairrage Inward	2.05	3.01	0.39	-
		3.01 43.60	0.39 32.14	
(i) Cairrage Inward (ii) Labour Charges (iii) Machine Hire Charges	2.05			
(i) Cairrage Inward (ii) Labour Charges	2.05 16.82	43.60	32.14	-
(i) Cairrage Inward (ii) Labour Charges (iii) Machine Hire Charges	2.05 16.82 2.40	43.60 3.60	32.14 1.50	-

ASSOCIATED COATERS LIMITED

NOTE 9 PROPERTY, PLANT & EQUIPMENTS

Annexure-XII (Rs. In Lakhs)

				As on 30.09.2023						
		GROSS B	LOCK			DEPREC	ATION		NET B	LOCK
Particulars	As at	Additions	Disposal	As at	As at	For the	Adjustment	As at	As at	As at
	01.04.2023			30.09.2023	01.04.2023	Year	Aujustinent	30.09.2023	30.09.2023	31.03.2023
Tangible Assets										
Computers	0.32	0.00		0.32	0.10	0.07		0.17	0.15	0.22
Security Camera	0.28	0.00		0.28	0.04	0.02		0.06	0.22	0.24
Tools & Implements	1.29	0.00		1.29	0.18	0.10		0.28	1.01	1.11
Furniture & Fittings	2.20	0.00		2.20	0.40	0.23		0.63	1.57	1.80
Electronic Equipments	2.20	1.88		4.08	0.14	0.28		0.42	3.66	2.06
Metallic Tank	6.65	0.24		6.88	0.84	0.29		1.13	5.75	5.81
Plant & Machineries	42.43	31.28		73.71	5.86	5.39		11.25	62.46	36.56
Factory Shed		13.05		13.05	0.00	0.32		0.32	12.73	0.00
Total	55.36	46.45	-	101.81	7.56	6.69	-	14.26	87.55	47.80
Previous Year	52.03	3.33	•	55.36	-	7.56	-	7.56	47.80	52.03
Capital Work-inProgress#										

				As on 31.03.2023						
		GROSS B	LOCK			DEPREC	IATION		NET BLOCK	
Particulars	As at	Additions	Disposal	As at	As at	For the	Adjustment	As at	As at	As at
	01.04.2022			31.03.2023	01.04.2022	Year		31.03.2023	31.03.2023	31.03.2022
Tangible Assets										
Computers	0.03	0.29	0.00	0.32	0.00	0.10	0.00	0.10	0.22	0.03
Security Camera	0.28	0.00	0.00	0.28	0.00	0.04	0.00	0.04	0.24	0.28
Tools & Implements	1.29	0.00	0.00	1.29	0.00	0.18	0.00	0.18	1.11	1.29
Furniture & Fittings	2.20	0.00	0.00	2.20	0.00	0.40	0.00	0.40	1.80	2.20
Electronic Equipments	0.37	1.83	0.00	2.20	0.00	0.14	0.00	0.14	2.06	0.37
Metallic Tank	5.82	0.82	0.00	6.65	0.00	0.84	0.00	0.84	5.81	5.82
Plant & Machineries	42.05	0.38	0.00	42.43	0.00	5.86	0.00	5.86	36.56	42.05
Total	52.03	3.33	-	55.36	-	7.56		7.56	47.80	52.03
Previous Year	-	55.97	-	55.97	-	3.94		3.94	52.03	-
Capital Work-inProgress#	-	-	-	-	-		-	-		-

				As on 31.03.2022						
		GROSS BI	LOCK		DEPRECIATION				NET BLOCK	
Particulars	As at	Additions	Disposal	As at	As at	For the year	Adjustment	As at	As at	As at
	01.04.2021			31.03.2022	01.04.2021			31.03.2022	31.03.2022	31.03.2021
Tangible Assets										
Computers	-	0.04	-	0.04	-	0.01	-	0.01	0.03	-
Security Camera	-	0.30	-	0.30	-	0.02		0.02	0.28	-
Tools & Implements	-	1.38	-	1.38	-	0.10	-	0.10	1.29	-
Furniture & Fittings	-	2.42	-	2.42	-	0.22	-	0.22	2.20	-
Electronic Equipments	-	0.40	-	0.40	-	0.03	-	0.03	0.37	-
Metallic Tank	-	6.26	-	6.26	-	0.43	-	0.43	5.82	-
Plant & Machineries	-	45.18	-	45.18	-	3.13	-	3.13	42.05	-
Total	-	55.97	-	55.97	-	3.94	-	3.94	52.03	-
Previous Year	-	-	-	-	-	-	•	-	-	-
Capital Work-inProgress#	-	-	-	-	-	-	-	-	-	-

	As on 31.03.2021									
	GROSS BLOCK			DEPRECIATION				NET BLOCK		
Particulars	As at	Additions	Disposal	As at	As at	For the year	Adjustment	As at	As at	As at
	01.04.2020			31.03.2021	01.04.2020			31.03.2021	31.03.2021	31.03.2020
Tangible Assets										
Computers	-	-	-	-	-	-	-	-	-	-
Security Camera	-	-	-	-	-	-	-	-	-	-
Tools & Implements	-	-	-	-	-	-	-	-	-	-
Furniture & Fittings	-	-	-	-	-	-	-	-	-	-
Electronic Equipments	-	-	-	-	-	-	-	-	-	-
Metallic Tank	-	-	-	-	-	-	-	-	-	-
Plant & Machineries	-	-	-	-	-	-	-	-	-	-
Total	-	-	-	-	-	-	-	-	-	-
Previous Year	-	-	-	-	-	-	-	-	-	-
Capital Work-inProgress#	-	-	-	-	-	-	-	-	-	-

#Capital WIP ageing schedule

CWIP	Less than 1 year 1-2 years 2-3 years		More than 3 years	Total					
Projects in Progress									
As at 30.09.2023									
As at 31.03.2023	-	-	-	-	-				
As at 31.03.2022	-	-	-	-	-				
As at 31.03.2021	-	-	-	-	-				

ASSOCIATED COATERS LIMITED STATEMENT OF PRINCIPAL TERMS OF LOANS AND ASSETS CHARGED AS SECURITY Annexure to Note no. 4.1										
Name of Lender/Fund	Nature of Facility	Date of Issue	Sanctioned Amount (In Lakhs Rs.)	Rate of Interest	Outstanding amount (In Lakhs Rs.) as on (as per Books)	Outstanding amount (In Lakhs Rs.) as on (as per Books)	Outstanding amount (In Lakhs Rs.) as on (as per Books)	Outstanding amount (In Lakhs Rs.) as on (as per Books)		
					30-09-2023	2023-03-31	2022-03-31	2021-03-31		
Unsecured Loans From Financial Institutions	lw 1: c sil	1		T			ı	I		
Inventure Finance Private Limite	Working Capital Loan	26-Sep-23	25.00	12% p.a.	25.00	-	-	-		
				-	25.00	0.00	0.00	0.00 0.00		
From Directors and Sharehold	<u>lers</u>					•				
Jagjit Singh Dhillon					9.90	9.90	10.10	0.20		
· · · · · · · · · · · · · · · · · · ·					9.90	9.90	10.10	0.20		
Total					34.90	9.90	10.10	0.20		

ADDITIONAL NOTES TO RESTATED FINANCIAL INFORMATION

Rs. In Lakhs

NOTE 28A- GRATUITY

The Company has a defined benefit gratuity plan. Every employee who has completed five years or more of services is entitled to gratuity on terms as per the provisions of the Payment of Gratuity Act,1972. The scheme is unfunded.

Payment of Gratuity Act,1972. The scheme is unfunded.				
	30-09-2023	31-03-2023	31-03-2022	31-03-2021
	(Rs.)	(Rs.)	(Rs.)	(Rs.)
i) Net employee expense/(benefit).	(===-)	(===)	()	(====)
Current service cost	0.34	0.50	0.36	-
Interest cost on benefit obligation	0.04	0.03	-	-
Past service cost	-	-	-	-
Net Actuarial (gain)/loss recognized in the year	0.23	0.12	-	-
Total employer expenses recognized in the Statement of Profit and Loss	0.60	0.64	0.36	-
ii) Benefit Asset/(Liability)				
Defined benefit obligation	1.61	1.00	0.36	_
Fair Value of plan assets	-	-	-	-
Benefit Asset/ (liability)	1.61	1.00	0.36	-
ii) Benefit Asset/(Liability)				
Current Liability	0.01	1.36	0.002	_
Non-Current Liability	1.60	-	0.36	_
Benefit Asset/ (liability)	1.61	1.36	0.36	-
				
iii) Movement in benefit liability				
Opening defined benefit obligation	1.00	0.36	-	-
Current service cost	0.34	0.50	0.36	-
Interest Cost	0.04	0.03	-	-
Plan Amendments Cost/(Credit) Benefits paid	-	-	-	-
Actuarial (gains)/losses on obligation	0.23	0.12	-	
Closing benefit obligation	1.61	1.00	0.36	
iv) The principal actuarial assumption are as follows				
Discount rate	7.34%	7.46%	7.24%	0.00%
Salary increase	8.00%	8.00%	8.00%	0.00%
Withdrawal rates	10.00% p.a at younger ages reducing to 2.00% p.a% at older ages	10.00% p.a at younger ages reducing to 2.00% p.a% at older ages	10.00% p.a at younger ages reducing to 2.00% p.a% at older ages	
Normal age of retirement	58 Years	58 Years	58 Years	
v) Amounts for the current year and previous period are as follows	31.03.23 (Rs.)	31.03.23 (Rs.)	31.03.22 (Rs.)	31.03.21 (Rs.)
Gratuity	1.71	1.00	0.26	
Defined Benefit Obligation Plan Assets	1.61	1.00	0.36	-
Surplus/(Deficit)	-	-	-	-
Experience adjustments on plan liabilities	Not Available*	Not Available*	Not Available*	Not Available*
NOTE 28B- DEFERRED TAX				
Particulars	01.04.2023 to 30.09.2023	2022-2023	2021-2022	2020-21
WDV of Depreciable Assets as per Companies Act, 2013	6.69	7.56	3.94	
WDV of Depreciable Assets as per Income Tax Act, 1961	6.55	8.08	4.14	-
Differential Net Timing Difference [A]	0.15	- 0.51	- 0.20	-
Unabsorbed Losses [B]	-	-	-	-
Provision for Gratuity [C]	0.60	0.64	0.36	-
Substantively Enacted Tax Rate [D]	0.26	0.26	0.26	-
Closing Net Deferred Tax Liability [(A+B+C) X D]	0.20	0.03	0.04	-
Opening Net Deferred Tax Liability Reversal of Deferrred Tax Liability	-	-	-	-
Deferred Taxes (Debited) / Credited to the Statement of Profit & Loss	-	-	-	-
Colored Taxes (Debuted) / Credited to the Statement of Front & Loss	0.20	0.02	0.04	
	0.20 0.27	0.03 0.03	0.04 0.04	-
			V.U4	-

NOTE 28C - BASIC AND DILUTED EARNINGS PER SHARE

Particulars		2023-2024 (Upto 30.09.23)	2022-2023	2021-2022	2020-2021
Profit after Tax	Rs. In Lakhs	33.22	54.30	13.67	(0.14)
Present Number of equity shares of Rs. 10/- each	Nos.	30,000	30,000	30,000	30,000
Weighted average number of Equity shares	Nos.	9,30,000	9,30,000	9,30,000	9,30,000
Basic earnings per share	Rupees	3.57	5.84	1.47	(0.01)
Diluted Earning per Share	Rupees	3.57	5.84	1.47	(0.01)

NOTE 28D - Earning and Expenditure in Foreign curreny

Earnings in Foreign Currency - Nil. (Previous year Nil)

Expenditure in Foreign Currency - Nil (Previous Yea- NIL)

NOTE 28E - Contingent Liabilities not provided for

(Rs. In Lakhs)

i) Outstanding Capital Commitment not acknowledged as debt is 'Rs..... Lakhs (Net of Advance) as on 31.09.2023.

<u>,-</u>				
Sl. No.	Particulars	Financial Year	Demand	Status
1	Sales Tax Demand		-	

NOTE 28F -

Medium Enterprises Development Act, 2006 and hence disclosures has been made only for the parties from whome the declaration has been received. In respect of other vendors from whom declaration has not been received disclosure has not been made for those which have not been received disclosure has not

NOTE 28G - Previous year's figure have been regrouped/rearranged whenever necessary to conform to the current year's presentation.

For JMP ASSOCIATES

Chartered Accountants

FRN: 324235E

For & on behalf of the board of directors, ASSOCIATED COATERS LIMITED

Sd/-

Sd/-

Sd/-CA Manish Gadia (Partner)

Date: 26/12/2023

Membership No. 059677

Jagjit Singh Dhillon Managing Director & CFO DIN: 07980441

Navneet Kaur Director DIN: 07980468

Sd/-**Heenal Hitesh Rathod Company Secretary** EVRPR0491A

Place: KOLKATA

STATEMENT OF RELATED PARTY TRANSACTIONS

Annexure XXVI

A. List of Related parties

S1. No. Relation Name

Key Mangerial Personnel

Jagjit Singh Dhillon

Navneet Kaur Director Director

Enterprises having Significant Influence Associated Fabricators

AS ON 30.09.2023									
A. Transactions with Related Parties during the year	Director	Relative of KMP	Holding	Enterprises having					
Nature of Transactions	Director	Relative of Rivii	Company	Significant Influence					
Remuneration Paid	3.60								
Loan Taken									
Loan Taken Refunded									
Loan Given									
Loan refund received									
Interest Received									
Rent Paid	2.40								
Maintenance Charges Paid	4.68								
Electricity Charges paid	-								
Purchase				53.69					

B. Outstanding Balances Nature of Transactions	Director	Relative of KMP	Holding Company	Enterprises having Significant Influence
Remuneration Payable	18.18			
Loan Taken	9.90			
Loan Given				
Rent Payable				-
Payable for Machineries	55.97			
Maintenance Charges Payable	-			
Electricity Charges Payable	-			

AS ON 3	1.03.2023			
A. Transactions with Related Parties during the year			Holding	Enterprises having
Nature of Transactions	Director	Relative of KMP	Company	Significant Influence
Remuneration Paid	16.00			
Loan Taken				
Loan Taken Refunded	0.10			
Loan Given				
Loan refund received				
Interest Received				
Rent Paid/ Machine Hire Charges				3.60
Labour Charges				11.49
Machine Hire Charges	-			
Purchase				83.22

B. Outstanding Balances Nature of Transactions	Director	Relative of KMP	Holding Company	Enterprises having Significant Influence
Remuneration Payable	20.97			
Loan Taken	9.90			
Loan Given				
Payable for Machineries	55.97			
Rent Payable				-
Maintenance Charges Payable	-			
Electricity Charges Payable	-			

AS ON 31.03.2022					
A. Transactions with Related Parties during the year	Director	Relative of KMP	Holding	Enterprises having	
Nature of Transactions	Director	Kelative of Kivii	Company	Significant Influence	
Remuneration Paid	0.39				
Loan Taken	9.90				
Loan Taken Refunded					
Loan Given					
Loan refund received					
Interest Received					
Rent Paid/ Machine Hire Charges	1.50				
Labour Charges	7.54				
Electricity Charges paid					
Purchase				29.49	
Purchase				29.49	

B. Outstanding Balances	D: /	n.i.i. 470.m	Holding	Enterprises having	
Nature of Transactions	Director Relative of K		Company	Significant Influence	
Remuneration Payable	9.62				
Loan Taken	10.10				
Loan Given					
Payable for Machineries	55.97				
Rent Payable					
Maintenance Charges Payable	-				
Electricity Charges Payable					
AS ON 3	1.03.2021				
A. Transactions with Related Parties during the year	Director	Relative of KMP	Holding	Enterprises having	
Nature of Transactions	2 Hector	110111111111111111111111111111111111111	Company	Significant Influence	
Remuneration Paid					
Loan Taken					
Loan Taken Refunded					
Loan Given					
Loan refund received					
Interest Received					
Rent Paid					
Maintenance Charges Paid					
Machine Hire Charges					
Purchase					
	-				
B. Outstanding Balances	Director	Relative of KMP	Holding	Enterprises having	
Nature of Transactions	Director	Relative of Rivir	Company	Significant Influence	
Remuneration Payable					
Loan Taken	0.20				
Loan Given					
Rent Payable					
Maintenance Charges Payable					
Electricity Charges Payable					

Annexure XXVII

Restated Statement of Adjustments to Audited Financial Statements

(i) Reconciliation of Restated Profit:

The reconciliation of Profit after tax as per audited financial statements and the Profit after tax as per Restated financial statements is presented below. This summarizes the results of restatements made in the audited accounts for the respective years/ period and its impact on the profit / loss of the company

Particulars	For the year ended 30th September'23	For the year ended 31st March'23	For the year ended 31st March'22	For the year ended 31st March'21
Profit after tax as per audited/ re-audited financial statements	33.22	54.68	14.15	(0.14)
(i) Adjustments on account of change in accounting policies:	-	-	-	-
(ii) Other material adjustments:	-	-	-	-
Employee benefit expenses - Gratuity	-	(0.64)	(0.36)	-
Depreciation and amortization expense	-	•	•	-
Finance cost	-	-	-	-
Income tax adjustments related to earlier years	-	0.16	(0.16)	-
Deferred tax adjustment	-	0.10	0.04	-
Preliminary Exps written off	-		-	-
(iii) Audit Qualifications:	-	-		-
Restated profit after tax	33.22	54.30	13.67	(0.14)
	33.22	54.30	13.67	- 0.14

(ii) Reconciliation of Restated Shareholders Funds:

(ii) Reconcination of Restated Shareholders I dids.				
The reconciliation of Shareholder's funds as per audited financial statements and Shareholder's funds as per Restated financial statements is presented below. This				
Particulars	As at 30th September'23	As at 31st March'23	As at 31st March'22	As at 31st March'21
Shareholder's funds as per Audited/Re-audited financial statements	103.57	71.21	16.53	2.38
(i) Adjustments on account of change in accounting policies:	=	-	-	-
(ii) Differences carrired over pertaining to changes in Profit/ Loss due to				
Restated Effect for the period covered in Restated Financial	1	(0.48)		-
(iii) Differences pertaining to changes in Profit/ Loss due to Restated Effect				
for the period covered in Restated Financial	1	(0.38)	(0.48)	
(iv) Other material adjustments #:	1		-	-
Employee benefit expenses	ı	1		1
Depreciation and amortization expense	ı	1	-	1
Finance cost	ı		-	•
Income tax adjustments related to earlier years	1	(0.08)	(0.07)	•
Goodwill Written off				1
Deferred tax adjustment	ı	0.07		•
Prelimianry Exps Adjustment	-	-	0.07	-
(v) Audit Qualifications:	1	-	-	-
Restated Shareholder's funds	103.57	70.34	16.05	2.38

		Annexure XXVIII			
STATEMENT OF CAPITALISATION					
PARTICULARS	Pre-Offer 30.09.2023	Post-Offer 30.09.2023			
Debt					
- Short Term Debt	-	-			
- Long Term Debt	34.90	-			
Total Debt	34.90	-			
Shareholders' Fund (Equity)					
- Share Capital	3.00	-			
- Reserves & Surplus	100.57	-			
Total Shareholders' Fund (Equity)	103.57	-			
Long Term Debt / Equity (In Ratio)	0.34	-			
Total Debt / Equity (In Ratio)	0.34	-			

Notes:-

- 1. Short Term Debts represent which are expected to be paid/payable within 12 months and exclude installments of Term Loans repayable within 12 months.
- 2. Long Term Debts represent debts other than Short Term Debts as defined above but include installments of Term Loans repayable within 12 months grouped under other current liabilities.
- 3. The figures disclosed above are based on restated statement of Assets and Liabilities of the Company as at 30/09/2023
- 4. The post issue capitalization will be determined only after the completion of the allotment of Equity Shares.

				Annexure XXIX
OTHER FINANCIAL	L INFORMATIC)N		
Particulars	As at 30.09.2023	As at 31.03.2023	As at 31.03.2022	As at 31.03.2021
Net Worth (A)	103.57	70.34	16.05	2.38
Earnings Before Interest, Tax, Depreciation and Amortisation (EBITDA)	51.62	81.48	22.42	(0.14)
Restated Profit after tax	33.22	54.30	13.67	(0.14)
Add: Prior Period Item	-	-	-	-
Adjusted Profit after Tax(B)	33.22	54.30	13.67	(0.14)
Number of Equity Share outstanding as on the End of Year/Period (C)	30,000	30,000	30,000	30,000
Weighted average no of Equity shares as on the end of the period year(D)	Ï			
- Pre Bonus (D(i))	30,000	30,000	30,000	30,000
- Post Bonus (D(ii))	9,30,000	9,30,000	9,30,000	
Face Value per Share	10.00	10.00	10.00	10.00
Restated Basic & Diluted Earnings Per Share (Rs.) (B/D)				
- Pre Bonus (B/D(i))	110.75	180.99	45.56	(0.45)
- Post Bonus (B/D(ii))	3.57	5.84	1.47	(0.01)
Return on Net worth (%) (B/A)	32.08%	77.19%	85.17%	-5.71%
Net asset value per share (A/D(i)) (Pre Bonus)	345.23	234.48	53.50	7.93
Net asset value per share (A/D(ii)) (Post Bonus)	11.14	7.56	1.73	0.26

Notes:-

- 1. The ratios have been Computed as per the following formulas
- (i) Basic Earnings per Share

Restated Profit after Tax available to equity shareholders

Weighted average number of equity shares outstanding at the end of the year / period

(ii) Net Asset Value (NAV) per Equity Share

Restated Net Worth of Equity Share Holders

Number of equity shares outstanding at the end of the year / period

(iii) Return on Net worth (%)

Restated Profit after Tax available to equity shareholders

Restated Net Worth of Equity Share Holders

- EBITDA represents Earnings (or Profit/ (Loss)) before Finance Costs, Income Taxes, and Depreciation and Amortization Expenses.
 Extraordinary and Exceptional Items have been considered in the calculation of EBITDA as they were expense items.
- 3. Net Profit as restated, as appearing in the Statement of Profit and Losses, has been considered for the purpose of computing the above ratios. These ratios are computed on the basis of the Restated Financial Information of the Company.
- 4. Earnings per share calculations are done in accordance with Accounting Standard 20 "Earning per Share", issued by the Institute of Chartered Accountants of India.
- 5. Weighted average number of Equity Shares is the number of Equity Shares outstanding at the beginning of the period adjusted by the number of Equity Shares issued during period multiplied by the time weighting factor. The time weighting factor is the number of days for which the specific shares are outstanding as a proportion of total number of days during the period.
- 6. The company issued 9,00,000 equity shares of Rs. 10/- each as bonus shares in the ratio of 30:1 vide EGM resolution passed on December 18,2023, effect of this bonus has been considered to calculate EPS.

				Annexure XXX
RESTATED ST	TATEMENT OF TAX SH			
Particulars	As at 30.09.2023	As at 31.03.2023	As at 31.03.2022	As at 31.03.2021
Net Profit/(Loss) before taxes (A)	44.90	73.37	18.47	(0.14)
Tax Rate Applicable %	26.00%	26.00%	26.00%	0.00%
Minimum Alternate Taxes (MAT)				19.06%
Adjustments				
Add: Depreciation as per Companies act	6.69	7.56	3.94	-
Add: Disallowance under Income Tax Act, 1961	0.60	0.64	0.36	-
Less: Taxable under other heads of income	-	-	-	-
Less: Depreciation as per Income Tax Act, 1961	6.54	8.08	4.14	-
Less: Deductions under Income Tax Act, 1961				
Less: Deffered Tax Credit Adjuted for computation of Tax under				
115JB of Income Tax Act				-
Net Adjustments(B)	0.76	0.13	0.16	-
Business Income (A+B)	45.66	73.50	18.63	(0.14)
Income from Capital Gains				
Sale Consideration	-	-	-	-
Less: Cost of Accquisition	-	-	-	-
Long/ Short Term Capital Gain	-	-	-	-
Less: Brought Forward Capital Gain	-	-	-	-
Income from Other Sources (Interest Income)	-	-	-	-
Interest on Income Tax Refund	-	-	-	-
Interest on security Deposit	-	-	-	-
Damages and claims received	-	-	-	-
Gross Total/ Taxable Income	45.66	73.50	18.63	(0.14)
Less: Deductions U/S 80JJAA			-	,
Net Total/ Taxable Income	45.66	73.50	18.63	(0.14)
Unabsorbed Depreciation	-	-		-
Tax Payable as per Normal Rate	11.87	19.11	4.84	-
Tax Payable as per Special Rate:	-	-	-	
Interest payable on above	_	-	_	-
Tax as per Income Tax (C)	11.87	19.11	4.84	-
Adjusted Book Profits for Computation of MAT U/s 115JB				_
Tax Payable as per Minimum Alternate Tax U/S				
115 JB of the Income Tax Act,1961	-	-	-	-
Interest Payable on above	-	-		-
Ta as per MAT (D)	-	-		-
Net Tax (Higher of C & D)	11.87	19.11	4.84	-
Current tax as per restated Statement of			4.04	
Profit & Loss	11.87	19.11	4.84	-

				Annexure - XXXI	
RESTATED STATEMEN	RESTATED STATEMENT OF CONTINGENT LIABILITIES				
Particulars	As at 30.09.2023	As at 31.03.2023	As at 31.03.2022	As at 31.03.2021	
Claims against the company not acknowledged as Debts	Unascertainable	Unascertainable	Unascertainable	Unascertainable	
Bank Guarantee (Financial)	NIL	NIL	NIL	NIL	
Bank Guarantee (Performance)	NIL	NIL	NIL	NIL	
Income Tax Demand	NIL	NIL	NIL	NIL	
TDS Demand	NIL	NIL	NIL	NIL	
Sales Tax Demand	-	-	-	-	
Other moneys for which the Company is contingently liable	NIL	NIL	NIL	NIL	
Commitments (to the extent not provided for)	NIL	NIL	NIL	NIL	
Estimated amount of contracts remaining to be executed on capital account and not provided for	NIL	NIL	NIL	NIL	
Uncalled liability on shares and other investments partly paid	NIL	NIL	NIL	NIL	
Other commitments	NIL	NIL	NIL	NIL	
Total		-	-	-	

	Restated	Statement of Accounting	, 144105		Annexure XXX
Particulars		As at 30.09.2023	As at 31.03.2023	As at 31.03.2022	Annexure XXX As at 31.03.202
Current Assets	[A]	282.89	248.25	149.74	2.65
Current Liabilities	[B] [A/B]	230.65 1.23	214.88 1.16	175.31 0.85	0.14 18.54
Variances	[A/D]	6.17%	35.25%	-95.39%	-
				Due to increase in	
Reason for Variances				current assets as well	
				as current liabilities	
Debt	[A]	34.90	9.90	10.10	0.20
Equity	[B]	103.57	70.34	16.05	2.38
Debt - Equity Ratio	[A/B]	0.34	0.14	0.63	0.08
Variances		139.44% Due to increase in	-77.64% Due to increase in	649.00% Due to increase in	-
Reason for Variances		debts in the current	capital in the current		
		year	year	year	
F : 111 (11)	TA1	F1 (0	01.40	22.42	(0.1
Earnings available for debt service Debt Service	[A] [B]	51.62	81.48	22.42	(0.14
Debt - Service Coverage Ratio	[A/B]	-	-	-	-
Variances		•	•	-	
Reason for Variances					
Net Profit after Tax	[A]	33.22	54.30	13.67	(0.1
Average Shareholder's Equity	[A]	33.22 86.96	54.30 43.20	9.21	(0.14
Return on Equity Ratio	[A/B]	0.38	1.26	1.48	-
Variances		-69.60%	-15.26%		
Reason for Variances		Due to increase in			
Reason for variances		profits in the current year			
Cost of Goods Sold	[A]	161.91	236.57	103.57	-
Average Inventory	[B]	16.54	3.39	1.42	-
Inventory Turnover Ratio Variances	[A/B]	9.79 -85,98%	69.85 -4.03%	72.78	-
variances		Due to increase in	-4.0376		-
Reason for Variances		inventory in the			
		current year			
Net Credit Sales	[A]	232.96	358.94	139.41	_
Average Trade Receivables	[B]	150.08	143.39	67.94	-
Trade Receivables Turnover Ratio	[A/B]	1.55	2.50	2.05	-
Variances		-37.99%	21.98%		
Reason for Variances		Increase in trade receivables in the	Increase in trade receivables in the		
Reason for Variances		current year	current year		
Net Credit Purchase	[A]	146.99	179.61	56.96	-
Average Trade Payables Frade Payables Turnover Ratio	[B] [A/B]	95.88 1.53	91.27 1.97	43.97 1.30	-
Variances	[A/D]	-22.10%	51.89%	1.50	_
			Increase in trade		
Reason for Variances			payables in the		
			current year		
Net Sales	[A]	232.96	358.94	139.41	-
Current Assets		282.89	248.25	149.74	2.65
Current Liabilities		230.65	214.88	175.31	0.14
Average Working Capital	[B]	257.69	179.21	- 11.38	1.25
Net Capital Turnover Ratio Variances	[A/B]	-54.86%	-116.35%	- 12.25	-
· anances		Increase in current	Increase in current		
Reason for Variances		assets & current	assets & current		
Reason for variances		liabilities along with	liabilities along with		
		increase in sales	increase in sales		
			T0.07	18.47	
Net Profit	[A]	44.90	73.37		
Net Sales	[B]	232.96	358.94	139.41	-
Net Sales Net Profit Ratio		232.96 0.19	358.94 0.20		
Net Sales Net Profit Ratio Variances	[B]	232.96	358.94 0.20 54.28%	139.41	-
Net Sales Net Profit Ratio	[B]	232.96 0.19	358.94 0.20	139.41	
Net Sales Net Profit Ratio Variances Reason for Variances	[B] [A/B]	232.96 0.19 -5.72%	358.94 0.20 54.28% Due to decrease in sales	139.41 0.13	-
Net Sales Net Profit Ratio Variances Reason for Variances Earning before interest and taxes	[A]	232.96 0.19 -5.72%	358.94 0.20 54.28% Due to decrease in sales	139.41 0.13 -	-
Net Sales Net Profit Ratio Variances Reason for Variances Earning before interest and taxes Capital Employeed	[B] [A / B] [A] [B]	232.96 0.19 -5.72% 44.92 138.47	358.94 0.20 54.28% Due to decrease in sales 73.92 80.24	139.41 0.13 - 18.48 26.15	-
Net Sales Net Profit Ratio Variances Reason for Variances Earning before interest and taxes Capital Employeed Return on Capital Employeed	[A]	232.96 0.19 -5.72% 44.92 138.47 0.32	358.94 0.20 54.28% Due to decrease in sales 73.92 80.24 0.92	139.41 0.13 -	-
Net Sales Net Profit Ratio Variances Reason for Variances Earning before interest and taxes Capital Employeed Return on Capital Employeed Variances	[B] [A / B] [A] [B]	232.96 0.19 -5.72% 44.92 138.47	358.94 0.20 54.28% Due to decrease in sales 73.92 80.24	139.41 0.13 - 18.48 26.15 0.71	-
Net Sales Net Profit Ratio Variances Reason for Variances Earning before interest and taxes Capital Employeed Return on Capital Employeed	[B] [A / B] [A] [B]	232.96 0.19 -5.72% 44.92 138.47 0.32 -64.78%	358.94 0.20 54.28% Due to decrease in sales 73.92 80.24 0.92 30.35%	139.41 0.13 - 18.48 26.15 0.71	-
Net Sales Net Profit Ratio Variances Reason for Variances Earning before interest and taxes Capital Employeed Return on Capital Employeed Variances Reason for Variances	[B] [A/B] [A] [B] [A/B]	232.96 0.19 -5.72% 44.92 138.47 0.32 -64.78% Increase in capital employed	358.94 0.20 54.28% Due to decrease in sales 73.92 80.24 0.92 30.35% Increase in capital employed	139.41 0.13 - 18.48 26.15 0.71	(0.14
Net Sales Net Profit Ratio Variances Reason for Variances Earning before interest and taxes Capital Employeed Return on Capital Employeed Variances Reason for Variances Net Return on Investment	[B] [A / B] [A] [B]	232.96 0.19 -5.72% 44.92 138.47 0.32 -64.78% Increase in capital employed	358.94 0.20 54.28% Due to decrease in sales 73.92 80.24 0.92 30.35% Increase in capital employed	139.41 0.13 - 18.48 26.15 0.71	(0.14
Net Sales Net Profit Ratio Variances Reason for Variances Earning before interest and taxes Capital Employeed Return on Capital Employeed Variances Reason for Variances Net Return on Investment Final Value of Investment	[B] [A/B] [A] [B] [A/B]	232.96 0.19 -5.72% 44.92 138.47 0.32 -64.78% Increase in capital employed	358.94 0.20 54.28% Due to decrease in sales 73.92 80.24 0.92 30.35% Increase in capital employed	139.41 0.13 - 18.48 26.15 0.71	(0.14
Net Sales Net Profit Ratio Variances Reason for Variances Earning before interest and taxes Capital Employeed Return on Capital Employeed Variances Reason for Variances Net Return on Investment	[B] [A/B] [A] [B] [A/B]	232.96 0.19 -5.72% 44.92 138.47 0.32 -64.78% Increase in capital employed	358.94 0.20 54.28% Due to decrease in sales 73.92 80.24 0.92 30.35% Increase in capital employed	139.41 0.13 - 18.48 26.15 0.71	(0.14
Net Sales Net Profit Ratio Variances Reason for Variances Earning before interest and taxes Capital Employeed Return on Capital Employeed Variances Reason for Variances Net Return on Investment Final Value of Investment Initial Value of Investment	[B] [A/B] [A] [B] [A/B]	232.96 0.19 -5.72% 44.92 138.47 0.32 -64.78% Increase in capital employed	358.94 0.20 54.28% Due to decrease in sales 73.92 80.24 0.92 30.35% Increase in capital employed	139.41 0.13 - 18.48 26.15 0.71	(0.14



O CPCI GO GPVøUFKÆWUUQP'CPF'CPCN[UKU'QHHKPCPEKCN'EQPFKVKQP'CPF'TGUWNVU'QH' QRGTCVKQPU'

[qw'ij qwrf'tgcf''j g'hqnqy kpi 'f kwwidqp'qht'qwt'hlpcpekcnleqpf kkqp'cpf'tgwwni'qht'qrgcvkqpu'vqi gij gt'y kj ''qwt'' HlpcpekcnlUcvgo gpwi'cu'Tgwcvgf'y j kej 'ku'kpenwfgf'kp'ij ku'Ftchv'RtqurgewwiO'j g'hqnqy kpi 'f kwwidqp'cpf'cpcnfuku'qht' qwt'hlpcpekcnlUcvgo gpwi'cu'Tgwcvgf.'hqt''j g'tgtkqf'' gpfgf'Ugrvgo dgt'52.'4245'cpf'hqt'ij g'{gctu'gpfgf'Octej'53.'4245.'4244'cpf'4243'kpenwf kpi 'ij g'tgwcyf'pqwu'cpf'' tgrqtw'hpenwfgf'kp'ij kit'Ftchv'Rtqurgewwi'kit'rtgrctgf'kp'ceeqtfcpeg'y kj 'tgswktgo gpwi'qh'ij g'Eqorcpkgu'Cev'4235'' cpf'tgwcvgf'kp'beeqtfcpeg'y kj 'ij g'UGDK*KEFT+Tgi wrcvkqpu'423:.'y j kej 'f khtgt'kp'egtvckp'b cvgtkchtgwrgewi'ktqo'' HHTU'WUUI CCR'cpf'I CCR'kp'qi gt'eqwpvtkguOQwt'HkpcpekcnlUcvgo gpwu'cu'tgwcvgf' j cxg'dggp'fgtkxgf'htqo'qwt'' cwf kgf'twcwwqt{'hpcpekcnlucvgo gpwuOCeeqtfkpinf.'ij g'fgi tgg'vq'y j kej 'qwt'HkpcpekcnlUcvgo gpvu'cu'Tgwcvgf'y knt'' rtqxkfg'b gcpkpi hwnlkphqto cvkqp'kq'b'trqurgevkxg'kpxgwqt'kp'eqwpvtkgu'qig t'ij cp'Kpfkc'ku'gpvtgnf'fgrgpfgpv'qp'ij g'' tgcftgtwu'ngxgnlqhlkco khctkaf'y kj 'Kpfkcp'I CCR.'Eqorcpkgu'Cev'UGDKTgi wrcvkqpu'cpf'qi gt'tgnxcpv'ceeqwpvkpi'' rtcevkegu'lp'KpfkcO'

Vj kif kuewuulap 'eap w lp u'hat y ctf 'haankpi 'luc vgo gp wi'c pf 't ghrge wi'a wt 'e wt t gp v'xkgy u'y kj 't gur gev'ka 'hwwt g'gxgp wi'c pf'' kp c p ekc n' r gt hat o c p e g0'Cewoc n' t guwnu'o c {''f khigt''o c vgt kc n(''ht ao'''y aug''c p vke kr c vgf ''hp ''y gug''Hat y ctf / Naankpi '' Usc vgo gp wi'c u'c 't guwnv'ah'egt w lp 'hc e vat u'iwej 'c u'd j aug'f guet klaf f'wpf gt 'ej c r vgt u'd knigf '5 T kun'Hc e vat uö'c pf '5 Hat y ctf'' Naankpi 'Usc vgo gp wiö'd gi lap kpi 'ap 'f ci gu'46'c pf '3; .'t gur ge vkxgn('ah't) ku'F t c hv'Rt aur ge wul0'

Qwt'Hlpcpekch[gct'gpfu'qp'Octej '53'qhtgcej '{gct0Ceeqtfhpin(.'bnltghgtgpegu'\q'b'tct\hewnct'Hlpcpekch[gct'btg'\q'' yi g'34'b qpyj u'gpfgf'Octej '53'qhtgcvt{gct0'}

Qwt'Eqorcp{'y cu'kpeqtrqtcvgf'qp'Fgegodgt'44.'4239'wpfgt'yjg'Eqorcpkgu'Cev.'4235'*3: 'qh'4235+'cpf''yjcv'yjg'eqorcp{'ku''klokvgf''d{"ujctgu0'Vjg''Eqtrqtcvg''Ktgpvkx{"Pwodgt''qh''yjg''eqorcp{'ku''W4:34;YD4239RVE4462230'Qwt''eqorcp{'ku''eqpxgtvgf'kpvq'rwdrke'eqorcp{'qp'Fgegodgt''3;.'4245'cpf'htguj''egtvkhkecvg''qh'kpeqtrqtcvkqp'ycu'kuuwgf''dgctkpi''Eqtrqtcvg'' Ktgpvkhkecvkqp'Pwodgt'W4:34;YD4239RNE4462230'

Y g"ctg"kpvq"rtqxkf kpi "ur gekcnk gf "ugtxkegu"kp"vj g"rtg/vtgcvo gpv'cpf "qh"Rqy f gt"Eqcvkpi "qh"cnwo kpkwo "Gz vtwukqpu0'Vj g" Ugtxkegu"Qhhgtgf "d{"wu"kpenwf gu"Rqy f gt"Eqcvkpi ."RXF H"Eqcvkpi ."Y qqf "Hkm "Eqcvkpi ."Kpf wnvtkch"Hcdtkecvkqp."gve0'Qwt" Eqo r cp{"ku"cp"KUQ"; 223-4237"egtvkhlgf "qti cpk| cvkqp"hqt"S wcrkx{"O cpci go gpv'U{ uvgo 0'Y g"ctg"eqo o kwgf "q"rtqxkf g" swcrkx{"y qtm"vq"qwt"ewnvqo gtu"vj cv'o ggwt"vj g"rtqlgev'uvcpf ctf u"cpf "ur gekhlecvkqpu"hqt"o cvgtkcnn."y qtmo cpuj kr ."uej gf wgu" cpf "r wdrke"ugtxkeg"y j krg"o ckpvklpkpi "rtqhkxcdkrkx{"cpf "eqo r gvkxkgpgun0'Qwt"Eqo r cp{"j cu"cej kgxgf "c"nppi "uvcpf kpi "ewnvqo gt"dcug."y j kej "kpenwf gu"tgpqy pgf "rtkxcvg"gpvkxkgu0'Y g"ugtxgf "xctkqwu"Eqo r cpkgu"rkng"Kphqu{u."Uj {co "Uvggn" Dcpf j cp'Dcpm"O gtrkp'Grgo gpvu."Co dg{"I cvgy c{u'xkc"qwt"hcdtkecvqtu0Y j krg."y g"qhhgt"o clqtkx{"qhiqwt"ugtxkegu"kp"gcuvgtp" Kpf kc."j qy gxgt"y g"i tcf wcm{"kpygf" vq"gzr cpf "qwt"dwukpguu"qr gtcvkqpu"f qo guvkecm{"cpf "kpvgtpcvkqpcm(0'Y g"r rcp"vq" f kxgtukh{"cpf "gzr cpf "qwt"rtgugpeg"kp"qvj gt"Kpf kcp"uvcygu"hqt"vj g"i tqy y "qh"qwt"dwukpguu0'

Uki pkłkecpy'f gxgmr o gpyu'twdugs wgpy'tq'tj g'hcuy'hkpcpekcn{ gct "

Kp"yj g"qr kpkqp"qh"yj g"Dqctf "qh"F ktgevqtu"qh"qwt"Eqorcp{."ukpeg"yj g"f cwg"qh"yj g"ncuv"hkpcpekch"uvcvgo gpwi"f kuenqugf "kp"yj ku" Ftchv"Rtqur gewu."yj gtg"j cxg"pqv"ctkugp"cp{"ektewo uvcpeg"yj cv"o cvgtkcm("qt"cf xgtugn("chhgev"qt"ctg"nkngn("vq"chhgev"yj g" rtqhkscdkkv("qh"qwt"Eqorcp{"qt"yj g"xcnwg"qh"ku"cuugvu"qt"ku"cdkkv("vq"rc{"ku"o cvgtkcnihcdkkvkgu"y kyj kp"yj g"rtgxkqwu"yy gnxg" o qpyj u"gzegr v<"

- Vj g'eqo r cp{'kpetgcugf 'kwøu'Cwvj qtkugf 'gs wkv{'uj ctg'ecr kscrihtqo " 32.22.2221/'vq" 72.22.2221/'xkf g'tguqnwkqp'r cuugf " kp'ksu'o go dgtu'o ggykpi 'f cygf 'Lwn{ '48.'42450'
- Vj g"Dqctf "qh'qwt "Eqo r cp{ "j cu"cr r tqxgf "vq"tckug"hwpf u"vj tqwi j "kpkkcn'r wdnke "qhhgtkpi "kp"vj g"Dqctf "o ggvkpi "j gnf "qp" F gego dgt "35."42450'
- Vj g"o go dgtu"qh"qwt"Eqo r cp{"crrtqxgf"r tqrqucn"qh"Dqctf"qh"F ktgevqtu"vq"tckug"hwpf u"vj tqwi j "kpkkcn"r wdrke"qhhgtkpi "kp"vj g"gzvtc"qtf kpct{"i gpgtcn"o ggvkpi "j grf"qp"F gego dgt"3: ."42450'
- Qwt"Eqo r cp{"y cu"eqpxgt vgf "htqo "c"r tkxcvg"hto kgf "eqo r cp{"vq"r wdrhe"hto kgf "eqo r cp{"xkf g"tguqnwkqp"r cuugf "kp"ku" o go dgtu"o ggvkpi "f cvgf "Qevqdgt"46."4245"cpf "c"htguj "egt vkhecvg"qh"kpeqtr qtcvkqp"eqpugs wgpv'vq"eqpxgtukqp"y cu'kuuwgf "qp" F gego dgt" 3; ." 4245" d{" vj g" T gi kuntct" qh" Eqo r cpkgu." Mqmrcvc" dgctkpi " Eqtr qtcvg" Kf gpvkhecvkqp" P wo dgt" W4: 34; Y D4239RNE446223"
- Vj g'Eqo r cp{ 'kuuwgf '; .22.222'dqpwu'Gs wkw{ 'Uj ctgu'kp''yj g'r tqr qtvkqp''qh'52-3'*Vj ktv{ +'hwm{ 'r ckf 'gs wkw{ 'uj ctg''qh' 32022" gcej "cmqwgf "ci ckpuw'3*Qpg+"Gs wkw{ "Uj ctgu"qh" 32022"gcej "xkf g"tguqnwkqp"r cuugf "kp"kuu"o go dgtu"o ggwkpi "f cwgf "F gego dgt"3: ."42450'



Hcevqt u'chłgevlpi 'qwt 't guwnu'qh'qr gt c vlqpu''

Qwt "eqor cp { øu 'hwwt g 't guwnu 'qh 'qr gt c kqpu "eqwrf "dg 'chhge vgf "r q vgp vkcm ("d { 'vj g 'hqmqy kpi 'hce vqt u < ''

- 30 Utqpi "gzgewkqp"ecr cdkrkkgu'y kj "kpf w.mt { "gzr gt kgpeg""
- 40 Gzkukpi "enkgpv"tgncvkqpuj kr "
- 50 S works ('Cuuwtopeg''
- 60 Gzr gtkgpegf "o cpci go gpv'\gco "

Vj g'hqnqy kpi 'tcdng'lgv'hqt vj 'egt vckp'hg{ 'r gt hqt o cpeg'kpf kecvqt u'hqt 'tj g'{ gct u'kpf kecvgf <'

Mg{ 'Rgt hqto cpeg' Kpf lecvqt u'qh'Qwt 'Eqorcp{ ''

Mg{ '' Hpcpelcii' Rgt lqt o cpeg''	Hqt 'Rgt kqf 'gpf gf '' Ugr vgo dgt '52.'' 4245''	Ң '4244/45''	Ң '4243/44''	Н['4242/43''
Tgxgpwg" htqo " qr gtcvkqpu*3+"	4540 8"	57: 0, 6"	35; 663"	2@2"
GDKVF C*4+"	73084"	: 306: "	44064"	*2036+"
GDKVF C'O cti kp*5+"	44088' "	44092' "	3802: ' "	/"
RCV"	55044"	76\odots2"	35089"	*206+"
RCV'O cti kp*6+"	36048' "	37035' "	; 0 2' "	/"
P gw qt y *7+"	325079"	92\(\sigma 6"\)	38027"	405: "
TqG" *8+"	5: 043' "	34708; ' "	36: 056' "	*7077+' "
TqEG' '*9+"	54066' "	; 3033' "	92088' "	*7049+' "

P qvgu<'

Gzr repevkąpu'hąt 'MRKO gvt keu''

MRK'	Gzræpeskip''
Tgxgpwg'ltqo 'Qrgtcvkqp"	Tgxgpwg'ltqo 'Qr gtcvkqpu'ku'wugf 'd{ 'qwt'o cpci go gpv'vq''vtcem'vj g'tgxgpwg'r tqhkrg''
	qh"vjg"dwukpguu"cpf"kp"wtp"jgru"vq"cuuguu"vjg"qxgtcm"hkpcpekcn'rgthqtocpeg"qh"
	qwt 'Eqorcp{ 'cpf 'xqnwog'qh'qwt 'dwukpguu'kp'ng{ 'xgt vkecnu'
GDKVF C"	GDKVFC" rtqxkfgu" kphqtocvkqp" tgictfkpi" vjg" qrgtcvkqpcn" ghhkekgpe{"qh" vjg"
	dwulpguu"
GDKVF C'O cti kp'* +"	GDKVFC'Octi kp'* +'ku'cp'kpf kecvqt'qh'vjg'qrgtcvkqpcn'rtqhkxcdknkx{'cpf'hkpcpekcn'
	r gthqto cpeg"qh"qwt"dwwkpguu"
RCV"	Rtqhkv"chygt"vcz"rtqxkfgu"kphqtocvkqp"tgictfkpi"yjg"qxgtcm"rtqhkvcdknkv{"qh"yjg"
	dwukpguu"
RCV'O cti kp''* +"	RCV" Octikp" * + "ku" cp" kpf kecvqt" qh" vjg" qxgtcm'r tqhkxcdkrkx{ "cpf" hkpcpekcn'
	rgthqtocpeg'qh'qwt'dwwlpguu0'
Pgv'Yqtyj"	P gv'y qtvj "ku'wugf "d{"vj g"o cpci go gpv'vq"cuegtvckp"vj g"vqvcn'xcnwg"etgcvgf "d{"vj g"
	gpvkv{ "cpf "rtqxkf gu"c"upcruj qv"qh"ewttgpv"hkpcpekcn"rqukvkqp"qh"vj g"gpvkv{ 0'
TqG' "	TqG'rtqxkfgu'jqy "ghhkekgpvn("qwt'Eqorcp{"igpgtcvgu'rtqhkvu'htqo"Ujctgjqnfgtuø"
	Hwpf u"
TqEG' "	TQEG'r tqxkf gu'j qy "ghhkekgpvn("qwt "Eqorcp{"i gpgtcvgu"gctpkpi u'htqo "vj g"ecrkvcn"
	gormq{gf'kp'vjg'dwukpguu0'

[&]quot;3+Tgxgpwg'htqo 'Qrgtcvkqpu'o gcpu'ij g'Tgxgpwg'htqo 'Qrgtcvkqpu'cu'crrgctkpi 'kp'ij g'Tguxcvgf 'Hkpcpekcn'Ucvgo gpvu'''

^{**+&}quot;GDKVF C"ku"ecnewrcvgf "cu"Rt qlkv"dglqt g"\vz"- "F grt gekcvkqp"- "Kpvgt guv"Gzr gpugu"/"Qvj gt "Kpeqo g""

^{*5+&}quot;:GDINF C"Octi kpø'ku'ecrewrcyef "cu'GDINF C"f kxkf gf "d{ "Tgxgpwg"htqo "Qrgtcykqpu""

^{*6+&}quot;-RCV"Octi kpø'ku"ecrewrcygf "cu"RCV"lqt"\j g"r gt kqf [{ gct "f kxkf gf "d{ "t gxgpwg"lt qo "qr gt cykqpu0"

^{*7&}quot;P gv'y qt yi "o gcpu"\j g"ci i t gi cvg"xcnwg"qh\'y g"rc\ff/wr"\j ct g"ecr kxnlcpf "t gugt xgu'cpf "lwt rnwu"qh\'y g"eqo rcp{"hguu'f ghgt t gf "vcz"cuugvu\o""

^{*8+}Tgwtp"qp"Gswlof 'ku't cwlq"qh'Rtqllo/chgt"Vcz"cpf "Cxgt ci g"U ct gj qrf gt 'Gswlof""

^{*9+}Tgwtp'qp'Ecrkxcn'Go rm{gf 'ku'ecnewncvgf ''cu'GDKV'f kxkf gf ''d{ ''ecrkxcn'go rm{gf .''y j kej 'ku'f ghkpgf ''cu'uj ct gj qnf gt uø'gs wkv{ ''rmu'nqpi ''vgt o ''dqtt qy kpi uO'



UVCVGO GP V'QH'UN P KHKE CP V'RQNKE KGU''

Eqtrqtcvg'Kohqto cvkqp<'

Vj g"eqo r cp{"y cu"qtki kpcm{"hqto gf"("kpeqtr qtcvgf "cu"c"Rtkxcvg"Nko kgf "Eqo r cp{"cv"Mqmcvc."Y guv"Dgpi cn"wpf gt"vj g" Eqo r cpkgu"Cev."4235"wpf gt"vj g"pco g"qh"õCuuqekcvgf "Eqcvgtu"Rtkxcvg"Nko kgf ö"xkf g"egt vkhecvg"qh"kpeqtr qtcvkqp"f cvgf "F gego dgt "44."4239"dgctkpi 'Eqtr qtcvg'kf gpvkv{ 'P wo dgt 'W4: 34; Y D4239RVE446223'kuuwgf 'd{ 'vj g"Tgi kntct 'qh"Eqo r cpkgu." Mqmcvc."Y guv'Dgpi cn')'Uvdugs wgpvn{."qwt "eqo r cp{"y cu"eqpxgt vgf "kpvq"Rwdhe"Nko kgf "Eqo r cp{"xkf g"ur gekcn't guqnwkqp" r cuugf 'd{ 'qwt 'uj ctgj qrf gtu'cv'vj g"Gz vtc'Utf kpct{ 'I gpgtcn'O ggvkpi 'j grf 'qp'Qevqdgt'47vj ."4245"cpf 'vj g"pco g'qh'vj g'eqo r cp{"y cu"ej cpi gf "vq"\$Cuuqekcvgf "Eqcvgtu'Nko kgf \$"r wtuvcpv'vq"kuuvcpeg"qh'Htguj "Egt vkhecvg"qh"Kpeqtr qtcvkqp"f cvgf "F gego dgt" 3; vj ."4245"d{ "T gi kntct"qh"Eqo r cpkgu." Mqmcvc."Y guv'Dgpi cn') Vj g"Eqtr qtcvg"K gpvkhecvkqp"P wo dgt"qh"qwt"eqo r cp{" W4: 34; Y D4239RNE4462230'

Vj g"eqo r cp{"ku"o ckpn("gpi ci gf "kp"vj g"dwukpguu"ur gekcnk| kpi "kp"vj g"r tgvtgcvo gpv."r qy f gt"eqcvkpi ."y qqf "eqcvkpi "("RXFH" eqcvkpi "qp"O gvcnu."o clqtn("dgkpi "cnvo kpkvo "gz vtwukqpu0"

Pqvg'3/"Uki pkhkecpv'Ceeqwpvkpi "Rqnkekgu<"

308" Deuku''qh'i'r tgr etevkqp"qh'ihkpepeken'uvevgo gpwu"

Vj g'hopekcniucvgo gpwij cxg'idggp'r tgr ctgf 'kp'ceeqtf cpeg'y kj ''y g'cr r necdng'Ceeqwpvkpi 'Ucpf ctf u'pqvkhlgf 'wpf gt'Ugevkqp'' 355"qh''y g"Eqo r cpkgu''Cev."4235"tgcf 'y kj 'T wrg'9"qh'Eqo r cpkgu''Ceeqwpvu+T wrgu."4236"wpf gt 'j kurqtkecn'equv'eqpxgpvkqp'' qp"ceetwcn'dcuku''OCm''y g"cuugwu''cpf "nkcdkrkkgu"j cxg"dggp"encuukhkgf "cu"ewttgpv'qt"pqp/ewttgpv'cu''r gt "Eqo r cp{øu"pqto cn' qr gtcvkpi "e{erg"cpf "qvj gt "etkgtkc"ugv'qwv'kp"vj g"Uej gf wrg'WKVq"vj g'Eqo r cpkgu''Cev."42350'Dcugf "qp"vj g'pcwtg'qh'cevkxkkgu." y g'Eqo r cp{"j cu"cuegtvckpgf "ku"qr gtcvkpi "e{erg"cu"34"o qpvj u"hqt"vj g"r wtr qug"qh'ewttgpv'cpf "pqp/ewttgpv'encuukhecvkqp"qh' cuugwu''cpf "hcdkrkkgu0'

304" Wug''qh'Guvko cvgu"

Vj g'r tgr ctckqp'qh'hy g'hlpcpekchlucygo gpwlku'kp'eqphqto kx{ 'y kxj 'Kpf kcp'I CCR'*I gpgtcm('Ceegr ygf 'Ceeqwpvkpi 'Rtkpekr rgu+'' y j kej 'tgs wktgu''y g'o cpci go gpv'vq'o cmg''gurko cvgu'cpf 'cuuwo r vkqpu''y cv'chhgev'y g'tgr qtvgf 'co qwpwl'qh'cuugwi'cpf 'hlcdkrkkgu'' cpf 'f kuemuwtgu'qh'eqpvkpi gpv'hlcdkrkkgu''cu''qp''y g'f cvg''qh'y g'hlpcpekchlucygo gpw0Vj g''gurko cvgu''cpf 'cuuwo r vkqpu''o cf g''cpf '' cr r nkgf 'kp''r tgr ctkpi ''y g'hkpcpekchlucygo gpw1ctg''dcugf ''wr qp''o cpci go gpvyu'dgwn'npqy rgf i g''qh'ewttgpv'gxgpw1cpf ''cevkqpu''cu'' qp''y g''f cvg''qh'hkpcpekchlucygo gpw10J qy gxgt.'f wg''vq''wpegtvckpvkgu''cwcej gf ''vq''y g''cuuwo r vkqpu''cpf ''gurko cvgu''o cf g''cewch' tgwnwu''eqwrf ''f khgt''htqo ''y qug''gurko cvgu0Cp{ ''tgxkukqp''vq''ceeqwpvkpi ''gurko cvgu''ku''tgeqi pk gf ''r tqur gevkxgn(''kp''ewttgpv''cpf'' hwwtg''r gtkqf u0'

305" Tgxgpwg'Tgeqi pkkqp"

"

- *c+" Tgxgpwg'ku't geqi pk| gf '\q'\j g''gzvgpv'\j cv'kv'ku'r tqdcdrg'\j cv'\j g''geqpqo ke''dgpghku''y knihrqy '\q'\j g''Eqo r cp { 'cpf '\j g'' tgxgpwg''ecp''dg'tgrkcdr(''o gcuwtgf 0'
- *d+" Ucrgu'ctg'tgeqi pk gf 'qp'ceetwcri'dcuku. "cpf 'qpn ("chwgt "\tcpuhgt "qh i qqf u'qt 'ugtxkegu '\q' vj g'ewuxqo gt0'
- *e+" Fkxkfgpf"qp"Kpxguvogpvu"ctg"tgeqipk|gf"qp"tgegkrv"dcuku0"
- *f +" Kpvgtguv'kpeqo g''ku''tgeqi pk| gf "qp"c''vko g''r tqr qtvkqp"dcuku''vcmkpi "kpvq"ceeqwpv''vj g''co qwpv'qwuvcpf kpi "cpf "vj g''tcvg" cr r nkecdng0'
- 306" Rtqr gtv{. ''Rrcpv'(''Gs wkr o gpv'cpf ''Kpvcpi kdrg''Cuugvu'(''F gr t gekcvkqp''

Rtqr gtv{."i rcpv'cpf "gs wkr o gpv'ctg'ivcvgf "cv'j knqtkecriequv'iguu'ceewo wrcvgf "f gr tgekcvkqp."cpf "ceewo wrcvgf "ko r ckto gpv'iquu." kh" cp{0'J knqtkecriequv'eqo r tkugu'qh''yi g"r wtej cug"r tkeg"kpenwf kpi "f wkgu"cpf "pqp/tghwpf cdrg" vczgu."dqttqy kpi "equv'kh" ecr kxcrk cvkqp"etksgtkc"ctg"o gv"f ktgevn{"cwtkdwcdrg"gzr gpugu"kpewttgf "vq"dtkpi "yi g"cuugv'vq"yi g"mecvkqp"cpf "eqpf kskqp" pgeguuct{"ht" ky' vq" dg" ecr cdrg" qh" dgkpi "qr gtcvgf "kp" yi g" o cppgt" kpvgpf gf "d{"o cpci go gpv" cpf "kpkskcri guwlo cvg" qh' f geqo o kuukqpkpi ."tguvqtkpi "cpf "uko krct "hcdkrkkgu0Uwdugs wgpv'equw'tgrcvgf "vq"cp'ksgo "qh'l' tqr gtv{."r rcpv'cpf "gs wkr o gpv'ctg" tgeqi pk gf "cu"c"ugr ctcvg"cuugv."cu"cr r tqr tkcvg."qpn{"y j gp"kx'lku"r tqdcdrg"yi cv'hwwtg"geqpqo ke"dgpghku"cuuqekcvgf "y kyi "yi g" ksgo "y km'lmqy "vq"yi g"i tqwr "cpf "yi g"equv'qh"yi g"ksgo "ecp"dg"o gcuwtgf "tgrkcdn{0'Vj g"ectt{kpi "co qwpv'qh'cp{"eqo r qpgpv' ceeqwpvgf "hqt"cu"c"ugr ctcvg"cuugv'ku"f gtgeqi pk gf "y j gp"tgr rcegf 0'C m'qyi gt"tgr cktu"cpf "o ckpvgpcpeg"ctg"tgeqi pk gf "kp" uvcvgo gpv'qh'r tqhkv'cpf "nquu'f wtkpi "yi g'tgr qtvkpi "r gtkqf "y j gp"yi g{"ctg"kpewttgf 0"

...



307" F gr tgekcvkqp"qh"Vcpi kdrg"Cuugvu"

F gr tgekckqp"qp"vcpi kdrg"r tqr gtv{."r rcpv"("gs wkr o gpv"ku"ej cti gf "qp"y tkwgp"f qy p"xcnwg"qh"vj g"cuugv'cu"r gt"vj g"Eqo r cpkgu" Cev."42350F grtgekcvkqp"qp"cuugvu"r wtej cugf lces wktgf "f wtkpi "vj g"{ gct "ku"ej cti gf "htqo "vj g"f cvg"qh"r wtej cuglces wkukkqp"qh" yj g"cuugv'qt'htqo "\j g"fc{"\j g"cuugv'ku'tgcf{"hqt'kwu'kpvgpfgf"wug0'Uko krctn(."fgrtgekcvkqp"qp"cuugvu'uqrfffkuectfgf"fwtkpi "\j g" { gct 'ku'ej cti gf 'wr 'vq'yj g'f cvg'y j gp'yj g'cuugv'ku'uqnf lf kuectf gf "

308" Kpxguvo gpvu"

Pqp/'Ewttgpvl'Nqpi/ygto 'Kpxguvo gpwi'ctg'uvcygf 'cv'equv0'Rtqxkukqp'ku'o cf g'hqt'f ko kpwkqp'kp'vj g'xcnwg'qh'vj g'kpxguvo gpwi." kpxguvo gpv.'\j g'f khhgtgpeg'dgwy ggp'kul'ectt{kpi 'co qwpv'cpf 'pgv'f kur qucn'r tqeggf u'ku'ej cti gf ''qt 'etgf kgf ''\q'\j g'Ucvgo gpv'qh' Rtqhk'cpf "Nquu0'Ewttgpv'lpxguvo gpw'ctg" ecttl<math>gf "cv'my gt"qh'equv'cpf "hckt" xcnwg" f gygto kpgf "qp"cp"kpf kxkf wcn'dcuku0'Qp" (2000) f wchtgpv'lpxguvo gpw'ctg" ecttlgf "cv'my gt"qh'equv'cpf "hckt" xcnwg" f gygto kpgf "qp"cp"kpf kxkf wcn'dcuku0'Qp" (2000) f wchtgpv'lpxguvo gpw'ctg" ecttlgf "cv'my gt"qh'equv'cpf "hckt" xcnwg" f gygto kpgf "qp"cp"kpf kxkf wcn'dcuku0'Qp" (2000) f wchtgpw'lpxguvo gpw'ctg" ecttlgf "cv'my gt"qh'equv'cpf "hckt" xcnwg" f gygto kpgf "qp"cp"kpf kxkf wcn'dcuku0'Qp" (2000) f wchtgpw'lpxguvo gpw'ctg" ecttlgf "cv'my gt"qh'equv'cpf "hckt" xcnwg" f gygto kpgf "qp"cp"kpf kxkf wcn'dcuku0'Qp" (2000) f wchtgpw'ctg" (2000) f wchtgpw'ctg' (2000) f yj g''Ucvgo gpv'qh'Rtqhkv'cpf 'Nquu0' "

309" Korckto gpv'qh'Cuuguu"

Cuuguno gpvku'f qpg''cv'gcej 'Doropeg''Uj ggvff cvg''cu''q''y j gyj gt''yj gtg'ku''cp{ 'kpf kecvkqp''yj cv'c''vcpi kdrg''cuugv'o ki j v'dg'ko r cktgf 0' Hqt"yi g"r wtr qug"qh"cuuguulpi "ko r ckto gpv."yi g"uo cmguv"kf gpvlhlcdrg"i tqwr "qh"cuugvu"yi cv'i gpgtcvgu"ecuj "kphrqy u"htqo " eqpvkpvkpi "wug"vj cv'ctg'icti gn("kpf gr gpf gpv'qh'vj g"ecuj "hrqy u'hrqo "qvj gt"cuugwu"qt"qvj gt"i tqwr "qhi'cuugwu."ku'eqpukf gtgf "cu'c" ecuj "i gpgtcvkpi "wpkv0'Kt"cp{ "uwej "kpf kecvkqp"gzkuxu."cp"guvko cyg"qh"vj g"tgeqxgtcdrg"co qwpv'qh"cuugvl"ecuj "i gpgtcvkpi "wpkv'ku" o cf g0Cuugui'y j qug'ectt{kpi 'xcnwg'gzeggf u'iy gkt'tgeqxgtcdɪg'co qwpv'ctg'y tkwgp'f qy p'\q'tgeqxgtcdɪg'co qwpv\0Tgeqxgtcdɪg'' co qwpvku'j ki j gt'qh'cp'cuugyù'qt'ecuj 'i gpgtcvkpi 'wpkyù'pgv'lugmkpi 'r tleg'cpf 'kuu'xcnwg'kp'wug0Xcnwg'kp'wug'ku'vj g'r tgugpv'xcnwg'' qh'gusko cvgf "hwwtg"ecuj "hrqy u'gzr gevgf "vq"ctkug"htqo "vj g"eqpskpwkpi "wug"qh'cp"cuugv'cpf "htqo "ku"f kur qucn'cv'vj g"gpf "qh'kuu" wughwihthg0Cuuguuo gpvku'cnq'f qpg''cv'gcej 'Doropeg'Uj ggvff cvg''cu''q''y j gvj gt''y j gtg'ku''cp{ 'kpf kecvkqp''yj cv''cp'ko r ckto gpv'hquu'' tgeqi pk| gf "hqt"cp"cuugv'kp"rtkqt"ceeqwpvkpi "r gtkqf "o c{"pq"nqpi gt"gzkuv'qt"o c{"j cxg"f getgcugf 0"

30 " Kpxgpvqtkgu"

Kpxgpvqtkgu'qh'ttcf gf 'i qqf u'ctg'xcnwgf 'cv'nqy gt 'qh'equv'cpf 'pgvtgcnk cdng'xcnwg0Equv'eqo r tkugu'qh'cm'equvu'qh'r wtej cug'cpf " qý gt"equwu"kpewttgf "kp"dtkpi kpi "ý g"kpxgpvqtkgu"vq"ý gkt"r tgugpv"nqecvkqp"cpf "eqpf kkkqp0'Equv"hqto wnc"wugf "ku"HKHQOP gv" tgcnk| cdng"xcnwg"ku"\j g"gunko cvgf "ugmkpi "r tkeg"kp"\j g"qtf kpct{"eqwtug"qh"dwukpguu. "nguu"gunko cvgf "equn"pgeguuct{"vq"o cmg"\j g" ucng0'

30," Kpxguvo gpvu"

Kpxguvo gpwi'encuukhkgf "cu'hqpi /vgto "kpxguvo gpwi'etg'uvcvgf "cv'equvORtqxkukqp'ku'o cfg'vq'tgeqi pktg'cp{"fko kpwkqp'qvj gt''vj cp" vgo rqtct{"lp"yj g'xcnwg"qh'uwej "lpxguvo gpvu0Ewttgpv'lpxguvo gpvu"ctg"ecttlygf "cv"nqy gt"qh"equv"cpf "lickt"xcnwg0"

3032" Gorm{gg'Dgpghk'Gzrgpugu"

3+" Uj qtv'vgto "gormq{gg"dgpghku"

Uj qtv'\gto "gorm{gg"dgpghkul'ctg"tgeqipk| gf "cul'cp"gzrgpug"cv'\jg"\wpfkueqwp\gf "coqwpv'kp"\jg"\wc\gogpv'qh"Rtqhkv'cpf "nquu" hqt"yj g"{ gct"y j kej "kpenxf gu"dgpghku"nkng"ucnct { ."y ci gu."dqpwu"cpf "ctg"tgeqi pkl gf "cu"gzr gpugu"kp"yj g"r gtkqf "kp"y j kej "yj g" go rm{gg'tgpfgtu'yjg'tgrcvgf'ugtxkeg0'

4+" *c+'F ghkpgf 'Eqpvtkdwkqp'Rrcp<'

Vjg"Eqorcp{"jcu"Fghkpgf"Eqpvtkdwkqp"Rrcpu"hqt"Rquv/gorm[ogpv'dgpghku"kp"vjg"hqto"qh"Rtqxkfgpv'Hwpf"hqt"cm" $go\ r\ m\{ggu"y\ j\ kej\ "ctg"cf\ o\ kpknygtgf\ "d\{"Tgi\ kqpcn'|Rtqxkf\ gpv'|Hwpf\ "Eqo\ o\ kuukqpgt0'|Rtqxkf\ gpv'|Hwpf\ "cpf\ "Go\ r\ m\{gg"|Ucvg"\ nq\{gg"|Ucvg"\ nq\{gg"$ Kpuwtcpeg"ctg"encuukhkgf "cu"f ghkpgf "eqpvtkdwkqp"r ncpu"cu" yi g"Eqo r cp{"j cu"pq"hwt yi gt"qdrki cvkqp"dg{qpf "o cmkpi "yi g" cu'cpf 'y j gp'kpewttgf 0'

'*d+'Fghkpgf'Dgpghkv'Rncp<'

Wphwpf gf "Rncp" yj g"Eqorcp{"j cu'c"f ghlpgf "dgpghlw'r ncp"hqt"r quw'gornq{ogpv'dgpghlw'lkp" yj g"hqto "qh'I tcwlw{0Nkcdknlw{"hqt" yj g"cdqxg"f ghlpgf "dgpghlw'r ncp"ku"r tqxkf gf "qp"yj g"dculku"qh"xcnwcylqp."cu"cv"yj g"Dcncpeg"Uj ggv'f cvg."ecttllgf "qwv'd { "cp" kpf gr gpf gpv'cewct { 0'Vj g'cewctkcn'o gyi qf 'wugf 'hqt'o gcuwtkpi ''yi g''hcdkrkv{ 'ku''yi g''Rtqlgevgf 'Wpkv'Etgf kv'o gyi qf 0'



303" Dqttqy kpi 'Equv'

"
Dattay kni 'bayyı'cta'lnyat

Dqttqy kpi "equvu"ctg"kpvgtguv."eqo o ko gpv'ej cti gu'cpf "qvj gt'equvu"kpewttgf "d{"cp"gpvgtrtkug"kp"eqppgevkqp"y kyj "Uj qtv\Vgto 1" Nqpi /Vgto "dqttqy kpi "qh'hwpf u0'Dqttqy kpi "equv"f ktgevn{"cwtkdwcdng"vq"ces wkukkqp"qt"eqpuvtwevkqp"qh's wcnkh{kpi "cuugvu"ctg" ecr kcnk gf "cu"c"r ctv'qh'vj g"equv'qh'vj g"cuugvu "wr "vq"vj g"f cvg"vj g"cuugvku'tgcf {"hqt"kuu'kpvgpf gf "wug0Cmiqvj gt"dqttqy kpi "equvu" ctg"tgeqi pk gf "kp"vj g"Uvcvgo gpv'qh'Rtqhkv'cpf "Nquu'kp"vj g"{ gct"kp"y j kej "vj g{ "ctg"kpewttgf 0"

3034" Vczgu'qp'Kpeqo g"

Vcz"gzr gpug"hqt"yj g"{gct"eqo r tkıkpi "ewttgpv"vcz"("f ghgttgf" wcz"ctg"eqpukf gtgf "kp"f gygto kpkpi "yj g"pgv"r tqhkv"hqt"yj g"{gct0} Rtqxkıkqp"ku"o cf g"hqt"ewttgpv"vcz"cpf "dcugf "qp"vcz"hcdkıkv{"eqo r wyg "kp"ceeqtf cpeg"y kyj "tgrgxcpv"vcz"hcy u"cr r necdrg"vq"yj g" Eqo r cp{0'Rtqxkıkqp"ku"o cf g"hqt"f ghgttgf "wcz"hqt"cm"vko kpi "f khlytgpeg"ctkıkpi "dgw ggp"wczcdrg"kpeqo gu"("ceeqwpvkpi" kpeqo g"cv'ewttgpvv("gpcevgf "qt"uvduvcpvkxgn("gpcevgf "vcz"tcvgu."cu"yj g"ecug"o c{"dg0F ghgttgf"vcz"cungwi*qvj gt"yj cp"kp"ukwcvkqp" qh"wpcduqtdgf "f gr tgekcvkqp"cpf "ectt{"hqty ctf" inquugu+"ctg"tgeqi pk gf "qpn("kh'vj gtg"ku"tgcuqpcdrg"egtwkpv("vj cv'yj g{"y kni'dg" tgcrk gf "cpf"ctg"tgxkgy gf "hqt"vj g"cr r tqr tkcvgpguu"qh'vj gk "tgur gevkxg"ectt{kpi "xcrwgu"cv'gcej "Dcrepeg"Uj ggv"f cvg0F ghgttgf" wcz"cungvu."kp"ukwcvkqp"qh"wpcduqtdgf "f gr tgekcvkqp"cpf "ectt{"hqty ctf "nquugu*wpf gt"vcz"hcy u"ctg"tgeqi pk gf "qpn("vq"yj g"gzvgpv" yj cv"yj gtg"ku"xktwcn"egtwkpv("uwr r qtvgf"d{"eqpxkpekpi "gxkf gpeg"yj cv"uvhhkekppv"hwxtg"wczcdrg"kpeqo g"y kni'dg"cxckrddrg" ci ckpuv'y j kej "uwej "f ghgttgf"vcz"cungwi"ecp"dg"tgeqi pk gf 0F ghgttgf "Vcz"Cungwi"cpf "F ghgttgf"Vcz"Nkcdkrkv{"ctg"dggp"qhhugv" y j gtgxgt"yj g"Eqo r cp{"j cu"c"rgi cm("gphqtegcdrg"tki j v"q"ugv"qhh'ewttgpv"vcz"cungwi"ci ckpuv"ewttgpv"vcz"hcdkrkv{"cpf"y j gtg" yj gtg"f"y g"co g"vczcvkqp"cwj qtkx{0'

3085" Gctpkpi u'r gt''Uj ctg'*GRU+"

3036" Rtkqt'Rgtkqf'Kkgo u"

 $Rtkqt "Rgtkqf" cpf "Gz vtcqtf kpct{ "kyo u"cpf" Ej cpi gu" kp" Ceeqwp vkpi "Rqnkekgu" j cxkpi "o cvgtkcn'ko r cev'qp" vj g" hkpcpekcn'chhcktu" qh' vj g" Eqo r cp{ "ctg" f kwenqugf" kp" hkpcpekcn'uvcvgo gpvuO' }$

3087" Rtqxkukqpu. 'Eqpvkpi gpv'Nkcdkrkkgu'cpf 'Eqpvkpi gpv'Cuugvu''

Rtqxkukqpu<"

 $C"r tqxkukqpu"ku"tgeqi pk gf "y j gp" i g"Eqo r cp { "j cu"c"r tgugpv'qdrki cvkqp"cu"c"tguwn'qh'r cuv'gxgpv."kh'kv'ku"r tqdcdrg" i cv'cp" qwhqy "qh'tguqwtegu"go dqf { kpi "geqpqo ke"dgpghku"y kni'dg"tgs wktgf "vq"ugwrg" i g"qdrki cvkqp"cpf "c"tgrkcdrg"guvko cvg"ecp"dg" o cf g"qh'ij g"co qwpv'qh'qdrki cvkqp0'$

Eqpvlpi gpv'Nkcdkrkv{<

Eqpvkpi gpv'Nkcdkrkkgu'ctg'f kverquef 'y j gp'y gtg'kv'c'r quukdrg'qdrki cvkqp'ctkukpi 'htqo 'r cuv'gxgpvu.'y g'gzkvrgpeg'qh'y j kej 'y kn' dg'eqphto gf 'qpn('qp'y g'qeewttgpeg'qh'qpg'qt'o qtg'wpegtvckp'hwwtg'gxgpvu'pqv'y j qm('y ky kp'y g'eqpvtqn' qh'y g'Eqo r cp{ "qt"c"r tgugpv'qdrki cvkqp"y cv'ctkugu'lhtqo "r cuv'gxgpvu"y j gtg''kv'ku''gky gt "pqv'r tqdcdrg"y cv'cp"qwhrqy "qh' tguqwtegu'y kn'idg'tgs wktgf ''q'ugwrg'qt'c'tgrkcdrg'gurko cvg''qh'y g''co qwpv'ecppqv'dg''o cf g0'

Eqpvkpi gpv'Cuugvu<

Eqpvkpi gpv'Cuugvu'ctg''pgkaj gt''tgeqi pk gf ''pqt''f kuenqugf ''kp''y g''hkpcpekcn'uvcvgo gpvu0'

"3038" Ugi o gpv'Tgrqtvkpi"

Vj g'Eqo r cp{ 'ku''qr gtcvkpi 'kp''qpn(''qpg''ugi o gpv0J gpeg''Ugi o gpv'tgr qtvkpi 'ku''pqv''cr r necdig0'



3039" Ecuj 'cpf 'Ecuj 'Gs wkxcrgpw'

 $Ecuj'' ("ecuj''gs wkxcrgpvu''eqo'r tkug''ecuj''cpf''ecuj''qp''f gr qukv''y k j'' dcpmu''cpf''eqtr qtcvkqpu0Vj g''eqo'r cp{'eqpukf gtu''cm'j k i j n("ecuj'' log wkxcrgpvu''eqo'r tkug''ecuj'' log wkxcrgpvu''eqo'r tkug'' log wkxcrgpvu''eqo'r tkug'' log wkxcrgpvu'' log wkxcrgpvu'$ vq'mpqy p'co qwpv'qh'ecuj ''vq''dg''ecuj ''gs wkxcngpw0'

Ej cpi gu'kp'Ceeqwpvkpi ''Rqnkekgu'kp''y g'Rgtkqf [[gctu'Eqxgtgf 'kp''Vj g'Tguvcygf 'Hycpekcn'Ucvgo gpvu''

Vj gtg'ku'pq''ej cpi g'kp''uki pkhecpv'ceeqwpvkpi 'r qnkekgu''cf qr vgf ''d{ ''yj g'Eqo r cp{0'

- 303; " Qyj gt "P qvgu"qp"T guvcvgf "Hkpcpekcn"uvcvgo gpvu"
- c+" Vjg"hkpcpekcn'uvcvgogpvu"kpenwfkpi"hkpcpekcn'kphqtocvkqp"jcxg"dggp"rtgrctgf"chvgt"ocnkpi"uvej"tgitqwrkpiu"cpf" cflwuxogpvu."eqpukfgtgf"crrtqrtkcvg"vq"eqorn("yksj"vjg"ucog0"Cu"tguwnv"qh"vjgug"tgitqwrkpiu"cpf"cflwuxogpvu."vjg" co qwpv"tgrqtvgf "kp"yj g"hkpcpekcn'uvcvgo gpwulkphqto cvkqp"o c{ "pqv"pgeguuctkn("dg"uco g"cu"yj qug"crrgctkpi "kp"yj g" tgurgevkxg"cwfkxgf"hkpcpekcn'uvcvgogpwi'hqt"vjg'tgngxcpv'{gctu0'
- d+" Eqpvkpi gpv'rkcdkrkkgu"cpf "eqo o kvo gpvu"*xq"vj g"gzvgpv'pqv'r tqxkf gf "hqt+"/"C"f kuenquwtg"hqt"c"eqpvkpi gpv'rkcdkrkx{ "ku" cniq"o cf g"y j gp"yj gtg"ku"c"r quuktirg"qdrki cvkqp"yj cv'o c{."tgs wktg"cp"qwbrqy "qh'yj g"Eqo r cp{)u'tguqwtegu0"
- e+" Hki wtgu'j cxg'dggp'tgcttcpi gf 'cpf 'tgi tqwr gf 'y j gtgxgt'r tcevlecdrg'cpf 'eqpulsf gtgf 'pgeguuct {0'
- f +" Vj g'o cpci go gpv'j cu'eqphto gf 'vj cv'cf gs wcvg'r tqxkukqpu'j cxg'dggp'o cf g'hqt'cm'vj g'hpqy p'cpf 'f gvgto kpgf 'hkcdkrkkgu'' cpf 'vj g'uco g'ku'pqv'kp''gzeguu'qh'vj g'co qwpvu'tgcuqpcdn('tgs wktgf 'vq'dg'r tqxkf gf 'hqt0'
- g+" Vj g"dcrcpegu"qh"vtcf g"r c{cdrgu."vtcf g"tgegkxcdrgu."rqcpu"cpf "cf xcpegu"ctg"vpugevtgf "cpf "eqpukf gtgf "cu"i qqf "ctg" uwdlgev'vq"eqphto cvkqpu"qh'tgurgevkxg"rctvkgu"eqpegtpgf0"
- h+" Tgenk evkqpu-Kp"yi g"qr kpkqp"qh"yi g"Dqetf "epf "vq"yi g"dguv"qh"ku"npqy ngf i g"epf "dgnkgh "yi g"xenwg"qp"tgenk evkqp"qh" ewttgpv'cuuguu'cpf ''nqcpu'cpf ''cf xcpegu'ctg''crrtqzko cvgn(''qh'vj g''uco g''xcnwg''cu''uvcvgf ()'
- i +" EqpvtcewcnihcdkrkkgukCmiqvj gt 'eqpvtcewcnihcdkrkkgu'eqppgevgf 'y kij 'dwukpguu'qr gtcvkqpu'qh'vj g'Eqo r cp{'j cxg'dggp'' crrtqrtkcvgn("rtqxkf gf "hqt0"
- j +" Co qwpwlbp'y g'tguvcygf 'twcpf crqpg'hlpcpelcritwcygo gpwl<Co qwpwlbp'y g'tguvcygf 'twcpf crqpg'hlpcpelcritwcygo gpwl'ctg'' tqwpfgf"qhh'\q"pgctguv"Ncmju0Hkiwtgu"kp"dtcengwikpfkecvg"pgicvkxg"xcnwgu"

Fkuewukap'ap'Tguww'ah'Qrgtcklap''

Vjg"hqmqykpi"f kuewuukqp"qp"tguwnu"qh"qrgtcvkqpu"ujqwrf"dg"tgcf"kp"eqplwpevkqp"ykj"yjg"Cwfkgf"HkpcpekcriTguwnu"qh"qwt" Eqo r cp { "hqt" y g"r gt kqf "gpf gf "Ugr vgo dgt "52.4245" cpf " { gct "gpf gf "qp "O ctej . "53" 4245. "4244" cpf "42430"

Tguwwi'qh'Qwt 'Uvcpf cnqpg'Qrgtcvkqpu''

Vj g"hqmy kpi "vcdng"ugwi'hqtyj "ugngev'hlpcpekcn"f cvc"htqo "qwt"hlpcpekcn"uvcvgo gpwi'cu"tguvcvgf "qh'i' tqhkv'cpf "nquu'hqt"yj g"r gt kqf" gpf gf "Ugr vgo dgt"52.4245"cpf "hpcpekcn" (gctu"gpf gf "qp"O ctej "53."4244"cpf "4243" yj g"eqo r qpgpvu"qh" y j kej "ctg"cnuq" gzr tguugf "cu"c"r gtegpvci g"qh"\qvcn"tgxgpvvg"hqt"uwej "r gtlqf u<"

Rc t vlewret u''	52/2;/ 4245''	' 'þh'iqwn' kpeqo g''	53/25/ 4245''	' 'þh'iqwn' kpeqo g''	53/ 25/ 4244''	' 'qh'' wqwcn'' kpeqo g''	53/ 25/ 424 3"	' 'qh'' vqvcd' kpeq o g''
Tgxgpwg'htqo ''Qr gtcwqpu''	4540,8"	322@2' "	57: 0, 6"	322@2' "	35; 0 63"	32202 2' "	/"	/"
Qyj gt'lpeqo g"		2@2' "	/"	2@2' "	/"	2022' "	/"	/"
Vqw:rlTgxgpwg'*C+''	4540,8"	322@2' ''	57: 0, 6"	322@2' ''	35; 0 63"	322 @ 2' ''	/"	/''
Gzrgpugu≺'								
Equv'qh'O cvgtkcn'Eqpuwo gf "	3830,3"	8; 072' "	458079"	870,3' "	3250 79"	9604; '"	/"	/"



Gorm{gg'dgpghku'gzrgpug''	7075"	405:' "	44039"	8Ø:' "	3205 8"	9065' "	/"	/"
Qyj gt "gzr gpugu"	350;"	70 8' "	3: 095"	7044' "	5029"	4042' "	2036"	/"
VqvcdGzrgpugu'*D+''	3:3056"	990 6' ''	499668''	99652' ''	3390 22"	:50,4	2086''	/''
Get plpi u'Dghqt g'Kpvgt guv.''	73084''	44088' ''	:366:"	44092' ''	4406	<i>380</i> 2 :	*203	/''
Vczgu.'Fgrtgekcykqp'(''					3"	, ,,	6+''	
Co qt vk cvkqp*E?C/D+''								
Hlpcpeg'equvu'\F+"	2025"	2@3' "	2076"	2037' "	2023"	2022' "	/"	/"
Fgrtgekcvkqp"cpf"coqtvk(cvkqp" gzrgpugu'*G+"	808; "	40 9' "	9078"	403' "	50, 6"	40 4' "	/"	/"
Rt qhk'dghqt g'gzegr vkqpcn'	660, 2"	3; 049' ''	95059''	42066' ''	3:06	35047	*203	/''
ksgo u'gzvtcqtf kpct { 'ksgo u' cpf 'vcz'*H? E/F/G+''		,			9''	, ,,	6+''	
Gzegr wapcakigo u''		2@2' ''	/''	2@2' ''	/''	2@2' ''	/''	/''
Rt qlls/dghqt g'\cz'*H? E/F/G+''	660, 2"	3; 049' ''	95059''	42666' ''	3: 06 9''	35047	*208 6+''	/''
Vcz'Gzrgpugu''		2022' "		2022' "		2022' "		/"
/'Ewttgpv'Vcz"	330 9"	702; ' "	3; 03"	7054' "	60 6"	5069' "	/"	/"
/"F ghgttgf "Vcz"	*2042+"	*202: +' "	*2025+"	*2023+' "	*202 6+"	*2025+	/"	/"
Vcz'Gzrgpug'Hqt'Vjg'[gct'' *I+''	33089"	7@3' ''	3; 12: "	7053' ''	60 2"	5066	/''	/"
Rt qHs/chygt 'vcz'*J?H/I+''	55044''	36048' ''	76052''	37055' ''	3508 8"	;02	*208 6+''	/''

Qxgtxlgy 'qh'Tgxgpwg'cpf 'gzrgpf kwtg''

Tgxgpwg'cpf 'Gzrgpf kwtg''

Vqvcn!*Tgxgpwg*<**Q**wt"\qvcn'tgxgpwg"eqortkugu"qh'tgxgpwg"htqo"qrgtc√lqpu0'

Tgxgpwg'htqo"qrgtcvkqpu<Qwt"tgxgpwg'htqo"qrgtcvkqpu'eqortkugu''qh''Ucrg''qh''Rtqfwev0'''

Gzrgpugu<"Qwt"gzrgpugu"eqortkug"qh"Equv"qh"Qrgtcvkqp."Gornq{gg"Dgpghkv"Gzrgpugu."Hkpcpeg"Equv."Fgrtgekcvkqp"cpf"Coqtvkucvkqp"Gzrgpugu"cpf "Qvjgt"Gzrgpugu0"

Gornq{gg'Dgpghk/Gzrgpugu<'Qwt'gornq{gg'dgpghk/gzrgpug'eqpukuw'qh'Ucnctkgu."Ycigu'('Dqpwu.'Fktgevqt)u'Tgowpgtcvkqp."
Mg{ocp"Kpuwtcpeg."Eqpvtkdwkqp"vq"GUK"Eqpvtkdwkqp"vq"GRH"Itcwkx{"Gzrgpugu"Ewttgpv'[gct"cpf"Gornq{gg"Ygrhctg"GzrgpuguU'

##pcpeg"Equnx"Qwt"hkpcpeg"equnu"eqo rtkug"qh"Dcpm"Ej cti gu."Kpvgtguv"qp"Nqcp"cpf "Nqcp"Rtqeguu'Ej cti gu0"

F grt gekcvkqp"cpf "co qt vkucvkqp"gzrgpugu<"Vcpi kdng"cuugvu"ctg"f grt gekcvgf "qxgt"r gt kqf u"eqt t gur qpf kpi "vq"vj gkt "gurko cvgf "wughwn'hkxgu0F grt gekcvkqp"kpenwf gu'f grt gekcvkqp"ej cti gf "qp"vcpi kdng"cuugvu0'

Qvj gt" gzr gpugu<" Qvj gt" gzr gpugu" kpenvf gu" Cf xgtvkugo gpv' Gzr gpugu." Cwf kqtøu" Tgo wpgtcvkqp." Ecttkci g" Qwwy ctf." Rtgrko kpct { 'Gzr gpugu'Y tkwgp'qhh 'RtqhguukqpcriVcz. 'Qhhkeg'Gzr gpugu. "Tqwpf 'qhh 'Vtcpur qtvcvkqp'Ej cti gu. "Kpvgtguv'cpf 'Ncvg" Hggu. "Kpuwtcpeg'Gzr gpugu." Ngi cri'cpf "RtqhguukqpcriHggu. 'Rtkpvkpi "("Ucvkqpgt { .'Tcvgu'cpf "Vczgu. 'Tgr cktu'cpf 'O ckpvgpcpeg." Ceeqwpvkpi "Ej cti gu. "Vgrgr j qpg'Gzr gpugu." Vtcxgrnpi "cpf "Eqpxg { cpeg'Gzr gpugu"cpf "Qvj gt'I gpgtcriGzr gpugu"c" "

Gzegr wqpcn'Kgo u<'Vj gtg''ctg''pq''gzegr wqpcn'kgo u0'''

Rt qxkılqp 'lqt 'Vcz<Kpeqo g'\czgu'ctg'ceeqwp\spf 'lqt 'lp'ceeqtf cpeg'y kıj 'Ceeqwp\spi 'Uccpf ctf 'o''44'qp'ōCeeqwp\spi 'lqt'Vczgu' qp''Kpeqo gö'\overline{c}CU/44ö+."r tguetklgf '\wpf gt'\yj g'Eqo r cpkgu'\overline{c}Ceeqwp\spi 'Uccpf ctf u+'Twgu."42280Qwt'Eqo r cp{"r tqxkf gu'lqt" ewttgpv\vcz."cu'y gm'cu'f ghgttgf '\vcz."cu'cr r nlecdng0''

 $Rtqxkukqp'hqt'ewttgpv'czgu'ku'o\ cf\ g''cv'yj\ g''ewttgpv'cz''tcvgu''chngt''cmkpi\ ''kpvq''eqpukf\ gtcvkqp''yj\ g''dgpghku''cxckrcdng''vq''qwt''$ $Eqo\ r\ cp\{\ ''vpf\ gt''y\ g''r\ tqxkukqpu''qh''yj\ g''KOVOCev0''$

-



F ghgttgf "vcz "ctkugu'htqo "vj g"vko kpi "f khgtgpegu'dgwy ggp"dqqmir tqhku"cpf "vczcdng'r tqhku"vj cv'qtki kpcvg'kp"qpg"r gtkqf "cpf "ctg" ecr cdrg'qh'tgxgtucrilp'qpg'qt'o qtg'iwdugs wgpv'r gtlqf u'cpf 'lu'o gcuwtgf 'wulpi ''y g'\cz'tcvgu'cpf 'lcy u'cr r rlecdrg'cu'qh'y g'f cvg'' qh'yj g"hlpcpekch'urcygo gpw0'Qwt"Eqorcp{"rtqxkfgu"hqt"fghgttgf"vcz"cuugv'I'nkcdkhx{"qp"uwej "vko kpi "fkhhgtgpegu'uwdlgev'vq" r twf gpv'eqpulf gtc\lqpu'lp'tgur gev'qh'f ghgttgf '\cz'cuugw0'

FILE WULKOP 'QH'RGT KQF 'GP F GF 'UGRVGO DGT '52.'4245"

Kpeqo g''

Qwt'\qvcntgxgpwg'kı" 4540, 8'Ncnj 'hqt'\j g'r gtkqf 'gpf gf 'Ugr vgo dgt '52.'4245'\y j kej "eqo r tkugu'qh'T gxgpwg'htqo 'Qr gtcvkqpu0'

Tgxgpwg'htqo 'qrgtcwqpu''

Qwt'tgxgpwg'htqo "qr gtcvkqpu'ku" 4540 8"Ncnj u'hqt'vj g'r gtkqf "gpf gf "Ugr vgo dgt"52."42450"

Qyj gt 'Kpeqo g''

Vj gtg'ku'pq'Qyj gt'Kpeqo g'hqt''yj g'r gtkqf "gpf gf "Ugr vgo dgt"52."42450'

Gz r gp ugu''

52.'4245'f wg'\q'\y g'hce\qtu'f guetkdgf 'dgmy $\ensuremath{\checkmark\!/}\ ''$

Equi'qh'O c vgt kc nEqp uwo gf ''

 $Qwt"Equw'qh"O\ cvgtkcn"Eqpuwo\ gf"ku"\ "3830,3"Ncmj\ u"hqt"vj\ g"r\ gtkqf"gpf\ gf"Ugr\ vgo\ dgt"52."4245"eqo\ r\ tkukpi\ "qh"Rwtej\ cug"qh"light" (2.3830,3"Ncmj\ u"hqt"vj\ g"r\ gtkqf"gpf\ gf"Ugr\ vgo\ dgt"52."4245"eqo\ r\ tkukpi\ "qh"Rwtej\ cug"qh"light" (2.3830,3"Ncmj\ u"hqt"vj\ g"r\ gtkqf"gpf\ gf"Ugr\ vgo\ dgt"52."4245"eqo\ r\ tkukpi\ "qh"Rwtej\ cug"qh"light" (2.3830,3"Ncmj\ u"hqt"vj\ g"r\ gtkqf"gpf\ gf"Ugr\ vgo\ dgt"52."4245"eqo\ r\ tkukpi\ "qh"Rwtej\ cug"qh"light" (2.3830,3"Ncmj\ u"hqt"vj\ g"r\ gtkqf"gpf\ gf"Ugr\ vgo\ dgt"52."4245"eqo\ r\ tkukpi\ "qh"Rwtej\ cug"qh"light" (2.3830,3"Ncmj\ u"hqt"vj\ g"r\ gtkqf"gpf\ gf"Ugr\ vgo\ dgt"52."4245"eqo\ r\ tkukpi\ "qh"Rwtej\ cug"qh"light" (2.3830,3"Ncmj\ u"hqt"vj\ g"r\ gtkqf"gpf\ gf"Ugr\ vgo\ dgt"52."4245"eqo\ r\ tkukpi\ "qh"Rwtej\ cug"qh"light" (2.3830,3"Ncmj\ u"hqt"vj\ g"r\ gtkqf"gpf\ gf"Ugr\ vgo\ dgt"52."4245"eqo\ r\ tkukpi\ "qh"Rwtej\ cug"qh"light" (2.3830,3"Ncmj\ u"hqt"vj\ g"hqt"vj\ g"hqt"vj\$ Tcy 'O cvgtkcn'('Eqpuwo cdrg'cpf 'Qvj gt 'O cpwhcewtkpi 'Gzr gpugu0'

Go rnq{gg'dgpghlsu'gzrgpugu''

 $Qwt''go\ r\ m\{gg''dgpghk''gzr\ gpugu''ctg''\ 7075''Ncmj\ u'hqt''y\ g''r\ gtkqf\ ''gpf\ gf\ ''Ugr\ vgo\ dgt'52.''4245''eqo\ r\ tkukpi\ ''qh''Ucnctkgu''cpf\ ''Y\ ci\ gu.''$ Fktgevqtu'Tgo wpgtcklqp."Eqpvtklwkqp"vq"r tqxkf gpv'cpf "qvj gt'hwpf u."Uvchh'Y grhctg"Gzr gpugu'cpf "I tcwkk{ "Gzr gpugu0"

Hkpcpeg'equau''

Qwt'hlpcpeg'equv'ku" 2025"Ncnj u'hqt''y g'r gtkqf "gpf gf "Ugr vgo dgt "52."4245"eqo r tkukpi "qh'Dcpm'Ej cti gu0"

Fgrtgekcvkqp'cpf'coqtvk(cvkqp'gzrgpug''

Qyj gt 'gz r gp ugu''

 $Qwt" qvj \ gt" gzr \ gpugu" \ kpewttgf" f \ wt \ kpi \ "vj \ g"r \ gt \ kqf \ "gpf \ gf \ "Ugr \ wgo \ dgt" 52." 4245" \ ku" \ "350 \ ; "Ncmj \ u" \ y \ j \ kej \ "eqo \ r \ t \ kugu" \ qhl' \ wy \ j \ kej \ "eqo \ r \ t \ kugu" \ qh' \ qh'$ Cfxgtvkugo gpv'Gzrgpugu. 'Cwfkqtøu'Tgowpgtcvkqp. 'Ecttkcig'Qwyctf. 'Rtqhguukqpcn'Vcz. 'Qhhkeg'Gzrgpugu. 'Kfvgtguv'cpf' Ncvg'' Hggu. "Kpuwtcpeg" Gzr gpugu. "Ngi cn' cpf "Rtqhguukqpcn' Hggu. "Rtkpvkpi" ("Uvcvkqpgt { . "Tgr cktu" cpf "O ckpvgpcpeg." Ceeqwpvkpi" Ej cti gu. "Vtcxgmlpi "cpf "Eqpxg{cpeg'Gzr gpugu'cpf "Qyj gt'I gpgtcn'Gzr gpugu'0'

Gz egr vkqp c nl Kvgo u''

Vj gtg"ctg"pq"gzegr wqpcn"kgo u"hqt"vj g"r gtkqf "gpf gf "Ugr vgo dgt"52."42450"

Rt qhw'dghqt g'\cz''

Qwt 'r tqhkv'dghqtg'\cz 'uvcpf u'cv' '660, 2 'Ncnj u'hqt 'vj g'r gtlqf "gpf gf "Ugr vgo dgt '52. '42450'

Vcz 'gzr gpugu''

Qwt"vcz"gzr gpugu"hqt"vj g"r gtkqf "gpf gf "Ugr vgo dgt"52."4245"co qwpvgf "vq" "33089"Ncmj u'y j kej "kpenwf gu'ewttgpv'vcz"cpf " f ghgttgf '\cz'gzr gpugu0'



Rt qHv'Chygt 'Vcz''

Qwt'r tqhkv'chygt'vcz'vvcpf u'cv' '55044'Ncmj u'hqt'vj g'r gtkqf 'gpf gf 'Ugr vgo dgt'52.'42450'

EQO RCTRUQP'QH'HI '4244/45'Y KVJ 'HI 4243/44"

Kpeqo g''

Qwt"\qvcn"tgxgpwg"lpetgcugf "d{" "43; (75"Ncnj u"qt"379069" "\q" 57: () 6"Ncnj "lqt"\j g"lhpcpelcn"{gct"4244/45"ltqo " 35; (63" Ncnj 'hqt''y g'hlpcpelcn''{ gct ''4243/44 ''f wg''vq''y g'hcevqtu''f guetldgf ''dgnqy <''

Tgxgpwg'htqo 'qrgtcwqpu''

Qwt'tgxgpwg'htqo 'qr gtcvkqpu'ku'' 57: Q 6'Ncnj u'hqt'tj g'hkpcpekcn''(gct'4244/45'cu'eqo r ctgf 'tq'' 35; (63'Ncnj u'hqt'tj g'hkpcpekcn'' {gct"4243/44"tgrtgugpvkpi "cp"kpenkpg"qh"379069' "qp"ceeqwpv"qh"kpetgcug"kp"gzrcpukqp"qh"dwukpguu0"

Qyj gt 'Kpeqo g''

Vj gtg'y gtg'pq'Qyj gt''Kpeqo g'kp'Hkpcpekcn[gct''4244/45''cpf''4243/440'

Gz r gp ugu''

Qwt"\qvcn'gzr gpugu"gzenwf kpi "hkpcpeg"equv."f gr t gekc\kqp"cpf "\vz"gzr gpugu"ku" 499068"Ncnj u"hqt"\j g"hkpcpekcn'{ gct "4244/45" cu"eqo r ctgf "vq" 339022"Ncnj u"hqt"yj g"hhpcpekcn"{gct"4243/44"tgrtgugpvkpi "cp"kpetgcug"qh"359086' "f wg"vq"yj g"hcevqtu" f guetkdgf "dgnqy "∜"

Equv'qh'O c vgt kc nEqp uwo gf ''

Qwt"Vqvcn'Equv'qh'O cvgtkcn'Eqpuwo gf 'ku" 458079"Ncnj u'hqt"vj g"hkpcpekcn'{gct"4244/45"cu'eqo r ctgf "vq" 325079"Ncnj u'hqt" $\label{eq:condition} yi~g''hpcpekcn'' \{gct''4243/44''tgr~tgugp'kpi~'cp''kpetgcug''qh''34:~063'~''f~wg''q''kpetgcug''kp''qwt''uecng''qh''qr~gtc'kqp0'''$

Go rnq{gg'dgpghhnu'gzrgpugu''

hkpcpelcn'{ gct'4243/44'tgr tgugpvkpi 'cp'kpetgcug'qh'3350; 8' "f wg'\q'kpetgcug'kp'Ucntkgu'cpf "Y ci gu".'F ktgevqtu'Tgo wpgtcvkqp." Eqpvtkdwkqp"\q"Rtqxkfgpv\"Hwpf"\cpf \"GUKE.\"I tcwkv\{ \"Gzrgpugu0\"\"

Hpcpeg'equu''

Qwt "hlpcpeg"equv'ku" 2076" Ncnj u 'hqt "yj g"hlpcpekcn" { gct "4244/45" cu 'eqo r ctgf "vq" 2023" Ncnj u 'hqt "yj g"hlpcpekcn" { gct "4243/44" tgrtgugpvkpi "cp"kpetgcug"kp"Dcpm'Ej cti gu0"

Fgrtgekcvkqp'cpf'co qtvk/cvkqp'gzrgpug''

Qwt"f gr t geleckqp"kpet geugf "d{"; 4066' "vq" 9078"Nenj u"lqt"vj g"hkpcpeken"{gct "4244/45"htqo " 50,6"Nenj u"lqt"vj g"hkpcpeken" { gct '4243/44'f wg'\q'Rwtej cug'cpf '\ko g'r tqr qt \kqp'qh'cuugvu0''

Qvj gt 'gz r gp ugu''

Qwt 'qvj gt 'gzr gpugu'lpet gcugf 'd{ '72; 07; ' ''vq'' 3: 095 'Ncnj u'lqt 'vj g'lhpcpelcn' (gct '4244/45 'ltqo '' 5029 'Ncnj u'lqt 'vj g'lhpcpelcn' {gct"4243/44."y j kej "ku'7044' "cpf"4042' "qh"\j g"\qvcn"tgxgpwg"qh"tgur gevkxg"{gctu0Vj g"kpetgcug"y cu'o ckpn("f wg"\q"kpetgcug" $lp "Cf xgt wlugo gpv" Gzr gpug. "Qhhleg "Gzr gpugu." Vtcpur qt wwlqp "Ej cti gu. "Ngi cn" ("Rtqhguulqpcn" Hggu. "Rt kp wlpi " ("Uwwlqpgt { " Uwwlqpgt { " Uww$ Gzr gpugu. "Tgr cktu"cpf "O ckpvgpcpeg. "Ceeqwpvkpi "Ej cti gu. "Vtcxgmkpi "("Eqpxg{cpeg"Gzr gpugu. "Qvj gt"I gpgtcn'Gzr gpugu" y j lej 'y cu'r ct kcm('ugv'qhh'y kj 'F get gcug'kp 'Gzr gpugu'Y tkwgp 'qhh 'Rtqhguukqpcn'Vcz. 'Kpuwt cpeg'Gzr gpugu. 'T cvgu'('Vcz gu'0'

Rt qhw'dghqt g'icz''

Qwt"r tqhkv"dghqtg"vcz"kpetgcugf "d{"4; 9653' "vq" 95659"Ncmj u"hqt"vj g"hkpcpekcn"{gct"4244/45"htqo " 3: 669"Ncmj u"hqt"vj g" hlpcpekcn'{ gct '4243/440'Vj g'hpetgcug'y cu'o ckpn('f wg'\q'\j g'hcevqtu'f guetkdgf 'cdqxg0'

,,



Vcz 'gzrgpugu''

Qwt''vcz "gzr gpugu'hqt''y g'hlpcpelcn'{ gct '4244/45 "co qwpygf "vq" 3; (2: "Ncnj u''cu''ci clpuv''vcz "gzr gpugu''qh" 60 2 "Ncnj u'hqt''y g" hpcpekcn'{ gct'4243/440Vj g'pgvkpetgcug'qh' 36049'kn'qp'ceeqwpv'qh'hpetgcug'hp'Ewttgpv'vcz'cpf'F ghgttgf''Vcz0'

Rt qllw'Chygt 'Vcz''

Qwt'r tqhkv'chygt'vcz kpetgcugf 'd{ '4; 9056' "vq" 76052'Ncmj u'hqt'vj g'hkpcpekcn'{ gct'4244/45'htqo " 35088'Ncmj u'hqt'vj g'hkpcpekcn' { gct '4243/44. 't ghrge lipi 'c'pgv'kpet gcug'qh' 62085 'Ncnj u'f wg'lq'chqtgo gpvlqpgf 't gcuqpu0'

EQO RCTK/QP'QHH['4243/44'Y KVJ 'H['4242/43''

Kpeqo g''

Vj gtg"lpetgcug"qh" 35; (63"Ncnj u"lp"Vqvcn"lpeqo g"lp"hlpcpelcn"{gct"4243/44"cu"eqo r ctgf "vq"pq"lpeqo g"lp"hlpcpelcn"{gct" 4242/43 'f wg'\q'\yi g'hcevqtu'f guetkdgf 'dgmy <'

Tgxgpwg'htqo 'qrgtcvkqpu''

hkpcpekcn'{ gct '4243/44'f wg'\q'gzr cpukqp'qh'dwukpguu0''

Qyj gt 'Kpeqo g''

Vj gtg'y gtg'pq'Qvj gt''Kpeqo g''kp''dqvj ''vj g''{ gctu0'

Gz r gp ugu''

Qwt"vqvcn"gzr gpugu"gzenwf kpi "hkpcpeg"equv."f grtgekcvkqp"cpf "vcz"gzr gpugu"ku" 339022"Ncnj u"hqt"vj g"hkpcpekcn"{ gct "4243/44" cu"eqo r ctgf "vq" 2086"Ncmj u"hqt"vj g"hkpcpekcn"{gct"4242/43"tgr tgugpvkpi "cp"kpetgcug"qh": 7; 53074' "f wg"vq"vj g"hcevqtu" f guetledgf "dgrqy \triangleleft "

Equv'qh'O c vgt kc nEqp uwo gf ''

Qwt"Equv'qhlo cvgt kcrleqpuwo gf 'ku" 325079"Ncnj u"hqt"vj g"hlpcpekcn"{gct"4243/44"cu"eqo r ctgf "vq"pkn'hqt"vj g"hlpcpekcn'{gct" 4242/430'Vj g'pgv'kpetgcug'qh" 325079'Ncnj u'y cu'f wg''vq''Kpetgcug'kp''qr gtcvkqpu0'

Go rnq{gg'dgpghlsu'gzrgpugu''

Qwt"go r m{gg"dgpghlv"gzr gpugu"lu" 32658"Ncnj u"hqt"yj g"hlpcpelcn"{gct"4243/44"cu"eqo r ctgf "vq" 2"Ncnj u"hqt"yj g"hlpcpelcn" $\{gct"4242/43"fwg"vq"Kpetgcug"Ucretkgu"(\ "y\ ci\ gu."Eqpvtkdwkqp"vq"rtqxkfgpv"cpf"GUKE."I\ tcwkv{\ "Gzr\ gpugu."Fktgevqtu"}$ Tgo wpgtcwqp0"

Hpcpeg'equu''

 $Qwt "Hlpcpeg" Equv'lqt' 'hlpcpelcri' {gct'' 4243/44'' ku'' \ 2023'' Ncmj u''cpf'' 4242/43'' ku''pkr0''' 2023'' Ncmj u''cpf'' 4242/43'' ku''pkr0''' 2023'' Ncmj u''cpf'' 2023'' Ncmj u''cpf'' 2023'' Ncmj u''cpf'' 2023'' Ncmj u''cpf'' 2023'' Ncmj u''cpf''' 2023'' Ncmj u''cpf'' 2023'' Ncmj u''cpf''' 2023'' Ncmj u''cpf'' 2023'' Ncmj u'''cpf'' 2023'' Ncmj u''' 2023'' Ncmj u''''$

Fgrtgekcvkqp'cpf'co qtvk/cvkqp'gzrgpug''

 $Qwt"fgrtgekcvkqp"kpetgcugf"vq" 50,6"Ncmj u''hqt"vj g''hkpcpekcn'' \{gct"4243/44"htqo "pkn''hqt"vj g''hkpcpekcn'' \{gct"4242/43"fwg"vq'' | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000$ Kpetgcug'lkp'Cuugui'qh' \dot{y} g'eqo r cp $\{0$ "

Qvj gt 'gz r gp ugu''

 $Qwt"qyj~gt"gzr~gpugu"kpet~gcugf~"d\{"437:0:'~~"vq"~5029"Ncmj~u"hqt"yj~g"hkpcpekcn"\{gct"4243/44"htqo~"~2086"Ncmj~u"hqt"yj~g"hkpcpekcn"\}$ $\{ gct"4242/430" \ Vj \ g" \ kpetgcug" \ y \ cu"o \ ckpn \{ "f \ wg" \ vq" \ kpetgcug" \ kp" \ Cf \ xgt \ kugo \ gpv' \ Gzr \ gpug." \ C \ wf \ kqtu" \ Tgo \ wpgtc \ kqp." \ Qhhleg" \ Gzr \ gpugu. "Rt \ qhguul \ qpcn' \ Hggu. "Rt \ pvkpi" ("Ucvkqpgt \{ "Gzr \ gpugu." \ Tcvgu" \ cp" \ Cp$ Vczgu."Tgr cktu"cpf "O ckpvgpcpeg."Ceeqwpvkpi "Ej cti gu."Vgrgr j qpg"Gzr gpugu."Vtcxgrkpi "("Eqpxg{cpeg"Gzr gpugu."Qvj gt" I gpgtcn'Gzr gpugu0'



Gz egr wypc n Kygo u''

Vj gtg"ctg"pq"gzegr vkqpcnlkgo "qh"kp"yj g"hkpcpelcn"{ gct"4242/43"("4243/440"

Rt qhw'dghqt g'wz''

Qwt"r tqhlw'dghqtg"vcz "lipetgeugf "d{ "3589: Q 8' "vq" 3: 069"Ncm; u'hqt"yj g"lilipepelicri"{gct"4243/44"htqo " *2086+"Ncm; u'hqt"yj g" hlpcpelcn'{ gct '4242/430'Vj g'lpet gcug'y cu'o clon('f wg'vq'vj g'lcevqtu'f guet ldgf 'cdqxg0'

Vcz 'gzr gpugu''

Qwt "vcz "gzr gpugu"hqt "vj g"hlpcpelcri"{ gct "4243/44" co qwpvgf "vq" 60 2"Ncnj u"cu"ci clpuv"vcz "gzr gpugu"qh" 2"Ncnj u"hqt "vj g" hpcpelcn" {gct"4242/430Vjg" pgvlpetgcug" ku"qp" ceeqwpv'qh" hpetgcug" lp" Ewttgpv' cz" cpf "Fghgttgf" Vcz0"

Rt qhw'Chygt 'Vcz''

Qwt"r tqhky"chygt "vcz "kpet gcugf "d{ "3236903' "vq" 35088"Ncni u"hqt"vj g"hkpcpelcni { gct "4243/44"htqo " *2064;"Ncni u"hqt"vj g" hlpcpelcri'{ gct '4242/43 'f wg'\q'chqtgo gp\lqpgf 'tgcuqpu0'

Ej cpi gu'kp'Ecuj 'Hrqy u''

Vj g"vcdrg"dgrqy "uwo o ctkgu"qwt"ecuj "hrqy u"htqo "qwt"Tguvcygf "Hkpcpekcrl"Uvcvgo gpvu"hqt"vj g"r gtkqf "gpf gf "Ugr vgo dgt"52." 4245"cpf 'hkpcpekcn'{ gctu'gpf gf 'O ctej "53."4245."4244"cpf "4243<"

* 'kp'Ncmj +''

Ret vlewret u''	Hqt'\j g'' { gct '' gpf gf '' Ugr vgo dgt '' 52.'' 4245''	Hqt'\j g'' { gct '' gpf gf '' O ctej '53.'' 4245''	Hqt'\j g'' { gct 'gpf gf '' O ctej '53.'' 4244''	Hqt'\j g'' { gct '' gpf gf '' O ctej '53.'' 4243''
Pgv" ecuj " *wugf " kp+1" i gpgtcvgf " htqo " qrgtcvkpi " Cevkxkvkgu"	42096"	840 3"	73078"	/"
Pgv"ecuj "*wugf"kp+1"igpgtcvgf"htqo "kpxguvkpi" Cevkxkvkgu"	*68067+"	*5055+"	*770, 9+"	/"
Pgv" ecuj " *wugf " kp+1" i gpgtcvgf " htqo " hkpcpekpi " Cevkxkvkgu"	460, 9"	*2096+"	; 0 ; "	/"
Pgv'lpetgcug1" fgetgcug+'lp''ecuj 'cpf''ecuj 'Gswkxcrgpu''	*2095+"	7: 95"	706: "	/"
Ecuj "cpf "Ecuj "Gs wkxcngpvu"cv" yj g"dgi kppkpi "qh" yj g" r gtkqf "	880 9"	: 036"	4087"	4087"
Ecuj "cpf "Ecuj "Gs wkxcrgpvu"cv"yj g"gpf "qh"yj g"Rgtkqf"	88Œ6"	880 9"	: (36"	4087"

Qrgtcvlpi 'Cevlxkvlgu''

Rgt lqf 'gpf gf 'Ugr vgo dgt '52.'4245"

Qwt "pgv'ecuj "i gpgtcvgf "kp"qrgtcvkpi "cevkxkkgu'y cu" 42@6"Ncnj u'hqt"vj g'r gtkqf "gpf gf "Ugr ygo dgt "52."42450Qwt"qrgtcvkpi " rtqhkx"dghqtg"y qtmkpi "ecrkxcn'ej cpi gu"y cu" 73085"Ncmj u"hqt"vj g"r gtkqf "gpf gf "Ugr vgo dgt"52."4245"y j kej "y cu"r tko ctkn(" cf lwwgf "ci ckpuv"kpetgcug"kp"Kfxgpvqtkgu" 47044. "f getgcug"kp"vtcf g"tgegkxcdrgu"d{" 3089"Ncmi u. "f getgcug"kp"Uj qtv"Vgto " Nqcpu" ("Cfxcpegu" 606; "Ncnj u. "kpetgcug"kp"Qvj gt"Ewttgpv"Cuugw"d { " 38053"Ncnj u. "kpetgcug"kp"Vtcf g"r c { cdng" 330,5" Ncnj u. "f getgcug"kp"qvj gt "ewttgpv"rkcdkrkkgu"d { " 3028"Ncnj u"y j kej "y cu"hwtyj gt "f getgcugf "d { "r c { o gpv"qh"Kbeqo g"Vcz "qh" 80, 9"Ncmj u0"

Hpcpelcn{ gct '4244/45"

Qwt"pgy"ecuj "i gpgtcvgf "hp"qrgtcvhpi "cevkxkskgu"y cu" 840 3"Ncnj u"hqt"vj g"rgthqf "gpf gf "O ctej "53."42450'Qwt"qrgtcvhpi " rtqhkw'dghqtg"y qtmkpi "ecrkxcn'ej cpi gu"y cu": 306; "Ncmj u"hqt" yj g"hkpcpekcn' {gct" 4244/45" yj kej "y cu'rtko ctkn {"cflwuwgf" ci ckpuv"kpetgcug"kp"Kpxgpvqtkgu" 302: ."kpetgcug"kp"vtcfg"tgegkxcdrgu"d{" 37026"Ncnj u."kpetgcug"kp"Ujqtv"Vgto"Nqcpu"(" Cf xcpegu" 3; 077"Ncnj u. "kpetgcug"kp"Qvj gt"Ewttgpv'Cuugwi"d{" 6082"Ncnj u. "kpetgcug"kp"Vtcf g"r c{cdrg" 6023"Ncnj u. " kpetgcug"kp"qvj gt"ewttgpv"rkcdkrkkgu"d{" 43085"Ncnj u"y j kej "y cu"hwtvj gt"f getgcugf "d{"r c{o gpv"qh"Kpeqo g"Vcz"qh" 608: " Ncmi u0"

•• ••



Hepcpelcn{ gct '4243/44"

Qwt"pgy"i gpgtcvgf "wugf "hp"qr gtcvkpi "cevkxkklgu"y cu" "73078"Ncni u"hqt"yi g"r gtkqf "gpf gf "O ctej "53."42440'Qwt"qr gtcvkpi " rtqhkx'dghqtg"y qtmkpi "ecrkxcn'ej cpi gu"y cu" 440 7"Ncnj u"hqt"yj g"hkpcpekcn'{gct"4243/44"y j kej "y cu"rtko ctkn{"cflwuwgf" ci ckpuv'kpetgcug"kp"kpxgpvqtkgu"d{" 40 7"Ncnj u. "kpetgcug"kp"vtcf g"tgegkxcdrgu"d{" 3570 9"Ncnj u. "kpetgcug"kp"Uj qtv"Vgto " Nqcpu" ("Cfxcpegu"d{" "2024"Ncnj u."kpetgcug"kp"Qyj gt"Ewttgpv"Cuugvu"d{" 408"Ncnj u."kpetgcug"kp"vtcfg"rc{cdrgu"d{" ; 9084 "Ncnj u. "kpet
gcug 'kp 'qvj gt 'ewttgpv'nkcdkrkkgu'd { " 94092 'Ncnj u
0 "

Hpcpekrl{ gct '4242/43"

Qwt "pgv'ecuj "wugf "kp "qr gtcvkpi "cevkxkskgu"y cu" 2"Ncnj u"hqt "vj g"r gtkqf "gpf gf "O ctej "53."42430Qwt "qr gtcvkpi "r tqhkv'dghqtg" y qtmkpi "ecr kıcılej cpi gu"y cu" *2028+"Ncınj u"hqt"vj g"hkpcpekıcın"{ gct "4242/43"y j kej "y cu"r tko ctkn{ "cf lwuvgf "ci ckpuv"kpetgcug" kp"qyj gt"ewt
tgpv'rlcdkrkkgu"d{ " $20\!\!28$ 'Ncmj u0"

Koxgustpi 'Cestxtstgu''

Rgt lqf 'gpf gf 'Ugr vgo dgt '52.'4245"

Qwt "pgv'ecuj "wugf 'htqo "kpxguvkpi "cevkxkdgu'y cu" *68067+"Ncnj u'hqt "vj g'r gtkqf "gpf kpi "Ugr vgo dgt "52."42450"Vj gug''y gtg"qp" ceeqwpv'qh'Rwtej cug''qh'Rtqrgtv{. 'Rrcpv'('Gs wkr o gpv'qh' 68067'Ncmj u''

Hpcpelcii{ gct '4244/45''

Qwt"pgy"ecuj "wugf 'htqo "lpxguvlpi "cevkxlxlgu"y cu" *5055+"Ncnj u"hqt" vj g"hlpcpelcn" { gct "4244/450"Vj gug"y gtg"qp"ceeqwpv"qh" Rwtej cug''qh'Rtqr gtv{.''Rrcpv'(''Gs wkr o gpv''qh'' 5055''Ncmj u''

Hpcpelcn{ gct '4243/44"

Qwt 'pgv'ecuj "wugf 'htqo 'lpxgurkpi "cevkxkrkgu'y cu" *770, 9+"Ncnj u'hqt 'y g'hkpcpelcn'{ gct "4243/440'Vj gug'y gtg'qp"ceeqwpv'qh" Rwtej cug"qh"Rtqr gtv{. 'Rrcpv"('Gs wkr o gpv"qh" 770, 9"Ncnj u0'

Hepcpelcn{ gct '4242/43''

Vj gtg'y cu'pq'pgv'ecuj 'htqo 'kpxguvkpi 'cevkxkvkgu'kp'hkpcpekcnu'kp'4242/43"

Hocpelpi 'Cevkxkdgu''

Rgt lqf 'gpf gf 'Ugr vgo dgt '52.'4245"

P gv'ecuj "wugf "kp"hkpcpekpi "cevkxkkgu"hqt"vj g"r gtkqf "gpf kpi "Ugr vgo dgt"52."4245"y cu" 460, 9"Ncnj u'y j kej "y cu"r tko ctkn(" qp"ceeqwpv'qh"Hoppeg"equv" *2025+"cpf "Koetgcug"kp"Nqpi "Vgto "Dqttqy kpi u"d { " 47022"Ncnj u"

Hepcpelcn{ gct '4244/45''

P gv'ecuj "wugf "kp"hkpcpekpi "cevkxkkgu"hqt" yj g"hkpcpekcn' { gct "O ctej "53."4245" y cu" 2096" Ncnj u"y j kej "y cu"r tko ctkn{ "qp" ceeqwpv'qh'Hlpcpeg''equv'' 2076''Ncnj u'cpf 'tgrc{o gpv'qh'Nqpi/Vgto ''Dqttqy kpi u'qh'' 2042''Ncnj u0'

Hpcpelcn{ gct '4243/44"

P gv'ecuj "wugf "kp"hkpcpekpi "cevkxkkkgu"hqt"vj g"hkpcpekcri{gct"O ctej "53."4244"y cu" ; 0 ; "Ncrij u'y j kej "y cu"qp"ceeqwpv'qh" Hopcpeg'Equv'qh' 2023'Ncmj u'cpf 'kpetgcug'kp'Nqpi 'Vgto 'Dqttqy kpi u'qh' ; 0, 2'Ncmj u0'

Hpcpekri{ gct '4242/43"

Vj gtg"y cu'pq"pgv'ecuj "wugf "lip"hlipcpekpi "cevkxkklgu"hqt"vj g"hlipcpekcri"{ gct "O ctej "53."42430"

Qvj gt 'Mg{ 'Tcvkqu''

Vj g"vcdng"dgrqy "two o ctkgu"ng{ "tc-kqu"kp"qwt "Tguvcvgf" Hkpcpekcn"Uvcvgo gpwt"nqt "vj g"r gtkqf "gpf gf "Ugr vgo dgt "52."4245"cpf" hkpcpekcn''{ gctu''gpf gf ''O ctej ''53.''4245.''4244''cpf ''4243<''



Ret vlewret u'	Hqt '\j g'{ gct '' gpf gf '' Ugr vgo dgt '52.'' 4245''	Hqt '\j g'{ gct '' gpf gf 'O ctej '' 53.'' 4245''	Hqt'\j g'{ gct'' gpf gf 'O ctej '' 53.'' 4244''	Hqt'\j g'{ gct'' gpf gf 'O ctej '' 53.'' 4243''
Hkzgf 'Cuugv'Vwtpqxgt'Tcvkq''	4088"	9073"	408: "	/"
Ewttgpv'Tcwq''	3045"	3088"	20 7"	3: 0, 6"
Fgdv'Gs wkv{ "Tcvkq"	2056"	2036"	2085"	202: "
Kpxgpvqt{"Vwtpqxgt"Tcvkq"	; 09; "	8; 0 7"	9409: "	/"

Hzgf 'Cugy'Vwt pqxgt 'Tcvkq<Vj ku'ku'f ghlpgf 'cu't gxgpwg'htqo 'qr gtcvkqpu'f kxkf gf 'd{ ''qvcnhz gf ''cuugw'dcugf ''qp 'Hpcpekcn' Ucvgo gpw'cu'Tgwcvgf 0'

Ewttgpv"Tcvkq<Vj ku'ku'fghkpgf "cu'ewttgpv'cuugvu'fkxkfgf"d{"ewttgpv'hcdkrkkgu."dcugf"qp"Hkpcpekcn"Ucvgo gpwl'cu"Tguvcvgf0"

Fgdv'Gswks{'Tevkq<'Vj ku'ku''fghkpgf"cu''vqvcn'fgdv'fkxkfgf"d{"vqvcn'ujctgjqnfgt"hwpfu0'Vqvcn'fgdv'ku''yjg''uwo"qh'nqpi/vgto" dqttqy kpi u."uj qt√vgto "dqttqy kpi u"cpf "ewttgpv"o cwtkkgu"qh"nqpi /vgto "f gdv."dcugf "qp"Hkpcpekcn"Ucvgo gpvu"cu"T guvcvgf 0"

Kpxgpvqt{"Vwt pqxgt"Tcvkq<"Vj ku"ku"f ghkpgf "cu"cxgtci g"kpxgpvqt{"f kxkf gf "d{"equv"qh"i qqf u"uqnf "dcugf "qp"Hkpcpekcn" Ucvgo gpvu'cu't guvcvgf 0'

Hpcpek: nkpf gdvgf pguu''

Cu''qp''Ugr vgo dgt''52.''4245.''vj g''vqvcn'qwuvcpf kpi ''dqttqy kpi u''qh''qwt''Eqo r cp{ ''ku'' ''560, 2''Ncnj u0'Hqt''hwt yj gt''f gwknu.''t ghgt'' vq''y g''ej cr ygt''kkngf "ö*Ukc ygo gp v'yh'Hhpc pekc nl¥of gdwgf pgua*iö''dgi kppkpi "qp''r ci g''375''qh''y ku''F tchv'Rtqur gewu0'

* kp'Ncmj +''

Rct vlewet u'	Cu'cv'Ugr vgo dgt '52.'4245''
Ngcpu'litgo "Dcpmi" ("Hipcpelcn'Kpurkswikgpu"	47@2"
Wpugewtgf "Nqcpu'litqo "f ktgevqtu"	; 0, 2"
Vqvcn'	560, 2"

Tgrcvgf 'Rctv{ 'Vtcpucevkqpu''

Tgravgf "r ctv{ "tcpucevkqpu"y kaj "qwt"r tqo qvgtu. "f ktgevqtu"cpf "vj gkt "gpvkskgu"cpf "tgravkxgu"r tko ctkn{ "tgravg"vq"r wtej cug"cpf " ucng"qh"rtqf wewi"cpf "ugtxlegul0'Hqt"hwtyj gt"kphqto cylqp."rngcug"tghgt"vq"vj g"ej cryst"vkngf "õ*Hlpcpelcn'Uw vgo gpwi'cu''* Tgunc vgf ö"qp"r ci g"359"qh"vj ku"F tchv'Rtqur gewu0"

Qlh/Dcrcpeg'Uj ggv'Kgo u''

Y g"fq"pqv"jcxg"cp{"qvjgt"qhh/dcrcpeg"ujggv"cttcpigogpvu."fgtkxcvkxg"kpuvtwogpvu"qt"qvjgt"tgrcvkqpujkru"ykj"cp{"gpvkv{" yj cv'j cxg"dggp"guvcdrkuj gf "hqt"yj g"r wtr qugu"qh"hcekrkvcvkpi "qhh/dcrcpeg"uj ggv"cttcpi go gpvu0"

Swerksedseg'Fknenquwtg'edqwv'Octmgv'Tkum'

Hpcpek: nO ct mgv'T kmu'

Octngv'tkum'ku''y g'tkum'qh'nquu'tgncvgf ''vq''cfxgtug''ej cpi gu''kp''octngv'rtkegu. ''kpenwfkpi ''kpvgtguv'tcvg'tkum'0Y g''ctg''gzrqugf''vq'' kpygtguv'tcyg'tkum'kphrcykqp"cpf"etgfkv'tkum'kp'yjg"pqtocn'eqwtug"qh'qwt"dwukpguu0"

Kpvgt guv'T cvg'Tkm'

Qwt'hlpcpelcritguwnu'ctg'uwdlgev'vq'ej cpi gu'lp'lpvgtguv'tcvgu. "y j lej "o c{"chhgev'qwt"f gdv'ugtxleg"qdrki cvkqpu'cpf "qwt "ceeguu" vq'hwpfu0'

Głłgev'qli'Kphrcvkqp''

Y g"ctg"chhgevgf "d{ "hphrcvkqp"cu'kv"j cu'cp"ko r cev'qp"vj g"tcy "o cvgtkcn'equv."y ci gu. "gve01fp"rkpg"y kyj "ej cpi kpi "kphrcvkqp"tcvgu." y g'tgy qtm'qwt''o cti kpu''uq''cu''vq''cduqtd''y g''kphrcvkqpct{ 'ko r cev0'



Etgfk/Tkm'

" "

Y = "ctg" =

Tgugt xcvkqpu.'S werkheevkqpu'epf 'Cf xgt ug'Tgo et mu'

"

Gzegr v'cu'f kuenqugf 'kp''ej cr vgt 'kkurgf 'ö*Hkp c p ekc nUvc vgo gp vu'c'u'T guvc vgf* ö'dgi kppkpi 'qp''r ci g'359'qh'\j ku'F tchv'Rtqur gewu." yj gtg'j cxg''dggp''pq''tgugtxcvkqpu. 's wcnkhkecvkqpu''cpf ''cf x gtug''tgo ctmu0'

 $F\ gvcku''qh'F\ ghcwn''kh'cp\{.''kpenwf\ kpi\ ''yj\ g'Co\ qwpv''kpxqnxgf\ .''F\ wtcvkqp''qh'F\ ghcwn''cpf\ ''Rt\ gugpv''Ucwu.''kp''T\ gr\ c\{o\ gpv''qh''F\ gr\ qukwu''qt\ ''T\ gr\ c\{o\ gpv''qh''Nqcpu''htqo\ ''cpf'''Dcpnt'qt''\ Hlpcpekcn''kpukwwkqp0'$

Gzegr v'cu''f kuenqugf 'kp''ej cr vgt 'kwrgf 'ö*HhpcpekcnUx vgo gp wi'c u'T gux vgf* ö'dgi kppkpi 'qp''359'qh''y ku'F tchv'Rtqur gewuu. 'yj gtg" j cxg"dggp"pq"f ghcwmu''kp"r c{o gpv'qh''uvcwwqt{"f wgu"qt"tgr c{o gpv'qh''f gdgpwtgu"cpf "kpvgtguv''yj gtgqp"qt"tgr c{o gpv'qh''nqcpu''htqo "cp{"dcpm'qt"hpcpekcn''kpukwwkqp"cpf "kpvgtguv''yj gtgqp"d{"vj g" Eqo r cp{0'

HCEVQTUVJ CV'O C['CHHGEV'VJ G'TGUWNVUQH'VJ G'QRGTCVKQPU'

"

Wpwwcilqt 'lplt gs wgpv'gxgpw'qt 'tt cpucevlqpu'

Uki plłkecpy'geqpqo ke'ėj cpi gu'ýj cy'o cygt kcm('chłgeygf 'qt 'ctg'fkngm('\q'chłgey'kpeqo g'ht qo 'eqpykpykpi 'qr gt cykqpu''

Vj gtg"ctg"pq"uki pkhecpv'geqpqo ke"ej cpi gu"ý cv'o cvgtkcm("chhgevgf"Eqorcp{øu"qr gtcvkqpu"qt"ctg"hkngn("vq"chhgev'kpeqog" htqo "eqpvkpwkpi "qr gtcvkqpu0'Cp{"urqy f qy p"kp"ý g"i tqy ý "qh"Kpfkcp"geqpqo{"qt"hwwtg"xqncvktk/("kp"i nqdcn'eqooqfk/("rtkegu."eqwrf"chhgev'ý g"dwukpguu'kpenwfkpi "ý g"hwwtg"hkpcpekcn'r gthqtocpeg."uj ctgj qrf gtuø'hwpfu'cpf"cdktk/("vq'korngogpv" uvtcvgi{"cpf"ý g'rtkeg'qh'ý g"Gswkk/"Uj ctgu0'

Mpqy p'\tgpf u'qt '\pegt \class\p\lgu'\j c\forall cxg'j cf '\qt'\ctg'\gzrge\gf '\q'j cxg'\c'\o c\gt \cn\ctg xgt \g'\o rcev'\qp'\cngu't gxgp\wg'' qt '\peqo g'lt qo '\eqp\\p\l\p\l\p\l\p\right p\right p\right p\right p\right p\right p\right p\right pu''

Qý gt"ý cp"cu"f kverqugf "kp"ý g"ej cr vgt "kkrgf "õ*TkurlHc evqt u*ö"dgi kppkpi "qp"46"qh"ý ku"F tch/"Rtqur gewu"vq"qwt"npqy rgf i g." yj gtg"ctg"pq"npqy p"ktgpf u"qt "wpegtvckpvkgu"ý cv"j cxg"qt"j cf "qt"ctg"gzr gevgf "vq"j cxg"c"o cvgtkcri'cf xgtug"ko r cev'qp"tgxgpwgu" qt"kpeqo g"qh"qwt"Eqo r cp{"htqo "eqpvkpvkpi "qr gtcvkqpu0"

Hwwt g'èj cpi gu'lp't grc vlqpuj kr'dgvy ggp'èqunu'cpf 't gxgpwgu'lp'ècug'qh'gxgpw'lmej 'cu'hwwt g'lpet gcug'lp'hcdqwt 'qt '' o cvgt kcn'èquv'qt 'r t kegu'tj cv'y kn'ècwug'o cvgt kcn'èj cpi g''

Ceeqtfkpi "vq"qwt"npqy ngfig."vj gtg"ctg"pq"hwwtg"tgncvkqpujkr "dgwy ggp"equv"cpf "kpeqog"vj cv"y qwf "dg"gzrgevgf "vq"j cxg"c" ocytkcn"cfxgtug"korcev"qp"qwt"qrgtcvkqpu"cpf 'tgxgpwgu0Jqygxgt."kpetgcug"kp"vjg"equv"qh"vjg'iqqfu"kp"yjkej "vjg'Eqorcp{"fgcnu."ykn"chhgev"vjg"rtqhkwcdknkv{"qh"vjg"Eqorcp{0Hwtvjgt."vjg"Eqorcp{"oc{"pqv"dg"cdng"vq"rcuu"qp"vjg"kpetgcug"kp"rtkegu"qh"vjg"ugtxkegu"vq"vjg"ewuqogtu"kp"hwn"cpf"vjku"ecp"dg"qhhugv"vjtqwij"equv"tgfwevkqp0"

Vj g'gzvgpv'tq'y j kej 'b cvgt kcrllpet gcugu'lp 'pgv'tcrgu'lqt 't gxgpwg'ct g'f wg'tq'lpet gcugf 'tcrgu'xqnwo g.'lpvt qf wevlqp'lqlt' pgy 'l't qf wevu'lqt 'ligt xkegu'lqt 'lpet gcugf 'l't kegu'

Vj g'kpetgcug'kp'tgxgpwg'ku'd{ 'cpf 'ncti g'nkpngf 'vq'kpetgcug'kp'xqnwo g'qh'cm'vj g'cevkxkkkgu'ecttkgf 'qww'd{ 'vj g'Eqo r cp{0' ...

Vqvcnlvnt pqxgt 'qhlgcej 'b clqt 'lpf wunt { 'ligi o gpv'lp'y j lej 'lj g'Kunngt 'Eqo rcp{ 'qrgt cvgu''

Vj g'eqo r cp{ 'ku'o ckpn{ 'gpi ci gf 'kp''y g'dwukpguu'ur gekcnk kpi 'kp''y g''r tgytgcvo gpv.'r qy f gt 'eqcvkpi .'y qqf 'eqcvkpi '('RXFH' eqcvkpi "qp"O gvcnu."o clqtn{ "dgkpi "cnwo kpkwo "gzytwukqpu0'Tgrgxcpv'kpf wnt { "f cvc."cu''cxckrcdrg."j cu''dggp''kpenwf gf 'kp''y g'' ej cr vgt 'kkrgf 'o *Kpf wnt { 'Qxgtxkgy* ö''dgi kppkpi "qp": 4'qh'y ku'Ftchv'Rtqur gewu0'

, ,,



Eqo rgvlskxg'Eqpf kvlqpu''

 $Y g"j cxg"eqo r gwklqp"y kj "Kpf kcp"cpf "kpygtpcylqpcn"o cpwlcewtkpi "eqo r cpkgu"cpf "qwt"tguwwu"qh"qr gtcylqpu"eqwf "dg" chłgeygf "d{"eqo r gwklqp"kp" y g"o cpwlcewtkpi "kpf kwt { "kp" Kpf kc"cpf "kpygtpcylqpcn"o ctngy"kp" y g"hwwtg0' Y g"gzr gev' eqo r gwklqp"\q'kpygpukh{ 'f wg"q'r quuldng'pgy 'gpytcpwl'p'y g'o ctngy 'gzkuwpi 'eqo r gwkqtu'hwtyi gt 'gzr cpf kpi 'iy gkt 'qr gtcylqpu" cpf "qwt "gpyt { "kpyq"pgy "o ctngy"y g"o c{ "eqo r gyg"y kyj "y gm/guwcdrkuj gf "wpqti cpk gf "eqo r cpkgul"gpykkgu0'Vj ku'y g" dgrkgxg"o c{ "ko r cev'qwt "hxpcpekcn"eqpf kwlqp"cpf "qr gtcylqpu0'Hqt"f gwknu. "r ngcug"tghgt "q" y g"ej cr ygt "wkngf "õ$ *Thunt Hc evqt u*ö" dgi kppkpi "qp"46"qh'y ku'F tchx'Rtqur geww0'

Kpet gcug'kp'kpeqo g''

Kpetgcugu'kp''qwt''kpeqo g''ctg''f wg''q''y g''hcevqtu''f guetkdgf ''cdqxg''kp''kp''y ku''ej cr vgt''wpf gt''ö*Hcevqtu''Clhgevkpi ''Qwt''T guwnu''qh''* Qrgtcvkqpu'ö''cpf ''ej cr vgt''kwpf ''ō*TkunlHcevqtu*'ö''dgi kppkpi ''qp''46''qh''y ku''F tchv'Rtqur geww.0''

Usc wwi'qh'cp{ 'Rwdrler('Cppqwpegf 'Pgy 'Dwdpguu'Ugi o gpwi'

Gzegr v'cu'f kuenjugf "gnigy j gtg'kp" y g'Ftchv'Rtqur gewu. "y g'j cxg" pqv'cppqwpegf "cpf 'fq" pqv'gzr gev'q "cppqwpeg'kp" y g'pgct" hwwtg" cp{ "pgy "dwukpguu'ugi o gpw.0"



UVCVGO GPV'QH'HIP CPEICN'IPFGDVGFPGUU''

Dt lghlf gwclud'qp'\dag g'hlpcpelcnllpf gdvgf pgud'qhl\dag g'\dag CUUQEKCVGF 'EQCVGTUNKO KVGF \dag 'cu'\qp'\Ugr vgo dgt '52.'4245'' ku'\cu'\wpf gt<''

WPUGEWTGF'NQCPU'HTQO'HRPCPEKCN'KPUVKVWKQP<'

Pco g'qh'Ngpf gt" Rwtrqug'' Tcvg'qh' Tgrc{o gpv'Vgto u' Qwwcpf lpi 'cu'qp'' 5202; 04245" Kpvgt·guv'' * 'kp'henj u+'' 34' " 47@2" Kpxgpwtg'Hkpcpekcn'Rtkxcvg'Nko kgf' Yqtmkpi" Tgrc{cdrg"qp" Ecr ken Nqep" F go cpf" VQVCN'' 47@2"

WPUGEWTGF'NQCPUHTQO'QVJGTUK'

Pco g'qhNgpf gt ''	Co qwpv'Qww.cpf kpi 'cu'qp' 5202; 04245''' *Tนปหุ้o'Ncmj เห''
Ht qo 'Flt gevqt u'cpf 'Uj ct gj qrf gt u'	"
Lci lk/Upi j "F j kmp"	; 0, 2"
Vqwn'	;0,2"

"



UGEVKQP'Z<NGI CN'CPF'QVJ GT'KPHQTO CVKQP"

QWWUVCPF IPI 'NIWI CVIQPU'CPF'O CVGTICN'F GXGNQRO GPVU'

Gzegr v'cu'uvcyf 'lp''y ku'ugevkqp. 'y gtg'ctg'pq'qwuvcpf kpi "KFetko kpcnl' tqeggf kpi u." KFeckqpu'vcngp'd { 'uvcwqt { 'qt'tgi wrcyt { 'cwy qtkkgu." *KFeckqpu'vcngp'd { 'uvcwqt { 'qt'tgi wrcyt { 'cwy qtkkgu." *KFeckqpu'vcngp'd { 'uvcwqt { 'qt'tgi wrcyt { 'v quen'gzej cpi gu'ci ckpuv'qwt 'Rtqo qygtu'lp' y g'rcuv'hxg'Hkuecnu. 'kpenwf kpi 'qwuvcpf kpi 'cevkqp. '*KX+'ercko u'tgrcygf 'vq'F ktgev'cpf 'Kpf ktgev'Vczgu'kp'c'eqpuqnkf cygf 'o cppgt." *X+"f gycku'qh'cp{ 'qyi gt'r gpf kpi 'o cygtkcn'nkki cykqp'y j kej ''ctg'f gygto kpgf ''vq'dg'o cygtkcn'cu'r gt'c'r qnke{ 'cf qr ygf ''d{ 'qwt'' Dqctf ''*6O cygtkcnky{ "Rqnke{ \begin{array}{c} \partial \p

Hqt"ij g"r wtr qug"qh"*X+"cdqxg."qwt"Dqctf "kp"ku"o ggvkpi "j grf "qp"F gego dgt"44."4245."j cu"eqpukf gtgf "cpf "cf qr vgf "c"-Rqrke{" qh"O cvgtkcrkx{ø"hqt" kf gpvkhlecvkqp"cpf "f gvgto kpcvkqp"qh"y j gvj gt "c"r ctvkewrct"gxgpv" l"kphqto cvkqp"ku"o cvgtkcrl'rkki cvkqp" kpxqrxkpi "iy g"T grgxcpv"Rctvkgu"d{"eqo r wkpi "ksu")s wcpvkcvkxg)"qt")s wcrkscvkxg)"etkgtkc*ti+0"

Kp"vgto u"qh"vj g"O cvgtkchk{"Rqrke{."cm"r gpf kpi "rkkhi cvkqp"kpxqrxkpi "vj g"Tgrgxcpv"Rctvkgu."qvj gt"vj cp"etko kpcri'r tqeggf kpi u." cevkqpu"d{"tgi wrcvqt{"cwj qtkkgu'cpf "uvcwvqt{"cwj qtkkgu."f kuekr rkpct{"cevkqp"kpenwf kpi "r gpcnv{"ko r qugf "d{"UGDKqt"uvqem" gzej cpi gu"ci ckpuv"vj g"Rtqo qvgtu"kp"vj g"rcuv"hkxg"Hkuecnu"kpenwf kpi "qwuvcpf kpi "cevkqp."cpf "vcz"o cwgtu."y qwrf "dg"eqpukf gtgf" → cvgtkcnp"khx"

c0Å yj g"o qpgwt{"co qwpv'qh'encko "d{"qt"ci ckpuv'yj g"gpvks{"qt"rgtuqp"kp"cp{"uwej "rgpf kpi "o cwgt "gzeggf" "32@2"Ncnj u"
*Twrggu'Vgp'Ncnj u'qpn(+='cpf"

dOÁ vj g'Dqctf "qt"cp{ "qhku'eqo o kwggu'uj cmlj cxg"vj g"rqy gt "cpf "cwj qtk\f" "vq"f gvgt o kpg"ukwcdrg"o cvgt kcrk\f" "vj t guj qrf u'hqt" vj g"uwdugs wgpv'hkpcpekcnl{ gctu"qp "vj g"chqt guckf "dcuku"qt "cpf "qvj gt "dcuku"cu"o c{ "dg"f gvgt o kpgf "d{ "vj g"Dqctf "qt "cpf "qh" ku'eqo o kwgguO'

Qwt"Dqctf."kp"ku"o ggvkpi "j grf "qp"F gego dgt"44."4245.'f gvgto kpgf "ý cv"qwuvcpf kpi "f wgu"vq"etgf kqtu"kp"gzeguu"qh"32"rcnj u" uj cm"dg"eqpukf gtgf "cu"o cvgtkcn"f wgu"*60 cvgtkcn"f wgu"

EQPVIPI GPV'NICDININ'KGU'QH'QWT'EQORCP["

qwt 'Eqo r cp{ 'j cu'pq 'Eqpvkpi gpv'Nkcdkrkvkgu''

CO NKVH CVKQP'KPXQNXKPI 'QWT'EQORCP["

Nkski cvkqp'či ckpus'Qwt 'Eqo rcp{<'

"

*k≠0 Cmiet ko kpcnir t qeggf kpi u<''

P kri'

*Net Cricestapu'd{ 't gi wrc vqt { 'cwej qt Isligu'c pf 'tirc wwqt { 'cwej qt Isligu' |

P kn'

**Hkk0 F kuckrıhpct { 'cevkqp' lipenvf lipi 'r gpcn { 'lorqugf' 'dl { 'UGDKqt' livqen ligzej cpi gu'ci clipuv' qwt' Eqorcp { 'lip' vj g' licuv' hkxg' lipcpekcn { gct u' lipenvf lipi 'qww.cpf lipi 'cevkqp < "

P kri'

*kx+0 Y kthwiF glrc wngt <"

P kri'

*x+0 Enclor u't gnc vgf 'tq'Flt gev'cpf 'Kpf lt gev'Vczgu<'

Fktgev'Vcz<''

-



Cu"r gt"y gduksg"qh"Kpeqo g"Vcz."yj g"hqmqy kpi "g/r tqeggf kpi u"ctg"uj qy p"cu"r gpf kpi "y ksj "õqr gpö"qt"õr gpf kpi ö"uvcww0' J qy gxgt. "vj g"co qwpv"j cu"pqv"dggp"o gpwqpgf "cpf "ecppqv"dg"et { uvcmk gf " 'P kn' Kpeqo g'Vcz<" Cu'r gt'y gdukg''qh''Kpeqo g''Vcz''F gr ctvo gpv'hqt''qwuvcpf kpi ''vcz''f go cpf .''hqnqy kpi ''f ghcwnu''kp''y g''r c{o gpv'qh''Kpeqo g''Vcz'' d{ "vj g"Eqo r cp{ "ctg"uvkm"qwuvcpf kpi <" P kn' Vcz'Fgf wevgf 'ċv'Uqwteg'*VFU≺PKN'' 'P kn' *xk+0 Qvj gt 'r gpf lpi 'liski cvkqpu'cu'r gt 'vj g'r qale{ 'qhlò cvgt lcals{ 'f gllpgf 'd{ 'vj g'Dqctf 'qhlFkt gevqt u'qhlqwt 'Eqorcp{<'' P kn' Nkski cskqp'd{ 'Qwt 'Eqo rcp{'' ***k**∙0 Cmetko kpcnlrtqeggf kpi u<" P kn' Cnicevkqpu'd{ 'tgi wrcvqt{ 'cwj qt kdgu'cpf 'twcvwqt{ 'cwj qt kdgu<" *||||0 P kn' *||||||0 hksg'hlpcpekcn{ gctu'kpenvf kpi 'qww.cpf kpi 'cevkqp<" P kn' Enckou't gncvgf 'vq'Fkt gev'cpf 'Kofkt gev'Vczgu≺" %**x**+0 P kn' Qvj gt 'r gpf lpi 'llski cvkqpu'/ 'Cu'r gt 'vj g'r qrle{ 'qhlò cvgt kcrls{ 'f gllpgf 'd{ 'vj g'Dqctf 'qhlFkt gewqtu'qhlqwt Eqorcp{<" %x+0 P kri' DO NKVKI CVKQP'KPXQNXKPI 'QWT'RTQO QVGT" Nkski cykąp'ći ckpuy'Qwt 'Rt qo qygt'' *k#0 Cmetko kpcnrtqeggfkpi u<" P kri' Cnicesiapu'd{ 't gi wac vqt { 'cwj qt ksigu'cpf 'twc wwqt { 'cwj qt ksigu<'" *||k||0 P kri' *HH=0 Fkækrilpct{ 'cevkqp'kpenwf kpi 'rgpcnf 'ko rqugf 'd{ 'UGDKqt 'twqenigzej cpi gu'ci ckpuv'tj g'Rt qo qvgt u'kp'tj g'icuv' Hxg'hlpcpelcn{ gctu'lpenvf lpi 'qwuxcpf lpi 'cevlqp<" P kri' ***k**x+0 YkhwniFghcwnygtu≺"



```
P kri'
    *x+0
                                Enclo u't grevgf 'tq'Fkt gev'cpf 'Kpf kt gev'Vczgu<'"
                                P kn'
                   Fltgev'Vcz<"
Cu"r gt"y gduksg"qh"Kpeqo g"Vcz."yj g"hqmqy kpi "g/r tqeggf kpi u"ctg"uj qy p"cu"r gpf kpi "y ksj "õqr gpö"qt"õr gpf kpi ö"uvcww0'
J qy gxgt. "vj g"co qwpv"j cu"pqv"dggp"o gpwlqpgf "cpf "ecppqv"dg"et { uvcml\ gf <"
P kri'
                   Kpeqo g'Vcz<"
Cu"r\ gt"y\ gduksg"qh"\ \textit{Kp}eqo\ g"\ \textit{Vcz}."\ \textit{ij}\ g"\ \textit{hqm}qy\ \textit{kpi}\ "\textit{g}/r\ tqeggf\ \textit{kpi}\ u"\ \textit{ctg}"\ \textit{uj}\ qy\ p"\ \textit{cu}"r\ gpf\ \textit{kpi}\ "\ \textit{oqr}\ gp\"{o}"\ \textit{qt}"\ \textit{or}\ gpf\ \textit{kpi}\ \ddot{o}"\ \textit{uvcwu0}"\ \textit{ovc}\ \textit
J qy gxgt."vj g"co qwpv"j cu"pqv"dggp"o gpvkqpgf "cpf "ecppqv"dg"et { uvcmk gf <"
P kn'
                    Vcz'Fgf wewgf 'ċv'Uqwteg'*VFU⊦<"
P kn'
                   Kpf ktgev'Vcz<P KN''
                                 Qvj gt "rgpf kpi "hkki cvkqpu"ó"Cu"rgt "vj g"rqnle{ "qhl'o cvgt kchk{ "f ghlpgf "d{ "vj g"dqct f "qhl'f kt gevqt u"qhl'qwt "
  *xk+0
                                Eqo rcp{<"
P krl'
Nkki cvkqp'd{ 'Qwt 'Rt qo qvgt u''
      *k#0
                                 Cmiet ko kocnir t qeggf koi u<"
P kn'
    *14:0
                                 Cniceslapu'd{ 't gi wac vqt { 'c wyj qt kslgu'c pf 'twc vwvqt { 'c wyj qt kslgu<''
P kn'
                                Fkækrıhpct { 'cevkqp'kpenvf kpi 'rgpcnf 'ko rqugf 'd{ 'UGDKqt 'iwqenigzej cpi gu'ci ckpuv'tj g'rt qo qvgt u'kp'tj g'icuv'
  *<del>||||||</del>0
                                hksg'hlpcpelcn{ gctu'lpenvf lpi 'qww.cpf lpi 'cevlqp<"
P kn''
  *kx+0
                                Enclo u't grevgf 'tq'Fkt gev'cpf 'Kpf kt gev'Vczgu<"
P kn'
    *x+0
                                 Qvj gt 'rgpf kpi 'hkki cvkqpu'ó''Cu'rgt ''vj g'rqnke{ ''qhi'o cvgt kcnkx{ ''f ghkpgf ''d{ ''vj g''Dqctf ''qhi'F kt gevqt u''qhi'qwt ''
                                Eqo rcp{<"
P kn'
EO NKVIN CVKOP'KPXONXKPI 'QWT'FKTGEVQTU'
Nkski cykąp'ći ckpus'Qwt 'Fkt gevqtu''
      *k#0
                                 Cmlet ko kpcnlrt qeggf kpi u≺"
P kn'
```



*14:0 Cniceslapu'd{ 't gi wrc vqt { 'cwj qt kslgu'c pf 'twc vwqt { 'cwj qt kslgu<'' P kn' *14400 F kækrıhpct { 'cevkqp'kpenvf kpi 'r gpcnf 'ko r qugf 'd{ 'UGDKht 'twqenfgzej cpi gu'ci ckpuv'qwt 'f kt gewqt u'kp'tj g'icuv' hkg'hlpcpelcn{ gctu'lpenvf lpi 'qww.cpf lpi 'cevlqp<" P kn' ***k**x+0 YkdawdFghcwngtu≺' P qpg"qh"qwt"F ktgevqtuø'cr r gct "qp" y g"Y khwiF ghcwngtuø'hkv"cut gt "y g"T gugt x g"Dcpni'qh" kf kc "Ektewct "qp" Y khwiF ghcwngtuø'l Enclo u't grevgf 'tq'Fkt gev'cpf 'Kpf kt gev'Vczgu<''' FltgevVcz<" Cu"r gt"y gduksg"qh"Kpeqo g"Vcz."yj g"hqnrqy kpi "g/r tqeggf kpi u"ctg"uj qy p"cu"r gpf kpi "y ksj "õqr gpö"qt"õr gpf kpi ö"uxcwut/V J qy gxgt. 'y g'co qwpv'j cu'pqv'dggp'o gpwqpgf "cpf "ecppqv'dg"et {uvcmk gf <" P kri' Kpeqo g'Vcz<" $Cu''r\ gt''y\ gdukg''qh'''Kpeqo\ g''Vcz''F\ gr\ ctvo\ gpv''hqt''qwuvcpf\ kpi\ ''vcz''f\ go\ cpf\ .''hqmqy\ kpi\ ''f\ ghcwnu''kp''y\ g''r\ c\{o\ gpv''qh'''Kpeqo\ g''Vcz''\ gr\ cvo\ gpv''qh'''Kpeqo\ g''Vcz''\ gr\ cvo\ gpv''qh'''Kpeqo\ g''Vcz'''\ gr\ cvo\ gpv''qh'''Kpeqo\ g''Vcz'''\ gr\ cvo\ gpv''qh'''Kpeqo\ g''Vcz''''\ gr\ cvo\ gpv''qh'''Kpeqo\ g''Vcz'''\ gr\ cvo\ gpv''qh'''Kpeqo\ g''Vcz'''\ gr\ cvo\ gpv''qh'''Kpeqo\ g''Vcz'''\ gr\ cvo\ gpv''qh''''qq'''' gr\ cvo\ gpv''qh''''qq'''' gr\ cvo\ gpv''qh''''qq'''' gr\ cvo\ gpv''qq'''' gr\ cvo\ gpv''qh''''qq'''' gr\ cvo\ gpv''qq'''' gr\ cvo\ gpv''qq''' gr\ cvo\ gpv''qq'''' gr\ cvo\ gpv''qq'$ d{ "vj g"Rtqo qvgtu"ctg"uvkm"qwuvcpf kpi <" P kn' Vcz'Fgf wevgf 'ċv'Uqwteg'*VFU⊦<" P kri' *xk+0 Qyj gt 'rgpf kpi ''hkki cykqpu''ó''Cu'rgt ''yj g''rqnke{ ''qhi'o cygt kchk{ ''f ghlpgf ''d{ ''yj g'Dqctf ''qhi'Fkt gevqtu''qhi'qwt'' Eqo rcp{<" P kn' Nkki cvkqp'd{ 'Qwt 'Fkt gevqt u'' ***k**∙0 Cmlet ko kpcnlrt qeggf kpi u≺' P kn' *||k||0 Cniceskapu'd{ 't gi wac vqt { 'cwyj qt kslgu'c pf 'twc vwvqt { 'cwyj qt kslgu<'" P kn' *14400 Fkuckrulpct { 'cevkqp'kpenvf kpi 'rgpcn{ 'ko rqugf 'd{ 'UGDKqt 'iwqendgzej cpi gu'ci ckpuv'tj g'fkt gevqt u'kp'tj g'hcuv' hksg'hlpcpekcn{ gctu'lpenvf kpi 'qww.cpf kpi 'cevkqp<" P kn' *kx+0 Enclorut grevgf 'tq'Flat gev'cpf 'Kof lat gev'Vczgu<'" P kn' *x+0 Qvj gt ''r gpf lpi ''hlski cvkqpu'/''Cu'r gt ''vj g''r qhle{ ''qh''o cvgt lcrls{ ''f ghlpgf ''d{ ''vj g'Dqctf ''qhi'Flit gevqt u''qhi'qwt'' Eqo rcp{<" P kri'



FUNK	VIN CVIQP IP XQNXIPT QWITT TQWREQO RCP IIGUTGP VIV IIGUK
Nkski cv	skqp'ċi ckpux'Qwt'Itqwr'Eqorcpkgu'I'Gpvkskgu<''
*ki0	Cmietko kpcnirt qeggf kpi u≺"
P kn''	
** 0	Cnicevkqpu'd{ 't gi wacvqt { 'cwoj qt kokgu'cpf 'tocwwqt { 'cwoj qt kokgu<''
P kn''	
" * 1114 0	F kuskr rlpct { 'cevkqp'kpenvf kpi 'r gpcnv{ 'ko r qugf 'dl{ 'UGDK'qt 'lwqendgzej cpi gu'ci ckpuv'qvt 'f kt gevqt u'kp''y g'ircuv' hksg'hkpcpekcn{ gct u'kpenvf kpi 'qww.rcpf kpi 'cevkqp<'"
P kn''	
*lx:+0	Y khwiF glr: wngt u≺'
" P qpg"c F ghcwr	ılı'qwt'I tqwr'Eqorcpkguø'crrgctu'qp''yjg''Ykıhıxıl'Fghcwnıgtuø'nkuv'cu'rgt''yjg'Tgugtxg'Dcpm'qh'lkofkc''Ektewnct''qp''Ykıhıxıl nıgtuø0'
*x+0	Enclou't grevgf 'tq'Flt gev'cpf 'Kpf lt gev'Vczgu<'
	FltgevVcz<"
	"y gduksg"qh" Kpeqo g" Vcz." vjg" hqmqy kpi "g/r tqeggf kpi u"ctg" ujqyp" cu"rgpf kpi "yksj" õqrgpö" qt "õrgpf kpiö" uvcwww0 :gt." vjg" coqwpv"jcu" pqv"dggp" ogpwkqpgf" cpf" ecppqv"dg" et {uvcmk gf<"
P kn''	
"	Kpf lt gev'Vcz<"
	" "y gdulwg"qh"lifoeqo g"Vcz"Fgrctvo gpv"hqt"qwuncpfkpi "vcz"fgocpf."hqnqykpi "fghcwnu"kp"yjg"rc{ogpv"qh"lifoeqog"Vcz" Rtqoqvgtu"ctg"uwhn"qwuncpfkpi<"
P kn''	
*xk#0	Qvj gt''rgpf lpi ''nlshi cwlqpu''ó''Cu''rgt''vj g''rqnle{''qhl'o cvgt lcnls{''f ghlpgf''d{''vj g''dqctf''qhl'f ltgevqt u''qhl'qwt' Eqorcp{<'''
P kn''	
Nkski cv	olqp'd{'Qwt'I tqwr'Eqorcplgu'I'Gpvlsdgu≺'
* ki 0	Cmlet ko kpcnlrt qeggf kpi u≺"
P kn''	
" * 1k 0	Cniceskapu'd{ 't gi wacsqt { 'cwj qt ksłgu'cpf 'twcswsqt { 'cwj qt ksłgu<''
P kıl'	
" * 1444 0	Fkækrılpct { 'cevkqp'kpenvf kpi 'r gpcn/{ 'korqugf 'd{ 'UGDK'qt 'lwqendgzej cpi gu'ci ckpuv'\j g'fkt gevqt u'kp'\j g'iruv' lkxg'lhpcpekcn{ gct u'kpenvf kpi 'qwvwcpf kpi 'cevkqp<'"
P kn''	
" *kx+0	Encloru't gnevgf 'vq'Flat gev'c pf 'Kpf lat gev'V czgu<''
" Pkn"	



*x+0 Qvj gt ''rgpf lpi ''hkki cvlqpu''o''Cu''rgt ''vj g''r qrle{ ''qhi'o cvgt kchk{ ''f ghlpgf ''d{ ''vj g''Dqctf ''qhi'Fkt gevqt u''qhi'qwt ''
Eqorcp{<"

P kri'

NKVK CVKQP'KPXQNXKPI 'QWT'UWDUKFKCTKGU<'

O CVGTKCN'F GXGNQRO GP VU'URP E G'VJ G'NCUV'DCNCP E G'UJ GGV''

Gzegr v'cu"o gpvkqpgf "wpf gt" yj g"ej cr vgt" *"õO cpci go gpv"F kuewuukqp"cpf "Cpcn(uku"qh!Hkpcpekcn!Eqpf kskqp"cpf "Tguww"qh! Qr gt c vkqpö* "qp" r ci g"362" qh" yj ku"F tchv"Rtqur gewu." yj gt g"j cxg" dggp" pq" o cvgtkcn! f gxgrqr o gpvu. "ukpeg" yj g"f cvg" qh" yj g"rcuv' cwf ksgf "dcmpeg" yj gyv".

QWUVCPFIPI 'FWGU'VQ'ETGFKVQTU''

Kp"ceeqtf cpeg"y kj "qwt"Eqo r cp{øu"o cygtkcrkv{"r qrke{"f cygf"F gego dgt"44."4245."dgrqy "ctg"yj g"f gyckru"qh"yj g"Etgf kqtu" y j gtg"yj gtg"ctg"qwuxcpf kpi "co qwpvu"cu"qp"Ugr vgo dgt"52."4245<"

Ut 'P q0'	Rct vlewet u''	Co qwpv'*Tu0lp'Ncmj u+''
30 "	Vqvcn'Qwuvcpf kpi "f wgu"vq"O ketq."Uo cm'("O gf kwo "Gpvgtrtkugu"	3805: "
40 "	Vqvcn" Qwuvcpf kpi "f wgu" vq" etgf kvqtu" qyj gt" yj cp" O ketq." Uo cm' ("O gf kwo "Gpvgtr t kugu"	; 9039"
	Vqv:n'	335072''

 $\label{thm:compact} Vj\ g"f\ gvcknu"r\ gtvckpkpi\ "vq"co\ qwpwu"f\ wg"vqy\ ctf\ u"vj\ g"o\ cvgtkcn"etgf\ kqt"ku"cxckncdng"qp"vj\ g"y\ gduksg"qh"qwt"Eqo\ r\ cp{"cv"\ y\ y\ 0cuuqekcvgf\ eqcvgtu0p"}$

 $\label{thm:condition} \begin{tabular}{l} Kphqto cvkqp"r tqxkf gf "qp"vj g"y gdukg"qh'qwt"Eqo r cp{"ku"pqv'c"r ctv'qh'vj ku"F tchv'Rtqur gewu"cpf "uj qwrf "pqv'dg"f ggo gf "vq"dg" kpeqtr qtcvgf "d{"tghgtgpeg0Cp{qpg"r roekpi "tgnkcpeg"qp"cp{"qvj gt "uqwteg"qh"kphqto cvkqp. "kpenwf kpi "qwt"Eqo r cp{ϕu"y gdukg." y y ϕ uuqekcvgf eqcvgtu0kp"y qwrf "dg"f qkpi "uq"cv'vj gkt "qy p"tkun" $\phace{2.5cm}$ kpenwf kpi "qwt"Eqo r cp{$\phace{2.5cm}$ ku"y gdukg." } \phace{2.5cm}$ y y $\phace{2.5cm}$ uuqekcvgf eqcvgtu0kp"y qwrf "dg"f qkpi "uq"cv'vj gkt "qy p"tkum" } \phace{2.5cm}$ kpenwf kpi "qwt"Eqo r cp{ϕu'g gt"vg gdukg." } \phace{2.5cm}$ kpenwf kpi "qwt"Eqo r cp{ϕu'g gt"vg gdukg." } \phace{2.5cm}$ kpenwf kpi "qwt"Eqo r cp{ϕu'g gt"vg gdukg." } \phace{2.5cm}$ kpenwf kpi "qwt"Eqo r cp{ϕu'g gt"vg gdukg." } \phace{2.5cm}$ kpenwf kpi "qwt"Eqo r cp{ϕu'g gt"vg gdukg." } \phace{2.5cm}$ kpenwf kpi "qwt"Eqo r cp{ϕu'g gt"vg gdukg." } \phace{2.5cm}$ kpenwf kpi "qwt"Eqo r cp{ϕu'g gt"vg gdukg." } \phace{2.5cm}$ kpenwf kpi "qwt"Eqo r cp{ϕu'g gt"vg gdukg." } \phace{2.5cm}$ kpenwf kpi "qwt"Eqo r cp{ϕu'g gt"vg gdukg." } \phace{2.5cm}$ kpenwf kpi "qwt"Eqo r cp{ϕu'g gt"vg gdukg." } \phace{2.5cm}$ kpenwf kpi "qwt"Eqo r cp{ϕu'g gt"vg gdukg." } \phace{2.5cm}$ kpenwf kpi "qwt"Eqo r cp{ϕu'g gt"vg gdukg." } \phace{2.5cm}$ kpenwf kpi "qwt"Eqo r cp{ϕu'g gt"vg gdukg." } \phace{2.5cm}$ kpenwf kpi "qwt"Eqo r cp{ϕu'g gt"vg gdukg." } \phace{2.5cm}$ kpenwf kpi "qwt"Eqo r cp{ϕu'g gt"vg gdukg." } \phace{2.5cm}$ kpenwf kpi "qwt"Eqo r cp{ϕu'g gt"vg gdukg." } \phace{2.5cm}$ kpenwf kpi "qwt"Eqo r cp{ϕu'g gt"vg gdukg." } \phace{2.5cm}$ kpenwf kpi "qwt"Eqo r cp{ϕu'g gt"vg gdukg." } \phace{2.5cm}$ kpenwf kpi "qwt" kpenwf kpenwf kpenwf kpenwf kpi "qwt" kpenwf kpe$

"



I QXGTPO GPV'CPF'QVJ GT'UVCVWQT['CRRTQXCNU'

Qwt'Eqo r cp{'j cu'tgegkxgf''y g'pgeguuct { "eqpugpvu." itegpugu." it gto kuukqpu. 'tgi kntcvkqpu'cpf "crrtqxcm' itqo "y g'I qxgtpo gpv." xctkqwu'I qxgtpo gpv'ci gpekgu'cpf "qy gt'incwwqt { "cpf' "I'qt'tgi wrcvqt { "cwj qtkkgu'tgs wktgf' "hqt'ectt { kpi "qp'qwt'r tgugpv'dwukpguu" cevkxkkgu'cpf "gzegr v'cu'o gpvkqpgf' wpf gt''y ku'j gcf kpi ."pq'hwty gt'o cvgtkcn'crrtqxcm'ctg'tgs wktgf "hqt'ectt { kpi "qp'qwt'r tgugpv' dwukpguu" cevkxkkgu'0'Qwt "Eqo r cp{ "wpf gt vcngu" vq" qdvckp" cm'o cvgtkcn'crrtqxcm'cpf "ntegpugu" cpf''r gto kuukqpu'tgs wktgf'' vq'' qr gtcvg''qwt'r tgugpv'dwukpguu" cevkxkkgu'0'Wprguu'qy gty kug'uvcvgf. "vj gug''crrtqxcm'qt''ntegpugu''ctg''xcnkf''cu''qh''y j g''f cvg''qh''y ku'' Ftch'ktqur gewu''cpf''kp''ecug'qh'ikegpugu''cpf''crrtqxcm'y j kej "j cxg''gzrktgf="y g''j cxg''gky gt''o cf g''cp''crrnecvkqp''hqt''tgpgy cn'' qt''ctg''kp''y g''r tqeguu''qh''o cmkpi "cp''crrnecvkqp''hqt''tgpgy cn''kp''y g''r q''qr gtcvg''qwt''dwukpguu''qh''Rqy f gt''Eqcvkpi ."y g''tgs wktg'' xctkqwu''crrtqxcm''cpf''I'qt''ntegpugu''wpf gt''xctkqwu''rcy u."twrgu''cpf''tgi wrcvkqpu'0'Hqt''hntvj gt''f gvknu''kp''eqppgevkqp''y kj "y g'' crrnecotg''tgi wrcvqt { "cpf''rgi cn'htco gy qtm''r rgcug''tghgt''vq''y g''ej cryt''kxrgf''o Mg{ 'Nof wwt { 'Tgi wrc vkqpu''cpf''Rqnkelguö''qp'' rci g''329''qh'y ku''Ftch''Rtqur gewu''0'

Vj g'Eqo r cp{ 'j cu'kuu'dwukpguu'nqecvgf 'cv<'

Tgi kwgt gf 'Qhheg 'Cuj wk'Mj cpdgtkc'O cj guj vcrc'NR'421: 5168. 'Mqmcvc. 'Xkxgncpcpf cr wt. 'Uqwj ''46'Rcti cpcu.''Vj cmwtr wnwt'' O cj guvqrc. 'Y guv'Dgpi cn 'Kpf kc. '922263''

Vj g'o ckp''qdlgewi'encwug''qhi'yj g'O go qtcpf wo "qhi'Cuuqekc\kqp"cpf "qdlgewi'kpekf gpvcri'vq''yj g''o ckp''qdlgewi'gpcdng''qwt'Eqo r cp{" vq"ectt{"qwv'kuu''cevkxkkgu0'Vj g''hqnnqy kpi "ctg"'yj g''f gvcknu"qhi'nkegpugu."r gto knukqpu"cpf "crrtqxcnu"qdvckpgf "d{"'yj g''Eqo r cp{" wpf gt''xctkqwu''Egpvtcri'cpf "Uvcvg''Ncy u'hqt''ectt{kpi "qww'kuu'dwukpguu<"

CRRTQXCNUHQT'VJ G'KUUVG''

••

Eqtrqtcvg'CrrtqxcnK'

- 30 Vj g"Dqctf "qh'F ktgevqtu"j cxg."r wtuwcpv"vq"Ugevkqp"84*3+*e+"qh'vj g"Eqo r cpkgu"Cev"4235."d{"c"tguqnwkqp"r cuugf "cv"ku" o ggvkpi "j grf "qp"F gego dgt"35."4245."cwj qtkl gf "vj g"Kuwg."hwdlgev'vq"vj g"crrtqxcn'qh'vj g"uj ctgj qrf gtu"cpf "uwej "qvj gt" cwj qtkkgu"cu"o c{"dg"pgeguuct{0"
- 40 Vj g"uj ctgj qrf gtu"qh"vj g"Eqo r cp{"j cxg."r wtuwcpv"vq"Ugevkqp"84*3+*e+"qh"vj g"Eqo r cpkgu"Cev"4235."d{"c"ur gekcn" tguqnwkqp"r cuugf "kp"vj g"Gz vtc/Qtf kpct{"I gpgtcn"O ggvkpi "j grf "qp"F gego dgt"3: ."4245"cwj qtkl gf "vj g"KuuvgO"

Kp/rtkpekrug'crrtqxcnlhtqo 'tj g'UvqemGzej cpi g''

 $Y g"j cxg"t gegkxgf "kp/r t kpekr rg"cr r tqxcnu"htqo "vj g"uvqem"gzej cpi g"hqt"vj g"rkuvkpi "qh"qwt "Gs wkw{ "Uj ctgu"r wtuwcpv"vq"ngwgt "f cvgf "] _"dgctkpi "tghgtgpeg"pq0"] _0'$

Ci tggo gpw'y ky 'PUFN'cpf 'EFUN''

- 30 Vj g"Eqo r cp{"j cu"gpvgtgf "kpvq"cp"ci tggo gpv"f cvgf "Qevqdgt"33."4245"y kij "vj g"Egpvtcn"F gr qukqt{"Ugtxkegu"*Kpf kc+" Nko kgf "võEF UNö+"cpf "Vj g"Tgi kuvtct"cpf "Vtcpuhgt"Ci gpv."y j q"kp"vj ku"ecug"ku. "Dki "Uj ctg"Ugtxkegu"Rtkxcvg"Nko kgf "hqt" vj g"f go cvgtkcnk cvkqp"qh"ku"uj ctgu"U
- 40 Uko kretn{."vj g"Eqo r cp{"j cu"cnuq"gpvgtgf "kpvq"cp"ci tggo gpv"f cvgf "Qevqdgt"33."4245"y kj "vj g"P cvkqpcn"Ugewtkskgu" F gr qukqt{"Nko kgf "%õP UF Nö+"cpf "vj g"Tgi kuvtct"cpf "Vtcpuhgt"Ci gpv."y j q"kp"vj ku"ecug"ku"Dki "Uj ctg"Ugtxkegu"Rtkxcvg" Nko kgf "hqt"vj g"f go cvgtkcnk| cvkqp"qh"ksu'uj ctgu0'
- 50 Vjg"Eqorcp{):i"Kpvgtpcvkqpcn"Ugewtkvkgu"Kfgpvkthecvkqp"Pwodgt"%õKUKPö+"ku"KPG2TKS232350"

NGPFGTUEQPUGPV"

, ,,

30 Vj g'Eqo r cp{ 'j cu'pq'ngpf gtu0J gpeg'pq'eqpugpv'ku'tgs wktgf 0'

KPEQTRQTCVKQP'CPF'QVJ GT'FGVCKNU'

••

Eqo r cp{"y cu"qtki kpcm{ "kpeqtr qtcvgf" cu":-CUUQEKCVGF "EQCVGTU'RTKXCVG"NKO KVGF ϕ "c"r tkxcvg" rlo kgf "eqo r cp{" wpf gt"y g"Eqo r cpkgu'\Grev."4235"y kj "y g"Tgi kntct"qh'Eqo r cpkgu'\Grev."42390Vj g"bco g"qh'y g"eqo r cp{"y cu"ej cpi gf 'htqo ":CUUQEKCVGF 'EQCVGTU'RTKCVG'NKO KVGF ϕ ' ":CUUQEKCVGF "EQCVGTU'NKO KVGF ϕ ' "eqo r cp{"kq" r wdrke "rko kgf "eqo r cp{"kq" y g'kcriTguqnwkqp"r cuugf "d{"y g"tji ctgj qnf gtu"qh'qwt "Eqo r cp{"kp"y g'Gzvtc/qtf kpct{"



I gpgtcn'O ggvkpi "j grf "qp" Qevqdgt "46." 4245." cpf "c" Int guj "egt vkhlecvg" qh''kpeqtr qtcvkqp" eqpugs wgpv''vq" ej cpi g"qh''pco g"y cu'' kunwgf "d{" TQE." Mqmcvc" qp" F gego dgt "3; ." 42450' Vj g" eqtr qtcvg" kf gpvkhlecvkqp" pwo dgt "qh'' qwt "eqo r cp{" ku'' W4: 34; Y D4239RNE4462230'

$\textbf{CRRT} \, \textbf{QXCNU'I'NE'} \, \textbf{GP} \, \textbf{UGU'T} \, \textbf{GNCVGF'VQ'QWT'DWUP'} \, \textbf{GUU'CEVKXK'VGU''}$

 $Y g"tgs wktg"xctkqwu"crrtqxcm"cpf "T'qt"rkegpugu"wpf gt"xctkqwu"twrgu"cpf "tgi wrcvkqpu"vq"eqpf wev'qwt "dwukpguu0"Uqo g"qh"vj g" o cvgtkcn'crrtqxcmi'tgs wktgf "d{ 'wu'vq'wpf gt vcmg"qwt 'dwukpguu"cevkxkkgu"ctg"ugv'qww'dgrqy <" "$

UtO'	F guet kr vkqp''	Cwyj qt kv{ ''	Tgi kwtcvkqp'Pq01''	Fcvg'qh'	F c vg'qh'
Pq0'			Tghgtgpeg'Pq01Nlegpug'Pq0'	Kung''	Gzrkt{''
3"	WF [CO " Tgi kuxtcvkqp"	O kpkınt { "qh'O ketq."	WF [CO/Y D/32/22: 3889	Lwn{ '35."	P0C"
	Egt whecy	Uo cm'cpf 'O gf kwo "		4245	
		Gpvgtrtkugu.'I qxgtpo gpv'			
		qh'Kpf kc"			

VCZ'TGNCVGF'CRRTQXCNUI'NÆGPUGUI'TGI KUVTCVKQPU,"

Ut0' Pq0'	Cwyj qt ku: vkqp'' i t c pwgf ''	Kumkpi 'Cwyj qt kv{ ''	Tgi kwt cylqp'Pq01Tghgtgpeg'' Pq01Nkegpug'Pq0'	F c vg'qh' Kuwg''	Xchf ls{ ''
3"	Rgto cpgpv' Ceeqwpv' P wo dgt'*RCP+"	Kpeqo g"Vcz" F gr ct vo gpv." I qxgtpo gpv'qh" Kpf kc"	CCS EC57: 6N"	F gego dgt" 44."4239"	Rgtr gwcn'
4"	Vcz" F gf wevkqp" Ceeqwpv' P wo dgt" *VCP +0' Co gpf o gpv' y kyj "tgur gev' y" Eqpxgtukqp"qhhr tkxcvg" nko kvgf "vq" r wdrke" Nko kvgf "ku" { gv" vq" dg" f qpg"	Kpeqo g"Vcz" F gr ctvo gpv'vj tqwi j " P cvkqpcn"Ugewtkskgu" F gr quksqt { "Nko ksgf" *P UF N+"O kpkmt {" qh"Hkpcpeg." I qxgtpo gpv'qh" Kpf kc"	ECNC44474I "'	F gego dgt" 44."4239"	Rgtr gwen'
5"	I qqfu" cpf" Ugtxleg" Vcz" If gp\lhec\lqp" Pwo dgt"	Cuukuvcpv" Eqo o kuukqpgt." I qqf u'cpf "Ugtxkeg" Vcz "P gwy qtm'26." I qxgtpo gpv'qh" Kof kc"	3; CCS EC57: 6N3∖ Z"	Ugr vgo dgt" 24."4243"	Qpg"Vko g" Tgi kıxtcvkqp"
6"	Egt Whecy "qh" Gptqno gpv" wpf gt" Y guv" Uccy "Vcz "qp" Rtqhguulqp. "Vtcf gu." Ecmlopi u" cpf " Go rnq {o gpv" Twrgu." 3; 9; "	Y guv'Dgpi cn' Egpvtcn'Wpkv''XK'' Dgj cnc''	3; 4358867549"	O ctej "3: ." 4243"	Lvn("53.4246"

NCDQWT'TGNCVGF'CRRTQXCNUITGI~kUVTCVkQPU, ''

UtO' PqO'	F guet kr vkqp''	Cwyj qt ls{ ''	Tgi kwtcvkqp'' Pq0Tghgtgpeg'' Pq0TNkegpug'Pq0'	Fevg'qhl Ku wg''
3"	Go r m { ggu" Rtqxkf gpv" Hwpf " Tgi kwtcvkqp" *wpf gt "Go r m { gguø"Rtqxkf gpv"Hwpf u" cpf "O kægnæpgqwu" Rtqxkukqpu" Cev." 3; 74+"		Y DECN5246464222"	Cwi wu/24.'4245"
4"	Tgi kıntcıkqp"wpf gt"Go r mq{ggu"Ucvg" Kpuwtcpeg'Cev."3; 6: "	Cuukuvcpv'Fktgevqt." Gorm[{ggu'Uvcvg'' Kpuwtcpeg'' Eqtrqtcvkqp''	632227: 2: 52222; 26"	Cwi wu/26.'4236"

QVJ GT'DWUIP GUU/TGNCVGF'CRRTQXCNU,"



UtO' F guet kr vkqp" Cwyj qt kv{ " Tgi kmt cvkqp'P wo dgt" Fcvg'qh' Fcvg'qh' Pq0' Egt vkhecvg'' Gzrkt{" F gego dgt" 30' KUQ"; 2234237" S wcrkv{ 'O cpci go gpv'U{ uvgo " S CEU/WCH/S/CE/ F gego dgt '28." 320450326: " 4245" 27.'4248" 4" Vtcf g'Tgi kutcvkqp'PqQC/ Vtcf g'Negpug/" Cuj wk/L'I tco 'Rcpej c{cv' F gego dgt '45." Xcrlf 'wr vq" 4245" *Wpk/'K-" K R1338514243/4244" Octej '53.' Vtcf g'Tgi kutckqp" Lwn '39.4245" 4246" Egt vkhlecvg'Kuuvg'PqQ' 37914245/4246" Y guv'Dgpi cn'O wplekr cn'Cev." 5" Xcrlf "wpvkri" Vtcf g'Negpug/'D/ Egt vkhlecvg'Pq0' F gego dgt "4: ." 7913"*Wpk/**'KK**!" 4245" 3;;5" 2; 39R487934549927; " F gego dgt" 49.4246" 6" Xcrlf 'wpvln' Vtcf g'Negpug/" Y guv'Dgpi cn'O wplekr cn'Cev." Egt vkhlecvg'Pq0' F gego dgt "4: ." 2; 39R4879345499276" 3::5" 4903404246" D18; "*Wpk/'KKF" 4245"

RPVGNNGEVWCN'RTQRGTV['TH J VU'

VTCFGO CTMU'

 $Y g"j \ cxg"cr \ r \ r \ dec' \ left \ ''hqt''tgi \ kuxt \ \{."I \ qxgtpo \ gpv'qh'' \ kpf \ kc0'V j \ g"f \ gvcknu''qh''tcf go \ ctmu'' T gi \ kuxt \ \{."I \ qxgtpo \ gpv'qh'' \ kpf \ kc0'V j \ g"f \ gvcknu''qh''tcf go \ ctm'' r \ r \ dec' \ dec' \ left \ gvcknu''qh''tcf go \ ctm'' r \ r \ dec' \ left \ gvcknu''qh'' \ left \ gvcknu'' \ left \ gvcknu''' \ left \ gvcknu'' \ left \ gvcknu''' \ left \ gvcknu'''$

UtO'	Rct dewctu'qh'tj g'b ctm'	Crrnlecvkqp''	Encuu''	Tgi kıxt cvkqp1Cr	Use vsul X enlf ks{ ''
Pq0'		Pq0'		r necvlqp'f cvg''	
3"	Associated Coaters	Q/22256; : 57; '	63"	F gego dgt"4: ." 4245"	Rgpf kpi "
40'	Vj g'y qtf o ctm'õ Cunqek:vgf ''	Q/22256; : 57; '	63"	F gego dgt "4: ."	Rgpf kpi "
	Eqevgt uö"			4245"	

VJ G'FGVCKNU'QHFQO CKP'PCO G'TGI KUVGTGF'QP'VJ G'PCO G'QHVJ G'EQO RCP[<'

Fqo clp'' Pco gu0Pq0'	Fqo clp'IF'''	Tgi knygtgf'KCPC'NF''	Tgi kwt{'Gzrkt{'' Fcvg''
cuuqekcygf eqcv	F2EF698DG: D; 86G76D584C8C3	: 23439"	F gego dgt"36."4246"
gtuOxp"	584F95CD/ K P"		

RGPFIPI 'CRRTQXCNU''

Ut0Pq"	Rct vlewret u''	Uve vwu'	Tglgtgpeg'P wo dgt "
3"	Hcevqt { 'Nlegpeg'*T gi knvgt gf '' Qhhleg+"	Crrnkgf "qp"4508404245"	ECH424598875; "
4"	RCP"	Crrnkgf "qp"4503404245"	P/:: 425; 469462337"
5"	I UV"	Cogpfogpv'lop'qhhleg'cfftguu' cffgf"	"
7"	Hktg'Nkegpug''	11	"
"	D4/8; '**Wpk'' KK G''	Crrnkgf "qp"3503404245"	FP II HN123473: 44534227: 4"
"	D3/79'*Wpk''K\'	Crrnkgf "qp"4: 03404245"	3473: 4453422835"
8"	Rqmwkqp"Nlegpug"	II .	"



"	D3/79"*Wpk!' IK4 "	Crrnkgf "qp"4: 03404245"	67; ; 529"
"	D4/8; '**Wpk/ 'KK {-'	Crrnkgf "qp"4: 08404245"	67; : 678"

O CVGTICN'NIE GPUGUTCRRTQXCNUHQT'Y J IEJ 'VJ G'EQO RCP['KU'[GV'VQ'CRRN[<' "



QWI'I TQWR'EQORCPKGU'

Hwt yi gt."r wtuwcpv'\q"c"tguqnwkqp"qh"qwt"Dqctf "f cvgf "F gego dgt"44."4245"hqt"yi g"r wtr qug"qh"f kuenquwtg"kp"tgrcvkqp"\q"I tqwr "eqo r cp{"kp"eqppgevkqp"y kyi "yi g"Kuwg."c"eqo r cp{"kh"uwej "eqo r cp{"kh"uwej "grdgrqy "o gpvkqpgf "eqpf kkqpu<"/"

c+j g"eqo r cpkgu'y kj "y j kej "j gtg"y gtg"tgrcvgf "r ctv{ "vtcpucevkqpu'*kp"ceeqtf cpeg"y kj "CU/3: \pm "cu'f kuerqugf "kp"j g"Tgurcvgf "Hipcpekcn'Ucvgo gpvu'* δ Tgurcvgf "Hipcpekcn'Ucvgo

kOlwej "eqo r cp{"kp"\gto u"qh"Tgi wxxkqp"4*3+*rr+"qh"vj g"Rtqo qvgt"I tqwr "qh"vj g"Eqo r cp{"kp"\gto u"qh"Tgi wxxkqp"4*3+*rr+"qh"vj g"UGDKKEFT+" Tgi wxxkqpu="cpf"

 $\label{looping} $$k0'y g'Eqorcp{'y cu'gpvgtgf' lpvq'qpg'qt'o qtg''tcpucevlqpu'y ky 'uwej 'eqorcp{'lp''rtgegf kpi 'hkuecn'qt'cwf kv'r gtkqf 'cu''y g''ecug'' o c{''dg''gzeggf kpi ''320'2' ''qh''vqvcn'tgxgpwg''qh''y g'Eqorcp{''cu''r gt''Tguvcvgf''Hkpcpekcn'Uvcvgo gpvu0'' \daggree \d$

Ceeqtf kpi n{ ."dcugf "qp" yi g'r ctco gygtu"qwrkpgf "cdqxg."cu"qp" yi g'f cyg"qh" yi ku"F tchv"Rtqur gewu. "yi gtg"ctg"pq"eqo r cp{"T'gpvkx{" hcmkpi "wpf gt"f ghkpkkqp"qh" UGDK *Kuwg"qh" Ecr kcn" cpf "F kuenquwtg" Tgs wktgo gpvu+"Tgi wcvkqpu."423: "y j kej "ctg" vq"dg" kf gpvkhkgf "cu"i tqwr "eqo r cp{"T'gpvkx{" "oI tqwr "Eqo r cp{"O+O"

"



QVJ GT"TGI WNCVQT['CPF'UVCVWVQT['FKUENQUWTGU'

CWJ QTKV['HQT'VJ G'KUWG''

Kp'rtkpekrıg'Nkmlpi 'Crrtqxcnı''

 $Qwt"Eqo\ r\ cp\{"j\ cu"qdvclpgf\ "lp/r\ tlpelr\ cn"cr\ r\ tqxcn"ltqo\ "vj\ g"UO\ G"Rrcvlqto\ "qh"DUG"Nlo\ kgf\ "lqt"wulpi\ "ku"pco\ g"lp"vj\ ku"F\ tchv"Rtqur\ gewu'r\ wtuwcpv'vq"cp"cr\ r\ tqxcn"lgwgt"f\ cvgf\ "]\ __'ltqo\ "DUG"Nlo\ kgf\ "ku"vj\ g"F\ gulki\ pcvgf\ "UqentGzej\ cpi\ g0'$

RTQJ KOKVKQP'D['UGDKQT'QVJ GT'I QXGTPO GPVCN'CWVJ QTKVKGU''

 $Y g"eqphkto "vj cv''qwt''Eqo r cp{."Rtqo qvgtu."Rtqo qvgt"I tqwr "qt"F ktgevqtu"j cxg"pqv''dggp"r tqj kdkvgf "htqo "ceeguukpi "qt" qr gtcvkpi "kp"vj g"ecr kvcn'o ctngvu''wpf gt"cp{"qtf gt"qt"f ktgevkqp"r cuuyf "d{"UGDK'qt"cp{"qvj gt"tgi wvcvqt{"qt"I qxgtpo gpvcn' Cwj qtkv{0'}}}$

 $P\ gk j\ gt "qwt" Eqo\ r\ cp\{."pqt" Rtqo\ q\ vgt u."pqt" Rtge vqt u"qt" Rtge vq$

 $Pqpg'qh'qwt'Fktgevqtu'ctg'cunqekcvgf'y k j '' j g'ugewtkkgu'o ctngv'cpf'' j gtg' j cu'dggp'pq''cevkqp''cmgp'' d \{ '' j g'UGDK'ci ckpuv'' j g'Fktgevqtu''qt''cpf '' q j gt''gpvk \{ '' y k j '' y j k j '' y j k j '' y j k j '' y k j '' y k j '' y k j '' y j k j '' y k j '' y$

P gksj gt "qwt "Rtqo qvgt u "pqt "Rtqo qvgt "I tqwr . "pqt "cp { "qh "qwt "F ktgevqt u "ku "f genct gf "cu "Hwi kskx g "Geqpqo ke "Qh ngpf gt 0" "

 $P\ gk j\ gt\ ''qwt'' Eqo\ r\ cp\{.''pqt''qwt'' Rtqo\ q\ vgt\ ''\ I\ tqwr\ ''pqt''qwt'' F\ ktge\ vqtu.''ctg''Y\ kthwi'F\ ghcwn gtu''qt'' htcwf\ wgpv''\ dqttqy\ gtu''$

RTQJ KOKVKQP'D['TDK'

P gkj gt"qwt"Eqo r cp{."pqt"Rtqo qvgtu."pqt"Rtqo qvgt"I tqwr."pqt"cp{"qh"qwt"F ktgevqtu"qt"vj g"r gtuqp*tı+"kp"eqpvtqn"qh"qwt" Eqo r cp{"j cxg"dggp"kf gpvkhkgf "cu"c"y kthwif ghcwngt"qt"htcwf wgpv'dqttqy gtu0'd{"vj g"TDKqt"qvj gt"i qxgtpo gpvcn'cwj qtkk{" cpf "vj gtg"j cu"dggp"pq"xkqncvkqp"qh"cp{"ugewtkkgu"ncy "eqo o kwgf "d{"cp{"qh"vj go "kp"vj g"r cuv'cpf "pq"uwej "r tqeggf kpi u"ctg" r gpf kpi "ci ckpuv"cp{"qh"vj go "gzegr v"cu"f gvckni"r tqxkf gf "wpf gt"ej cr vgt"vkngf "õ*Qwuacpf kpi "Nkki cvkqpu'cpf "O cvgt kcn' Fgxgnqr o gp wi*ö'dgi kppkpi "qp"r ci g"376"qh"vj ku"F tchv'Rtqur gewu0'

EQO RNICPEG'Y KVJ 'VJ G'EQO RCP IGU*UN PIHIE CP V'DGP GHIEICN'QY PGTUJ IR+"TWNGU'423: "

Qwt"Eqo r cp{."yj g"Rtqo qygtu"cpf "yj g"o go dgtu"qh"yj g"Rtqo qygt"I tqwr "ctg"kp"eqo r nkcpeg"y kyj "yj g"Eqo r cpkgu"*Uki pkhkecpv" Dgpghkekcn'Qy pgtuj kr +"Twgu."423: "%UDQ"Twguö+."vq"yj g"gzygpv'cr r nkecdng. "cu"qp"yj g"f cyg"qh"yj ku'F tchv'Rtqur gewuu''

FKTGEVQTUCUUQEKCVGF'Y KVJ 'VJ G'UGEWTKVKGU'O CTMGV''

 $Pqpg"qh"qwt"F\ ktgevqtu"ctg"cuuqekcvgf\ "y\ ksj\ "'vj\ g"Ugewtkkgu"O\ ctmgv"kp"cp{"o\ cppgt"cpf\ "pq"cevkqp"j\ cu"dggp"lpkkkcvgf\ "ci\ ckpuv"\ yj\ gug"gpvkkkgu"d{"UGDKcv'cp{"vko\ g0"}}$

GNH HOKNKY['HQT'VJ G'HUUWG''

Qwt"Eqo r cp{"ku"cp"*owprkwgf 'kuwyt ö"*kp"\gto u"qh"\j g"UGDK*KEFT+Tgi wrc\kqpu."423: "cpf "\j ku"Kuwg"ku"cp"*oKpkkc nRwdnke'' Qhtyt ö*"\p"\gto u"qh"\j g"UGDK*KEFT+Tgi wrc\kqpu."423: 0'



Tgi wrc\kqpu."423: ."cu"y g"ctg"cp"Kuwgt"y j qug"r quv"kuwg"r ckf "wr "ecr kcn'uj cm'pqv'dg"o qtg"\j cp" "32"Etqtgu"cpf "y g"o c{" j gpeg."Kuwg"Gs wk\{ "Uj ctgu"\q"\j g"r wdrke"cpf "r tqr qug"\q"rkuv'\j g"uco g"qp"\j g"Uo cm'cpf "O gf kwo "Gp\gtr tkug"Gzej cpi g"\p" \j ku"ecug"dg\pi "\j g"\o G"Rrc\hqto "qh'DUG"Nko kgf \o \op"

Y g'eqphto 'vj cv<'

Ko"ceeqtf cpeg"y kj "Tgi wrckqp"482"qh'y g"UGDK*KEFT+"Tgi wrckqpu."423: ."y ku"Kuuwg"ku"322' "wpf gty tkwgp"cpf "y cv'y g" Ngcf "O cpci gt"q"y g"Kuwg"uj cm'wpf gty tkwg"o kpko wo "37' "qh'y g"vqvcn'kuuwg"uk g0'Hqt"hwty gt"f gvcknu"r gtvckpkpi "vq"uckf" wpf gty tkwpi "r ngcug"tghgt"vq"ej cr vgt"kwrgf "õ*I gpgtcnKphqto cwqp ö*"dgi kppkpi "qp"r ci g"6: "qh'y ku"Ftchv'Rtqur gewu0'

Kô"ceeqtf cpeg"y kj "Tgi wcwkqp"483"qh"y g"UGDK*KEFT+Tgi wcwkqpu."423: ."y g"j gtgd{"eqphkto "yi cv"y g"j cxg"gpygtgf "kpvq" cp"ci tggo gpv"y kj "yi g"Ngcf "O cpci gt"cpf "c"O ctngv"O cngt"vq"gpuwtg"eqo r wnuqt {"O ctngv"O cnkpi "hqt"c"o kpko wo "r gtkqf "qh" yi tgg"{gctu"htqo "yi g"f cvg"qh"hkwkpi "qh"Gs wkx{"Uj ctgu"kp"yi ku"Kuwg"qp"yi g"UO G"Rrcwhqto "qh"DUG"Nko kgf 0'Hqt"hwtyi gt"f gvcknu" qh"yi g"cttcpi go gpv"qhlo ctngv"o cnkpi "r ngcug"tghgt "vq"ej cr vgt "kkngf "õ*I gpgtcnKphqto cwkqp* ö"dgi kppkpi "qp"r ci g"65 "qh"yi ku"F tchv" Rtqur gewwt0"

Ko"ceeqtf cpeg"y kj "Tgi wcvkqp"48: *3+"qh"y g"UGDK*KEFT+"Tgi wcvkqpu."423: ."y g"uj cm"gpuwtg"y cv'y g"vqvcn"pwo dgt"qh" rtqr qugf "cmqwggu"kp"yj g"Kunwg"uj cm"dg"i tgcvgt "yj cp"qt "gs wcn'vq"hkhv{"*72+"qyj gty kug."yj g"gpwktg"cr r necvkqp"o qpg{"y kmidg" tghwpf gf "hqtyj y kjj 0'Ki'uwej "o qpg{"ku"pqv'tgr ckf "y kjj kp"gki j v'y qtmkpi "f c{u"htqo "yj g"f cvg"qwt"Eqo r cp{"dgeqo gu"nkcdng"vq" tgr c{"kv."yj gp"qwt"Eqo r cp{"cpf "gxgt{"qhhkegt "kp"f ghcwnv"uj cm "qp"cpf "htqo "gzr kt{"qhl'gki j v'y qtmkpi "f c{u."dg"nkcdng"vq" tgr c{" uwej "cr r necvkqp"o qpg{."y kj "cp"kpvgtguv"cv"yj g"tcvg"cu"r tguetkdgf "wpf gt"UGDK*KEFT+"Tgi wcvkqpu"423: ."yj g"Eqo r cpkgu" Cev."4235"cpf "cr r necvkqp"u v0'Hwtyj gt. "kp"ceeqtf cpeg"y kj "Ugevkqp"62"qh"yj g"Eqo r cpkgu"Cev."4235."yj g"Eqo r cp{"cpf "gcej" qhhkegt "kp"f ghcwnv'o c{"dg"r wpkuj cdng"y kj "hpg"cpf "Tqt"ko r tkuqpo gpv'kp"uwej "c"ecug0"

Cu"r gt"Tgi wcvkqp"44; *5+"qh" yi g"UGDK *KEFT+"Tgi wcvkqpu."423: ."qwt"Eqo r cp{"ucvkuhkgu" vtcem'tgeqtf "cpf" I"qt"qyi gt" grki kdkkv{ "eqpf kkqpu"qh"UO G"Rrcvhqto "qh"DUG"Nko kgf "kp"ceeqtf cpeg"y kyi "yi g"Tguvcvgf "Hpcpekcn"Ucvgo gpvu."r tgr ctgf "kp" ceeqtf cpeg"y kyi "yi g"UGDKKEFT"Tgi wcvkqpu"cu"dgrqy <"

- 30 Qwt"Eqo r cp{ "y cu"qtki kpcm{ "kpeqtr qtcvgf "cu"÷Cuuqekcvgf "Eqcvgtu"Rtkxcvg"Nko kgf ø'c"r tkxcvg"nko kgf "eqo r cp{ "wpf gt" yi g"Eqo r cpkgu'Cev."4235"y kyj "yi g'Tgi kıntct"qh'Eqo r cpkgu'%õTQEö+:"Mqmcvc"qp"F gego dgt "44."42390"
- 40 Qwt "eqo r cp{" j cu'dggp"hwpf gf "d{ "Kpxgpwt g"Hkpcpeg 'Rtkxcvg'Nko kvgf "y j kej "o cngu'kv'grki kdng'hqt 'Nkuvkpi "qp'DUG'UO G" cu'r gt "yj g"i wkf grkpgu'qh'DUG'UO GO'
- Owt 'Eqor cp{ 'ku'gpi ci gf 'kp' 'yj g'dwukpguu'qh'Rqy f gt 'Eqc kpi 'qh'cnwo kpkwo ''gz vtwukqpu0'
- $60 \quad \text{Vj g'Rckf/wr'Ecr kscn'qh'vj g'Eqo r cp{'ku'' ''; 5022''Ncnj ''eqo r tkukpi ''; .52.222''gs wkw{''uj ctgu0''} }$
- 70 Vj g"Rquv"Kuwg"Rckf "wr "Ecr kxcri"Hceg"Xcnwg+"qh'vj g"eqo r cp { "y km'dg" "356086%"Ncnj "eqo r tkukpi "35.68.622%"Gs wkx{ "Uj ctgu0Uq. "vj g"eqo r cp { "j cu'hwrhkngf "vj g"etksgtkc"qh'Rquv"Kuwg"Rckf "wr "Ecr kxcn'uj cm'pqv'dg"o qtg"vj cp"Vgp"Etqtg0" %Cuuwo kpi "HwnlUwduet kr vkqp"
- Vj g'P gv'y qtyj. "Ecuj "Ceetwcnu"cpf "P gv'Vcpi kdng"Cuuguu"qhl'yj g'Eqo r cp{"cu'r gt"yj g'T guvcvgf "Hkpcpekcn"Ucvgo gpvu"qhl" qwt "Eqo r cp{"hqt"yj g'r gtkqf "gpf gf "qp"Ugr vgo dgt "52."4245"cpf "Hkpcpekcn"[gct "gpf gf "qp"O ctej "53."4245=4244"cpf" 4243"ctg"cu'ugv'hqtyj "dgnqy <""

* 'kp'Nc mj u+''

Rct vlewret u'	Hqt'vjg'rgtkqf'gpfgf'qp''	Hqt 'vj g'hpcpelcn{ gct 'gpf gf 'qp'O ctej '52''		p'O ctej '52''
	Ugr vgo dgt '52.'4245''	4245''	4244''	4243''
P gw qt y "53+"	325072"	92056"	38027"	405: "
Ecuj 'Ceetwcnu''*4+"	7307; "	: 20, 6"	44063"	*2036+"
P gv'Vcpi kdrg'Cuugvu'*5+"	592066"	4; 8026"	423099"	494"

^{*3+&}quot;Pgv'Yqtyj "j cu'dggp"eqo rwxgf "cu''yj g"ci i tgi cvg"qh'gs wkx{"uj ctgu"ecrkxch'cpf "tgugtxgu'*gzenvf kpi "tgxcnwcvkqp"tgugtxgu+" cpf "chgt"f gwevkpi "o kuegncpgqwu'gzrgpf kwtg'pqv'y tkwpp"qhh'kh'cp{0'

Qwt'Eqo r cp{'j cu'hcektkcvgf ''tcf kpi 'kp'f go cv'ugewtkkgu''cpf 'j cu'gpvgtgf 'kpvq''cp''ci tggo gpv'y kj ''dqvj ''yj g'f gr qukqtlgu0' Qwt''Eqo r cp{''j cu''gpvgtgf ''kpvq''cp''ci tggo gpv'y kj ''Egpvtcn'F gr qukct{''Ugtxkegu''Nko kgf ''*EF UN+"f cvgf ''Qevqdgt''33."

^{*4+&}quot;Ecuj "ceetwonu"j cu"dggp"f ghlpgf "cu"vj g"Gctpkpi u"dghqtg"f grtgekcvkqp"cpf "vcz"htqo "qrgtcvkqpu0"

^{*5+}PgvVcpi kdrg'Cuugut'ctg'f ghlpgf "cu'\j g'uwo "qh\qwrl'cuugut'o kpwu'kpvcpi kdrg''cuugut"



 $4245 "cpf" P cvkqpcn" Ugewt kvkgu" F gr qukqt { "Nko kvgf" P UF N+" f cvgf" Qevqdgt" 33." 4245" hqt "f go cvgt kcnk| cvkqp" qh'kvu" Gs wkv{ "Uj ctgu" crtgcf { "kurwgf" cpf" r tqr qugf" vq" dg" kurwgf 0' | cvgt kcnk| cvkqp" qh'kvu" Gs wkv{ "Uj ctgu" crtgcf { "kurwgf" cpf" r tqr qugf" vq" dg" kurwgf 0' | cvgt kcnk| cvkqp" qh'kvu" Gs wkv{ "Uj ctgu" crtgcf | cvgt kcnk| cvkqp" qh'kvu" Gs wkv{ "Uj ctgu" crtgcf | cvgt kcnk| cvkqp" qh'kvu" Gs wkv{ "Uj ctgu" crtgcf | cvgt kcnk| cvkqp" qh'kvu" Gs wkv{ "Uj ctgu" crtgcf | cvgt kcnk| cvkqp" qh'kvu" Gs wkv{ "Uj ctgu" crtgcf | cvgt kcnk| cvkqp" qh'kvu" Gs wkv{ "Uj ctgu" crtgcf | cvgt kcnk| cvkqp" qh'kvu" Gs wkv{ "Uj ctgu" crtgcf | cvgt kcnk| cvkqp" qh'kvu" Gs wkv{ "Uj ctgu" crtgcf | cvgt kcnk| cvkqp" qh'kvu" Gs wkv{ "Uj ctgu" crtgcf | cvgt kcnk| cvkqp" qh'kvu" Gs wkv{ "Uj ctgu" crtgcf | cvgt kcnk| cvkqp" qh'kvu" Gs wkv{ "Uj ctgu" crtgcf | cvgt kcnk| cvkqp" qh'kvu" Gs wkv{ "Uj ctgu" crtgcf | cvgt kcnk| cvkqp" qh'kvu" Gs wkv{ "Uj ctgu" crtgcf | cvgt kcnk| cvkqp" qh'kvu" Gs wkv{ "Uj ctgu" crtgcf | cvgt kcnk| cvkqp" qh'kvu" crtgcf | cvgt kcnk| cvkqp"$

- $: 0 \quad \mbox{ Vj g'Eqo r cp{'j cu'pqv'dggp'tghgttgf' 'vq'Dqctf'hqt'Kpf wwtkcn'cpf''Hpcpekcn'Tgeqpuvtwevkqp0'} \\$
- ; 0 Qwt'Eqo r cp{'j cu'pqv'dggp'tghgttgf 'vq'vj g'P cvlqpcn'Eqo r cp{'Ncy 'Vtldwpcn'*P ENV+'wpf gt'lfpuqnxgpe{'cpf 'Dcpmtwr ve{'' Eqf g."42380''
- 320 Pqpg"qh"yi g"F ktgevqtu"qh"qwt"Eqo r cp{"j cxg"dggp"ecvgi qtk| gf "cu"c"Y kthwrlF ghcwngt"qt"htcwf wrgpv"dqttqy gtu0'
- 330 Vj gtg"ku"pq"y kpf kpi "wr "r gykkqp"ci ckpuv"yj g"Eqo r cp{."y j kej "j cu"dggp"cf o kwgf "d{"c"eqwtv"qh"eqo r gygpv"lwtkuf keykqp" qt "rks wkf cvqt "j cu"pqv"dggp"cr r qkpygf 0'
- 340 Pq"o cvgtkcntgi wacvqt{"qt"f kuckr nkpct{"cevkqp"j cu"dggp"vcmgp"d{"cp{"uvqem'gzej cpi g"qt"tgi wacvqt{"cwj qtkk{"kp"yj g"r cuv" yj tgg"{gctu"ci ckpuv"yj g"Eqo r cp{0"
- 350 Vj gtg"j cu'dggp"pq"ej cpi g"kp"yj g"rtqo qvgt*u+"qh"vj g"Eqo rcp{"kp"yj g"qpg"{gct"rtgegf kpi "vj g"f cvg"qh"hkrkpi "crrnkecvkqp" vq"DUG"hqt"nkvkpi "qp"UO G"Rrcvhqto "qh"DUG"Nko kgf 0"
- 360 Vj g'Eqorcp{'j cu'c'y gdukg'y y y 0cuuqekcygf eqcygtu04p''
- 370 Y g'hwty gt "eqphkto "y cv'y g"uj cm'dg"eqo r n{ kpi "y kaj "cm'qy gt "tgs wktgo gpvu"cu"rckf "f qy p'hqt "uwej "Kuweg"wpf gt "Ej cr vgt" KZ "qh"UGDK*REFT+"Tgi wrcvkqpu."cu"co gpf gf "htqo "vko g"vq"vko g"cpf "uwdugs wgpv"ektewrctu"cpf "i wkf grkpgu"kuwegf "d{" UGDKcpf "y g"Uvqem'Gzej cpi g0' "
- 380 Y g'hwtyj gt'eqphto "vj cv'y g'eqo r n('y kij "cm'vj g'cdqxg'tgs wktgo gpw'Teqpf kklqpu'vq'cu'vq'dg'grki kdrg'vq'dg'hkrvgf "qp'vj g"
 UO G'Rrevhqto "qh'DUG"Nko kgf 0'

EQO RNICPEG'Y KVJ 'RCTV'C'QH'UEJ GF WNG'XKQH'VJ G'UGDK#EFT+'TGI WNCVKQPU'423: "

Qwt"Eqorcp{"ku"kp"eqornkcpeg"y knj "njg"rtqxkukqpu"urgekhkgf"kp"Rctv"C"qh"Uejgfwrg"XKqh"njg"UGDK*KEFT+Tgiwcvkqpu." 423:01Pq"gzgorvkqp"htqo"grkikdknkn{"pqtou"jcu"dggp"uqwijv'wpfgt"Tgiwcvkqp"522"qh'njg"UGDK*KEFT+Tgiwcvkqpu."423:." y knj"tgurgev'nq'njg"Kuuwg0'

FRENCHO GT'ENCWUG'QH'UGDK'

W'NU'VQ'DG'FNUNPEVN['WPFGTUVQQF'VJ CV'UWDO NUNQP'QHFTCHV'RTQURGEVWU'VQ'UGEWTN'NGU'CPF'GZEJ CPI G'DQCTF'QH'NFFK'"UGDK'UJ QWNF'PQV'NF'CP['Y C['DG'FGGO GF'QT'EQPUVTWGF"VJ CV"VJ G"UCO G"J CU"DGGP"ENGCTGF"QT"CRRTQXGF"D["UGDN'UGDK'FQGU'PQV"VCMG"CP["TGURQPUNDNNN['GNJ GT'HQT'VJ G'HNPCPENCN'UQWPFPGUUQH'CP['UEJ GO G'QT'VJ G'RTQLGEV'HQT"YJ NEJ 'VJ G'NUWG'N'RTQRQUGF'VQ'DG'O CFG'QT'HQT"VJ G'EQTTGEVPGUU'QH'VJ G'UVCVGO GPVU'O CFG'QT"QRNP'NP'U'GZRTGUUGF"NP'VJ G'FTCHV'RTQURGEVWU'VJ G'NGCF'O GTEJ CPV"DCPMGT."ITGVGZ'EQTRQTCVG'UGTXNEGUNNO NVGF'J CU'EGTVNHNGF'VJ CV'VJ G'FNLENQUWTGU'O CFG'NP'VJ G'FTCHV'RTQURGEVWU'CTG'I GPGTCNN['CFGS WCVG'CPF'CTG'NP'EQPHQTO NV['Y NVJ 'UGDN'NUWG'QH'ECRNVCN'CPF'FNLENQUWTG'TGS WNTGO GPVU+TGI WNCVNQPU'423: 'NP'HQTEG'HQT'VJ G'VNO G'DGNPI O'VJ NU'TGS WNTGO GPV"NU'VQ"HCENNNCVG"NPXGUVQTU'VQ"VCMG"CP"NPHQTO GF"FGENUNQP"HQT"O CMNPI 'CP'NPXGUVO GPV'NP'VJ G'RTQRQUGF'NUWGO"

KI"UJ QWNF "CNUQ"DG"ENGCTN["WPFGTUVQQF"VJ CV"Y J KNG"VJ G"EQO RCP["CTG"RTKO CTKN["TGURQPUNDNG" HQT" VJ G"EQTTGEVPGUU" CFGS WCE["CPF" FILENQUWTG" QH' CNN" TGNGXCPV" WPHQTO CVIQP "RP"VJ G"FTCHV"RTQURGEVWU"VJ G"NGCF"O GTEJ CPV"DCPMGT"KU "GZRGEVGF"VQ" GZGTEKUG'F WG"FKNK GPEG"VQ"GPUWTG"VJ CV"VJ G"EQO RCP['FKUEJ CTI GU"KVUTGURQPUNDKNK/["CFGS WCVGN['TR"VJ KU"DGJ CNH"CPF"VQY CTFU"VJ KU"RWTRQUG."VJ G"NGCF"O GTEJ CPV"DCPMGT." I TGVGZ" EQTRQTCVG" UGTXKEGU" NKO KVGF" J CXG" HWTPKUJ GF" VQ" UGDK" C" FWG" FKNK GPEG" EGTVKHKECVGFCVGF"] _"U"

VJ G'HKNPI 'QH'VJ G'FTCHV'RTQURGEVWUFQGUPQV.'J QY GXGT.'CDUQNXG'QWT'EQO RCP['HIQO '' CP['NKCDKNKVKGUWPFGT'VJ G'EQO RCPKGUCEV.'4235'QT'HIQO 'VJ G'TGS WKTGO GPV'QH'QDVCPPPI '' UWEJ 'UVCVWQT['CPF'QVJ GT'ENGCTCPEGU'CU'O C['DG'TGS WKTGF'HQT'VJ G'RWTRQUG'QH'VJ G'' RTQRQUGF'KUWGUUGDKHWTVJ GT'TGUGTXGUVJ G'TK J V'VQ'VCMG'WR'CV'CP['RQPV'QHVKO G.'Y KVJ '' VJ G'NGCF'O CPCI GT'CP['KTTGI WNCTKVKGU'QT'NCRUGU'P'VJ G'FTCHV'RTQURGEVWU''

"



Pqvg<'

Vj g"hkrkpi "qh'yj ku"Ftchv"Rtqur gewu"fqgu"pqv."jqy gxgt."cduqnxg"qwt"Eqorcp{"htqo"cp{"htqo"cp{"htcdkrkkgu"wpfgt"ugevkqpu"56."57"cpf" 58*3+"qh" yi g"Eqo r cpkgu" Cev." 4235" qt" htqo "yi g" tgs wktgo gpv'qh" qdvckpkpi "uwej "uvcwwqt { "cpf" qyi gt" ergctcpegu" cu"o c { "dg" tgs wktgf 'hqt''y g'r wtr qug'qh'yj g'r tqr qugf 'KnuwgOUGDKhwtyj gt'tgugtxgu'\yj g'tki j v'\q'\cmg''wr 'cv'cp{ 'r qlpv'qh'vko g.'y kyj 'yj g'Ngcf'' O cpci gt 'cp{ 'ktgi wrctkkgu'qt 'rcr ugu'kp' vj ku'F tchv'Rtqur gewu0'''

Cm'ngi cn'tgs wktgo gpvu'r gtvckpkpi "vq"vj g"Kuuwg"y km'dg"eqo r nkgf "y ky "cv'vj g"vko g"qh'tgi kuvtcvkqp"qh'vj g"Rtqur gewwu'y kyj "vj g" Tgi kıxtct "qh"Eqo r cpkgu. "Mqmcvc 'kp" 'ygto u"qh" Ugevkqp" 48 "cpf "54" qh" 'y g" Eqo r cpkgu 'Cev." 42350'

FNENCHO GT'UVCVGO GPV'HTQO 'QWT'EQO RCP['CPF'VJ G'NGCF'O CPCI GT"

Qwt"Eqo r cp{"cpf" 'y g"Ngcf" O cpci gt"ceegr v'pq" tgur qpuklkrk{"hqt"uxcvgo gpvu" o cf g"qyi gty kug" y cp" y qug" eqpvckpgf "kp" y ku" $Ftch ''Rtqurgewu''qt. ''kp"ecug"qh''y g"Eqorcp\{.''kp"cp\{''cfxgtvkugogpw''qt"cp\{''qy'gt"ocvgtkcn''kuwgf"'d\{''qt''cv''kpuvcpeg''qh''qwt''' properties and the second of th$ Eqorcp{"cpf"cp{qpg"r melipi "tgrkepeg"qp"cp{"qyi gt"uqwteg"qh"liphqtockqp."kpenwf kpi "qwt"y gduksg"y y y (buuqekevgf eqevgtuOp" y qwrf "dg"f qkpi "uq"cv"j ku"qt "j gt "qy p"tkum0"

Vj g"Ngcf "O cpci gt"'vq"'yj g"Kuuwg"ceegr vu"pq"tgur qpukdkrkv{."ucxg"vq"yj g"rko kxgf "gzvgpv'cu"r tqxkf gf "kp"'yj g"Kuuwg"Ci tggo gpv' gpvgtgf "dgwy ggp" y g"Ngcf "O cpci gt" vq" y g"Kuwg" cpf "qwt" Eqo r cp{"qp"F gego dgt" 45." 4245 cpf "y g"Wpf gty tkkpi "Ci tggo gpv" f cvgf "F gego dgt "45."4245"gpvgtgf "kpvq"dgvy ggp" yj g"Wpf gty tkvgtu"cpf "qwt"Eqo r cp { "cpf "yj g"O ctngv"O cmkpi "Ci tggo gpv" f cvgf "F gego dgt "45." 4245 'gpvgtgf 'lpvq" co qpi "vj g"O ctmgv" O cmgt "cpf "qwt "Eqo r cp{0"

 $\label{lem:control_c$ reti g"cpf "pq"ugrgevkxg"qt"cf f kklqpcn'llphqto cvkqp"y qwrf "dg"cxckrcdrg"hqt"c"ugevkqp"qh'\j g'lpxguvqtu'lp'cp{ "o cppgt"y j cwqgxgt" kpenwf kpi "cvtqcf" 'uj qy "r tgugpvcvkqpu. "kp" tgugctej "qt" 'ucrgu'tgr qtvu. "cv" eqnrgevkqp" egpvtgu" qt "gnugy j gtg0"

Vj g'Ngcf "O cpci gt 'vq 'vj g'Knuwg'cpf 'vj gkt 'tgur gevkxg''cunqekcvgu'cpf "chhkrkcvgu'o c{ "gpi ci g'kp' 'tcpucevkqpu'y kyj ."cpf 'r gthqto " $ugtxkegu"hqt."qwt"Eqo\ r\ cp\{."qwt"Rtqo\ qvgt"I\ tqwr."qt"qwt"chhkrkevgu"qt"cuuqekevgu"kp"vj\ g"qtf\ kpct\{"eqwtug"qh"legu"qt"cuuqekevgu"kp"vj\ g"qtf\ kpct\{"eqwtug"qh"legu"qt"legu"q$ dwukpguu'cpf 'j cxg'gpi ci gf. 'qt'o c{ 'kp'hwwtg'gpi ci g. 'kp'eqo o gtekcn'dcpmkpi 'cpf 'kpxguvo gpv'dcpmkpi 'tcpucevkqpu'y kj 'qwt' hwwtg'tgegkxg'eqo r gpuckqp0'

ECWKQP"

Kpxguvqtu'y j q"crrn{"kp"vjg"Knuwg'y km'dg"tgs wktgf "vq"eqphkto "cpf"y km'dg"fggo gf "vq"jcxg"tgrtgugpvgf "vq"qwt"Eqorcp{"cpf" yj g"Wpf gty tkigtu"cpf "vj gkt"tgur gevkxg"f ktgevqtu."qhhkegtu."ci gpvu."chhkhcvgu"cpf "tgr tgugpvcvkxgu"vj cv'vj g{ "ctg"gnki kdng"wpf gt" $cm' cr r \textit{hecd} \textit{rg'} \textit{hey u.'twrgu.'tgi wrevleqpu.'i wkf grlpgu' cpf'' cr r tqxcnu' q'' ces wktg'' Gs wkv \{'Uj ctgu' qh' qwt' Eqor cp \{'' cpf'' y km' pqv' Qh' ngt.'' ces wktg'' Gs wkv \{''Uj ctgu' qh' qwt' Eqor cp \{'' cpf'' y km' pqv' Qh' ngt.'' ces wktg'' Gs wkv \{''Uj ctgu' qh' qwt' Eqor cp \{'' cpf'' y km' pqv' Qh' ngt.'' ces wktg'' Gs wkv \{''Uj ctgu' qh' qwt' Eqor cp \{'' cpf'' y km' pqv' Qh' ngt.'' ces wktg'' Gs wkv \{''Uj ctgu' qh' qwt' Eqor cp \{'' cpf'' y km' pqv' Qh' ngt.'' ces wktg'' Gs wkv \{''Uj ctgu' qh' qwt' Eqor cp \{'' cpf'' y km' pqv' Qh' ngt.'' ces wktg'' Gs wkv \{''Uj ctgu' qh' qwt' Eqor cp \{'' cpf'' y km' pqv' Qh' ngt.'' ces wktg'' Gs wkv \{''Uj ctgu' qh' qwt' Eqor cp \{'' cpf'' y km' pqv' Qh' ngt.'' ces wktg'' Gs wkv \{''Uj ctgu' qh' qwt' Eqor cp \{'' cpf'' y km' pqv' Qh' ngt.'' ces wktg'' Gs wkv \{''Uj ctgu' qh' qwt' Eqor cp \{'' cpf'' y km' pqv' Qh' ngt.'' ces wktg'' Gs wkv \{''Uj ctgu' qh' qwt' Eqor cp \{'' cpf'' y km' pqv' Qh' ngt.'' ces wktg'' Cs wkv \{'' cpf'' y km' pqv' Qh' ngt.'' ces wktg'' Cs wkv \{'' cpf'' y km' pqv' Qh' ngt.'' ces wktg'' ces wktg'' Cs wkv \{'' cpf'' y km' pqv' Qh' ngt.'' ces wktg'' ces wktg'' Cs wkv \{'' cpf'' y km' pqv' Qh' ngt.'' ces wktg'' ces wktg'' ces wktg'' Cs wkv \{'' cpf'' y km' pqv' qh' ngt.'' ces wktg'' ces wktg'$ $ugm"r\, rgf\, i\, g"qt" \ 'tcpuhgt" \ 'j\, g"Gs\, wks \{ \ ''Uj\, ctgu"qh"qwt" Eqo\, r\, cp \{ \ ''vq"cp \{ \ ''r\, gtuqp"y\, j\, q"ku"pqv"grki\, kdrg" \ 'wpf\, gt \ ''cr\, r\, rkecdrg" rcy\, u. \ ''twrgu. \ ''vq"cp \{ \ ''vq"cp \{ \ ''vq"cp \{ \ ''vq"cp \{ \ ''vq"cp \} \ ''vq"cp \} \ ''vq"cp \} \}$ tgi wuc\kqpu."i wkf grkpgu"cpf "crrtqxcnu"\q"ces wktg"Gs wkx{ "Uj ctgu"qh"qwt"Eqorcp{0Qwt"Eqorcp{."\j g"Wpfgtytksgtu"cpf "\j gkt" $tgur\ gevkxg"f\ ktgevqtu."qhhlegtu."ci\ gpvu."chhlevgu"cpf\ "tgr\ tgugpvcvkxgu"ceegr\ v'pq"tgur\ qpukdkrkv{\ "qt"rkcdkrkv{\ "hqt"cf\ x kukpi\ "cp{\ "}}}$ kpxgurqt"qp"y j gvj gt"uwej "kpxgurqt"ku"grki kdrg"vq"ces wktg"vj g"Gs wkx{ "Uj ctgu"kp"vj g"Knuwg0"

RTIEG'IP HQTO CVIQP "CPF"VJ G"VTCEMTGEQTF"QH"VJ G"RCUV"IUWGU'J CPFNGF"D["VJ G"NGCF" O CPCI GT"

Hqt"f gvcknu'tgi ctf kpi "vj g"r tkeg"kphqto cvkqp"cpf "vtcem'tgeqtf "qh'vj g"r cuv'knuwg"j cpf rgf "d{"O lu01 tgvgz "Eqtr qtcvg"Ugtxkegu" Nko ksgf ."cu"ur gekhkgf "kp"Ektewrct"tghgtgpeg"EKT IEHF IF KN19 14237"f cvgf "Qevqdgt"52."4237"kuwsgf "d{"UGDK"r ngcug"tghgt" $Cppgz\,wtg'C''q''j\,\,ku'F\,tch'Rtqur\,gewu'cpf''j\,g''y\,gdukg''qh''j\,g''Ngcf''O\,cpci\,gt''cv'y\,y\,y\,0\,tgvgzeqtr\,qtcvg0eqo\,0''$

FRENCHO GT'HP'TGURGEV'QHLWTRUFHEVKQP''

Vj ku"Kuwg"ku'dgkpi "o cf g"kp"Kpf kc"vq"r gtuqpu'tgukf gpv"kp"Kpf kc"*kpenvf kpi "Kpf kcp"pcvkqpcnu'tgukf gpv"kp"Kpf kc"y j q"ctg"o clqtu." J WHu."eqo r cpkgu."eqtr qtcvg"dqf kgu"cpf "uqekgvkgu"tgi kuvgtgf "wpf gt"cr r necdrg"ncy u"kp"Kpf kc"cpf "cwj qtkl gf "vq"kpxguv"kp" uj ctgu. "Kof kcp"o www.rhwpf u'tgi kngtgf 'y kj "UGDK"Kof kcp"hlpcpekcnlkpurkwwkqpu. "eqo o gtekcnldcpmu."tgi kngtgf 'y kj "UGDK"Kof kcp"hlpcpekcnlkpurkwwkqpu. "eqo o gtekcnldcpmu."tgi kngtgf 'y kj "UGDK"Kof kcp"hlpcpekcnlkpurkwwkqpu. qrgtcvkxg"dcpmu"*uwdlgev'vq"TDK'rgto kuukqp+"qt"vtwuvu"wpfgt"crrnkecdng"vtwuv'ncy "cpf"yjq"ctg"cwjqtk|gf"wpfgt"vjgkt" eqpurkswkqp"'q"j qnf "cpf "kpxguv'kp"'uj ctgu."r wdnke"hkpcpekcn'kpurkswkqpu"cu"'ur gekhlgf "kp"Ugevkqp"4*94+"qh''yj g"Eqo r cpkgu"Cev." 4235. "CKHu'uvcvg"kpf wuxtkcn'f gxgnqr o gpv'eqtr qtcvkqpu. "kpuwtcpeg"eqo r cpkgu'tgi kuvgtgf "y kij "vj g"Kpuwtcpeg'Tgi wncvqt { "cpf " $F gxgmr o gpv'Cwj qtkx {."r tqxkf gpv'hwpf u"*uwdlgev'vq"cr r necdng"ncy +"y kj "c"o kpko wo "eqtr wu"qh" "4.722022"Ncmj u"cpf "eqtr wu"qh" "eqtr$ r gpukqp"hwpf u"y ksj "c"o kpko wo "eqtr wu"qh" "4.722022"Ncmj u."cpf "r gto kwgf "pqp/tgukf gpwi"kpenwf kpi "HKKu."Grki kdrg"P T Ku." o wnkrevgten'epf "dkrevgten'f gxgrqr o gpv'hkpepeken'kpurkwrkqpu. "HXE Ku'epf "grki kdrg" hqtgki p'kpxgurqtu. "kpurkepeg'hwpf u'ugv'wr " cpf 'o cpci gf 'd{ "cto {."pcx{"qt"ckt 'hqteg"qh''y g"Wpkqp"qh'Kpf kc"cpf 'hpuwtcpeg'hwpf u'ugv'wr "cpf 'o cpci gf "d{ "'y g"F gr ctvo gpv' qh"Rquvu."Kpf kc"r tqxkf gf "vj cv'vj g{"ctg"grki kdrg"wpf gt"cm'cr r rkeedrg"rcy u"cpf "tgi wrcvkqpu"vq"j qrf "Gs wkx{"Uj ctgu"qh"qwt"



 $\label{thm:continuous} \begin{tabular}{l} Eqo\ r\ cp \{0'Vj\ g"F\ tch''Rtqur\ gewu''f\ qgu''pqv."j\ qy\ gxgt."eqpuwlwwg"cp"kpxkcvkqp"vq"r\ wtej\ cug"uj\ ctgu"qlhgtgf"j\ gtgd{"kp"cp{"lpvku'vp"vq"y\ j\ qo\ "kv'ku''wpncy\ hwn'vq"o\ cng"cp"qlhgt"qt"kpxkcvkqp"kp'uwej\ "lwtkuf\ kevkqp0'Cp{"r\ gtuqp"kpvq"y\ j\ qug'r\ quuguukqp"vj\ ku'F\ tchv'Rtqur\ gewu''eqo\ gu''ku''tgs\ wktgf "vq"kphqto\ "j\ ko\ "qt"j\ gtugrh'cdqw."cpf "vq"qdugtxg."cp{"uwej\ "tguvtkevkqpu0'''} uwej\ "tguvtkevkqpu0''' \end{tabular}$

Cp{"f kur wg"ct kukpi "qwi'qhi'y ku'Kuuwg"y kmi'dg"uwdl gev'vq"lwt kuf kevkqp"qhi'y g"eqor gwgpv'eqwt v*u+'kp"Mqmcvc."Y guv'Dgpicn"Kpf kc"qpn(0'

P q"cevlqp"j cu"dggp."qt"y kni'dg."vcmpp"vq"r gto kv'c"r wdrke"Kuwkpi "kp"cp{"lwtkuf kevlqp"y j gtg"cevlqp"y qwf "dg"tgs wktgf "hqt"vj cv" r wtr qug. "gzegr v'vj cv'y ku"F tchv"Rtqur gewu"j cu"dggp"lkrgf "cv"UO G"Rrcvhqto "qh"DUG"Nko kgf "hqt"kuu"qdugtxcvlqpu"cpf "DUG" y kni'i kxg"kuu"qdugtxcvlqpu"kp"f wg"eqwtug0'Ceeqtf kpi n{ ." vj g"Gs wkv{"Uj ctgu"tgr tgugpvgf "j gtgd{"o c{"pqv'dg"Kuwgf"qt"uqnf." f ktgevn{"qt"kpf ktgevn{ ." cpf "vj ku"F tchv'Rtqur gewu"o c{"pqv'dg"f kntkdwgf "kp"cp{"lwtkuf kevlqp."gzegr v'kp"ceeqtf cpeg"y kyj "vj g" rgi cntlgs wktgo gpwi'cr r rkecdrg"kp'uwej "lwtuf kevlqp0P gkej gt"yj g"f grkxgt { 'qh'vj ku'F tchv'Rtqur gewu"pqt"cp{"ucrg"j gtgwf gt"tj cm" wpf gt"cp{"ektewo uvcpegu."etgcvg"cp{"ko r rkecvlqp"vj cv'vj gtg'j cu'dggp"pq"ej cpi g"kp'vj g"chtcktu'qh'qwt"Eqo r cp{"htqo "vj g"f cvg" j gtgqh'qt"vj cv'vj g'kphqto cvkqp"eqpvckpgf "j gtgkp'ku"eqttgev'cu'qh'cp{"vko g"uwdugs wgpv'vq"yj ku'f cvg0'

Vj g'Gs wkx{"Uj ctgu'j cxg"pqv'dggp."cpf "y kni'pqv'dg."tgi knygtgf ."rkuvgf "qt"qvj gty kug"s wcrkhkgf "kp"cp{"qvj gt"lwtkuf kevkqp"qwwlf g" kpf kc"cpf "o c{"pqv'dg"qhhgtgf "qt"uqrf ."cpf "cr r n'ecvkqpu"o c{"pqv'dg"o cf g"d{"r gtuqpu"kp"cp{"uwej "lwtkuf kevkqp."gzegr v'kp" eqo r n'cpeg'y kyj "vj g"cr r n'ecdng'ncy u'qh'uwej "lwtkuf kevkqp0"

Hwt j gt. "gcej "cr r rlecpv"y j gtg"tgs wktgf "ci tggu"tj cv"uwej "cr r rlecpv"y kni'pqv"ugni'qt "tcpulgt"cp{ "Gs wkx{ "Uj ctgu"qt"etgcvg"cp{ "geqpqo ke"kpvgtguv"tj gtgkp. "kpenwf kpi "cp{ "qhh'uj qtg"f gtkxcvkxg"kpuvtwo gpvu. "uwej "cu"r ctvkekr cvqt { "pqvgu. "kuuwgf "ci ckpuv"tj g" Gs wkx{ "Uj ctgu"qt"cp{ "uko krct "ugewtkx{ ."qvj gt"y cp"r wtuvcpv"vq"cp"gzgo r vkqp"htqo ."qt"kp"c"vtcpucevkqp"pqv"uwdlgev"vq."vj g" tgi kuvtcvkqp'tgs wktgo gpwi'qh'tj g"Ugewtkkgu'Cev'cpf "kp"eqo r rkcpeg"y ktj "cr r rlecdrg"rcy u. "rgi kurcvkqpu"cpf "F tchv'Rtqur gewwi'kp" gcej "lwtkuf kevkqp. "kpenwf kpi "Kpf kc0"

FILENCIO GT'ENCWUG'QH'VJ G'UO G'RNCVHQTO 'QH'DUG'NIO IVGF''

DUG"Nko ksgf ""õDUGö+"j cu''xkf g''kui'ngwgt "f cvgf"] _'i kxgp"r gto kuukqp"vq"õCuuqekcvgf "Eqcvgtu''Nko ksgf ö''vq''wug''kui'pco g'kp"yj g" Qhtgt "F qewo gpv'' cu'' yj g" Uvqemi Gzej cpi g" qp" yj qug" Uo cmi' cpf "O gf kwo "Gpvgtr tkugu" Rrcvhqto "*õUO G" Rrcvhqto ö+" yj g" Eqo r cp{øu''ugewtkkgu''ctg''r tqr qugf "vq''dg''rkuvgf 0'DUG''j cu''uetwkpkj gf "yj ku''qhtgt "f qewo gpv'hqt "kuu'rko ksgf "kpvgtpcni'r wtr qug''qh" f gekf kpi "qp"yj g"o cwgt "qh'i tcpvkpi "yj g''chqtguckf "r gto kuukqp"vq"yj g'Eqo r cp{0'DUG''f qgu''pqv'kp"cp{"o cppgt<"

- \mbox{M}' y cttcpv."egt \mbd{M} '\qt"gpf qtug"\gi g"eqttge\mbguu'\qt"eqo r ng\mbd{g}gguu'\qh'\cp{\{"qh'\gi} g"eqp\mbd{g}p\mbd{w}'\qh'\gi ku'\qh\ngt''f qewo gp\mbd{w} gp\mbd{w}''\qt" \mbd{m} '\mbd{m} '\mbd{m}
- któ' y cttcpv'ý cv'ý ku"Eqo r cp{øu"ugewtkskgu"y kni'dg"nkungf "qp"eqo r ngvkqp"qh"KpkskcniRwdnke"Qthgtkpi "qt"y kni'eqpvkpwg"vq"dg" nkungf "qp"DUG="qt"
- kkló' vcng"cp{"tgurqpuklkkk{"hqt"vjg"hkpcpekcn'qt"qvjgt"uqwpfpguu"qh'vjku"Eqorcp{."kxu"Rtqoqvgtu."kxu"ocpcigogpv'qt"cp{"uejgog"qt"rtqlgev'qh'vjku'Eqorcp{0'
- kó" y cttcpv."egt kkl. "qt"gpf qtug" y g"xcnkf kk{."eqttgevpguu"qt"tgcuqpcdngpguu"qh" y g"r tleg"cv" y j lej "y g"Gs wkk{"Uj ctgu"ctg" qhhgtgf "d{" y g"Eqo r cp{"cpf "kpxguvqtu"ctg"kphqto gf "q"vcng" y gf gelukqp" y lpxguvkp" y g"Gs wkk{"Uj ctgu"qh" y g"Eqo r cp{" qpn{"chngt"o cmkpi "y gkt"qy p"kpf gr gpf gpv"gps wktkgu. "kpxguvki cvkqp"cpf "cpcn{uku0"Vj g"r tleg"cv"y j lej "y g"Gs wkk{"Uj ctgu" ctg"qhhgtgf "d{" y g"Eqo r cp{"ku"f gvgto kpgf "d{" y g"Eqo r cp{"kp"eqpuwncvkqp"y ky "y g"O gtej cpv"Dcpngt" y g"Kunwg"cpf" y g"Gzej cpi g"j cu"pq"tqrg" y" r re{"kp"y g"uco g"cpf "kv"hj qwrf "pqv"hqt"cp{"tgcuqp"dg"f ggo gf "qt"eqpuvtwgf "y cv"y g"eqpvgpw" qh"y ku"qhhgt"f qewo gpv"j cxg"dggp"ergctgf "qt"crrtqxgf"d{"DUGO'Gxgt{"r gtuqp"y j q"f guktgu" y crrn{"hqt"qt"qy gty kug" ces wktg"cp{"ugewtkkgu"qh"y ku"Eqo r cp{"f q"uq"r wtuwcpv"yq"kpf gr gpf gpv"kps wkt{."kpxguvki cvkqp"cpf"cpcn{uku"cpf" uj cm"pqv"j cxg"cp{"eræko "ci ckpuv"DUG"y j cwqgxgt"d{"tgcuqp"qh"cp{"rquu"y j lej "o c{"dg"uwhlgtgf"d{"uwej "r gtuqp" eqpugs wgpv"yq"qt"kp"eqppgevkqp"y ky "uwej "uwduetkr kqp"Tces wkukkqp"y j gyj gt"d{"tgcuqp"qh"cp{yi kpi "uvcyf"qt"qo kwgf"yq" dg"uvcygf"j gtgkp"qt"hqt"cp{"qyj gt "tgcuqp"y j cwqgxgt0"
- x0' DUG"f qgu"pqv"lp"cp{"o cppgt"dg"hcdng"hqt"cp{"f ktgev."lpf ktgev."leqpugs wgpvkcn'qt"qyi gt "nquugu"qt"f co ci gu"lpenwf kpi "nquu" qh"r tqhku:"kpewttgf "d{"cp{"kpxguvqt"qt"cp{"yi ktf"r ctv("yi cv'o c{"ctkug"htqo "cp{"tgnkcpeg"qp"yi ku"qhhgt"f qewo gpv'qt"hqt" yi g"tgnkcdknk{."ceewtce{."eqo r ngvgpguu."vtwyi hwpguu!'qt"ko gnhpguu!'yi gtgqhf)'
- xloʻ Vj gʻ'Eqo r cp{'j cu'ej qugp''vj gʻ'UO Gʻ'Rrcvhqto "qp'lku'qy p'lkpkkcvkxgʻ'cpf 'ku'qy p'tkım''cpf ''ku'tgur qpuklng''hqt ''eqo r n{ kpi "y kij ''nqecn'ncy u.''twrgu.'tgi wrcvlqt{''qt'tgi wrcvlqt{''tgs wktgo gpvu'uvkr wrcvgf ''d{''DUG''I'qvj gt'tgi wrcvlqt{''cwj qtk{0'Cp{''wug''qh''vj g''UO G''Rrcvhqto "cpf "vj g''tgrcvgf "ugtxkegu''ctg''uwdlgev'vq''Kpf kcp''rcy u''cpf ''eqwt u''gzenwukxgn('' ukwcvgf ''kp''O wo dcko''



FRENCHO GT'ENCWUG'VPFGT'TWNG'366C'QH'VJG'WUUUGEWTKYKGU'CEV''

Vj g'Gs wkx{"Uj ctgu"j cxg"pqv'dggp."cpf "y knipqv'dg."tgi kngtgf "wpf gt"yj g"WUUUgewtkkgu"Cev'3; 55."cu"co gpf gf "*vj g"SUgewtkkgu"Cev\$+"qt"cp{"uvcvg"ugewtkkgu"rcy u"kp"vj g"Wpkgf "Uvcvgu"cpf "o c{"pqv'dg"Kuuvgf "qt"uqnf "y kyj kp"vj g"Wpkgf "Uvcvgu"qt"vq."qt"hqt" yj g"ceeqwpv'qt"dgpghkv'qh "\$WUU'r gtuqpu\$"*cu"f ghkpgf "kp"Tgi wcvkqp"U'wpf gt"vj g"Ugewtkkgu"Cev+:"gzegr v'r wtuvcpv'vq"cp" gzgo r vkqp"htqo ."qt"kp"c"vtcpucevkqp"pqv'uvdlgev'vq."vj g"tgi kntcvkqp"tgs wktgo gpwu"qh"vj g"Ugewtkkgu"Cev0'Ceeqtf kpi n{ ."vj g" Gs wkx{"Uj ctgu'y kni'dg"Kuwygf "cpf "uqnf "qwwlxf g"vj g"Wpkygf "Uvcvgu"kp"eqo r ncpeg"y kyj "Tgi wcvkqp"U'qh'vj g"Ugewtkkgu"Cev'cpf" yj g"cr r necdng"hcy u"qh'vj g"lwtkuf kevkqp"yj gtg"vj qug"Kuwygu"cpf "vcrgu"qeewt0"

Vj g'Gs wkx{ "Uj ctgu'j cxg"pqv'dggp."cpf "y km'pqv'dg."tgi knygtgf ."rknygf "qt "qyj gty kng"s wcnkhlygf "kp"cp{ "qyj gt "lwtkuf kevkqp"qwulxf g" kfyf kc"cpf "o c{"pqv'dg"Kunwyf "qt"uqrf ."cpf "Dkf u"o c{"pqv'dg"o cf g"d{ "r gtuqpu"kp"cp{ "uwej "lwtkuf kevkqp."gzegr v'kp"eqo r nkcpeg" y kj "yj g"cr r nkecdng"ncy u"qh'uwej "lwtkuf kevkqp0"

Hwt j gt. "gcej "Crr necpv'y j gtg'tgs wktgf "ci tggu''j cv'uwej "Crr necpv'y kni'pqv'ugmi'qt "tcpuhgt "cp { "Gs wkx { "Uj ctgu'qt "etgcvg"cp { "geqpqo ke"kpvgtguv''j gtgkp. "kpenwf kpi "cp { "qhh'uj qtg"f gtkxcvkxg"kpuvtwo gpvu. "uwej "cu"r ctvkekr cvqt { "pqvgu. "kuuwgf "ci ckpuv''y g" Gs wkx { "Uj ctgu"qt "cp { "uko krct "ugewtkx{ . "qvj gt "vj cp"r wtuvcpv''vq "cp"gz go r vkqp"htqo . "qt "kp"c" "tcpucevkqp"pqv'uwdlgev''vq."'y g" tgi kuvcvkqp'tgs wktgo gpvu'qh'y g"Ugewtkxkgu'Cev'cpf "kp"eqo r ncpeg'y kyj "crr necdng'ncy u'cpf 'hgi kurcvkqpu'kp"gcej 'lwtkuf kevkqp." kpenwf kpi "Kpf kc0'

HKNIPI "

Vj g"Ftch/"Rtqurgewu"ku"dgkpi "hkrgf"y kj "DUG"Nko kgf"42 ^j "Hrqqt."RU0'Vqy gtu."Fcrcn"Utggv."Hqtv."O wo dck/622223." O cjetcuj vtc."Kpfkc0"

Vj g"Ftchv'Rtqur gewui'j cu'pqv'dggp"hkrgf 'y kij "UGDK'pqt'j cu'UGDKknuwgf "cp{"qdugtxcvkqp"qp"ij g"Knuwg"Fqewo gpv'kp"vgto u" qh'Tgi wrcvkqp"468*7+'ij g'UGDK'NEFT+'Tgi wrcvkqpu. '423: 01 qy gxgt. 'c'eqr { 'qh'ij g'Rtqur gewui'y kni'dg'hwtpknj gf 'vq'ij g'Dqctf" kp''c'uqhv'eqr { 0"

NKVKPI"

Crrnecvkqp"j cxg"dggp"o cfg"vq"UO G"Rrcvhqto "qh"DUG"Nko kgf "hqt"qdvckpkpi "r gto kuukqp"hqt"nkuvkpi "qh"vjg"Gs wkx{ "Uj ctgu" dgkpi "qhhgtgf "cpf" "uqnf "kp"vjg"kuvwg0"pUVG"ku"vjg" Rrcvhqto "qh"DUG"Nko kgf "chvgt"vjg"cmqvogpv"kp"vjg"Kuvwg0"pUVG"ku"vjg" F guki pcvgf "Uvqem'Gzejcpig."y kjj "yjej"vjg"Dcuku"qh"Cmqvogpv"y km'dg"hkpcnklgf"hqt"vjg"Kuvwg0'

Ki'y g'r gto kukqp''vq''f gcn'l\p''cp' '\qt''cp''qhhlekcn's wqvvkqp''qh'y g''Gs wk\{"Uj ctgu''qp''y g''UO G''Rncvhqto "qh''DUG''Nko kgf "ku''pqv'' i tcpvgf 'd\{'DUG.'qwt'Eqorcp\{"uj cmlhqty y kj 'tgrc\{."y kj qwvkpvgtguv."cm'o qpg\{u'tgegkxgf 'htqo "vj g''crrnlecpwl'p''r wtuwcpeg'' qh''y ku''Ftchv''Rtqur geww0''Vj g''cmqvo gpv'ngwgtu''uj cml'dg''kuwygf "qt''crrnlecvkqp''o qpg\{"uj cml'dg''tghwpf gf "T'wpdmqengf "y kj kp'' uwej "vb g''rtguetkdgf "d\{"UGDK'qt''gnug''y g''crrnlecvkqp''o qpg\{"uj cml'dg''tghwpf gf "vq''y g''crrnlecpwl''hqty y kj ."hckhpi "y j kej "kpvgtguv'uj cml'dg''r wg''q''dg''r ckf "\q''y g''crrnlecpwl'cv'y g''tcwg'qh'hkhvggp'r gt''eppwo 'hqt''y g''f gnc\{ gf 'r gtkqf ''cu''r tguetkdgf "wpf gt "Eqorcpkgu''Cev."4235. "yj g''UGDK*EFT+'Tgi wncvkqpu''cpf "qy' gt''crrnlecdm'''cy 0'

Qwt"Eqorcp{"ujcm'gpuwtg"vjcv'cm'uvgru"hqt"vjg"eqorngwlqp"qh'vjg"pgeguuct{"hqtochklegu"hqt"hkukpi"cpf"eqoogpegogpv'qh"utcfkpi"cv'vjg"UOG"Rncwlqto"qh'DUG"Nkokgf"ogpwlqpgf"cdqxg"ctg"vcngp"ykjkp'8"Yqtmkpi"Fc{u"qh'vjg"Kuwg"Emukpi"Fcvg0"

KO RGTUQP CVKQP"

Cwgpvkqp"qh"vj g"Crrnkecpwi"ku"ur gekhlecm("ftcy p"vq"vj g"rtqxkukqpu"qh"Ugevkqp"5: *3+"qh"vj g"Eqorcpkgu"Cev"4235"y jkej "ku" tgrtqfwegf "dgnqy <"

Cp{"rgtuqp"yjq/"

O cngu"qt "cdgw"o cnkpi "qh"cp"crrhecvkqp"kp"c"hkevkskqwu"pco g"xq"c"eqo rcp{"hqt"ces wkt kpi ."qt"uwduet kdkpi "hqt."kw" ugewt kskgu='qt"

Ocngu"qt "cdgsu"o cnkpi "qh'o wnkrng"crrnkecskqpu"sq"c"eqo rcp{ "kp"f khlgt gpv"pco gu"qt "kp"f khlgt gpv"eqo dkpcskqpu"qh'j ku" pco g"qt "iwt pco g"hqt "ces wkt kpi "qt "iwduet kdkpi "hqt "ksu"ugewt kskgu="qt"



Qvj gty kug'lpf wegu'f kt gewl "qt "kpf kt gewl "c"eqo rcp{ "vq"cnqv."qt "t gi kwgt "cp{ "vt cpulgt "qh"ugewt kvkgu'vq"j ko ."qt "vq"cp{ " qvj gt "rgt uqp"kp"c "kevkskqwu"pco g."uj cmi'dg"hcdrg"\q"cevkqp"\vpf gt "Ugevkqp'669"qh'\j g"Eqo rcpkgu. "Cev'42350"

EQPUGPVU'

Eqpugpwilp'y tkkpi "qh'*c+'Qwt'F ktgevqtu.'Rtqo qvgtu.'Ej kgh'Hlpcpekcn'Qhhkegt.'Eqo r cp{ 'Ugetgvct{ "cpf 'Eqo r rkcpeg'Qhhkegt." Rggt "Tgxkgy 'Cwf kqt "cpf 'Ucwwqt { 'Cwf kqt="*d+Ngcf 'O cpci gt. 'Wpf gty tkgtu. 'O ctngv'O cngt. 'Tgi kuntct '\q'\j g'Kunng. 'Dcpngt" vq"\j g"Eqo r cp{."Dcpmgt"\q"\j g"Kuwg"cpf "Ngi cn"Cf xkuqt"\q"\j g"Kuwg"\q"cev"kp"\j gkt"tgur gevkxg"ecr cekkgu"\ij cm"dg"qdvckpgf "cu" tgs wktgf "cu'tgs wktgf "wpf gt"Ugevkqp"48"("Ugevkqp"54"qh'vj g'Eqo r cpkgu'Cev."4235"cpf "uwej "eqpugpvu'uj cm'pqv'dg'y kyj f tcy p" $wr "vq" iy g" Wo g" qh'f grlxxgt { "qh'' iy g"Rt qur gewui" hqt'' tgi kunt cwlqp" y k iy "' iy g" TQE0' Qwt "Uncwwqt { "Cwf kqt" j qrf kpi "Rggt" Tgxkgy gf" }$ Egt khlecvej'j cu'i kvgp''y gkt''y tkvgp''eqpugpv'vq''y g'hpenxukqp''qh'y gkt''tgr qtv'kp''y g'hqto "cpf 'eqpvgzv'kp''y j kej 'kv'cr r gctu'kp''y ku'' Ftch/Rtqur gewu'cpf 'uwej 'eqpugpv'cpf 'tgr qtv'uj cm/pqv'dg'y kj ftcy p'wr 'vq''y g'Wo g'qh'f grkxgt { "qh'y g'Rtqur gewu'hqt 'hkrkpi " y ký "ý g"TQE0""

Kp"ceeqtf cpeg"y ksj "'sj g"Eqo r cpkgu"Cev."4235"cpf "sj g"UGDK**KEFT+"Tgi wrcvkqpu."423: ."O Iu0IOR"Cuuqekcvgu."Rggt "Tgxkgy" tgur gevksg"tgr qtvu"qp"õ*Usc vgo gpv"qht Rquskdrg"Vcz 'Dgp ghkuö* "tgrcvkpi "vq"yj g"r quukdrg"vcz "dgpghkvu"cpf "tguvcvgf "hkpcpelcri" uvcygo gpvu''cu'kpenwf gf 'kp''yj ku'F tchv'Rtqur gewwu'kp''yj g'hqto ''cpf ''eqpvgz v'kp''y j kej ''yj g{ ''crr gct ''yj gt gkp''cpf ''uwej ''eqpugpv''cpf '' tgrqtwi'y kni'pqv'dg''y kaj ftcy p''wr ''vq''aj g''vko g''qh'f grkxgt{ ''qh''aj ku'Ftchv'Rtqur gewwu0'

GZRGTV'VQ'VJ G'HUWG''

Gzegr v'cu'uvcvgf ''dgrqy . ''qwt 'Eqo r cp{ ''j cu'pqv'qdvckpgf ''cp{ ''gzr gtv'qr kpkqpu<'''

Tgrqtv'qh'vjg''Uvcvgogpv'qh'Rquukdrg''qh''Vcz''Dgpghku0'''

Tgrqtv'qh''y g''Cwfkqt"qp"'y g''Tgucvgf "Hoppeken'Ucvgo gpwl'qh'qwt"Eqorcp{"hqt"y g'r gtkqf "gpf gf "qp"Ugr vgo dgt "52." $4245 "cpf" "Hopeken" [gct" gpf gf" qp" O ctej" 53." 4245 = 4244" cpf" 4243" qh' qwt" Eqor cp \{0" and continuous and continu$

GZRGPUGU'VQ'VJ G'KUWG''

Vj g"gzr gpugu"qh'vj ku"Knuwg"kpenwf g. "co qpi "qvj gtu."wpf gty tkklpi "cpf "o cpci go gpv'hggu."r tkpvkpi "cpf "f kurtkdwkqp"gzr gpugu." rgi cn'hggu."uvcwvqt { "cf xgt klugo gpv'gzr gpugu"cpf "rkrvkpi "hggu0'Hqt"f gvckru"qh"vqvcn'gzr gpugu"qh"vj g"Kuvvg."tghgt"vq"ej cr vgt" õ*Qdlgevu'qhtij g'Kuuwg*ö''dgi kppkpi ''qp''r ci g'8: ''qh''yj ku'F tchv'Rtqur gewu0'

FGVCKNUQH'HGGURC[CDNG"

Hggu'Rc{cdrg'\d'\j g'Ngcf 'O cpci gt''

Vj g'\qvcnhggu'r c{cdng'\q'iy g'Ngcf 'O cpci gt'y km'dg'cu'r gt'\y g'O cpf cvg'Ngwgt'kuwgf 'd{ "qwt"Eqo r cp{ '\q'iy g'Ngcf 'O cpci gt." yj g"eqr { "qh"y j kej "ku"cxckrcdrg'hqt "kpur gevkqp"cv"qwt "Tgi kuvgtgf "Qhhkeg0"

Hggu'Rc{cdrg'tq'tj g'Tgi kwtct'tq'tj g'Kuwg'''

Vj g'hggu'r c{cdng'\q'\j g'Tgi kntct'\q'\j g'Kuwg'y kn'dg'cu'r gt'\j g'Ci tggo gpv'uki pgf ''d{ ''qwt'Eqo r cp{ ''cpf ''\j g''Tgi kntct'\q'\j g'' Kuwg"f cvgf "F gego dgt"45."4245"c"eqr { "qh'y j lej "kı"cxckrcdrg"hqt "kpur gevkqp"cv"qwt "Tgi kıvgtgf "Qhkleg0'Vj g'Tgi kıvtct"vq"vj g" $\textbf{Kuwg"y km'dg"tgko dwtugf "hqt"cm'qw/qh/r qengv'gzr gpugu"kpenwf kpi "equv'qh'uvcvkqpgt {."r quvci g."cpf "uvco r "f wv{"cpf" long to the control of the$ eqo o wpkecvkqp"gzrgpugu0Cfgswcvg"hwpfu'y km'dg"rtqxkfgf"d{"\jg"Eqorcp{"\q"\jg"Tgikuvtct"\q"\jg"Kuvwg"\q"gpcdng"\jgo"\q" ugpf "tghwpf "qtf gtu"qt"cmqvo gpv"cf xleg"d{ "tgi knygtgf "r quv"l"ur ggf "r quv"l"wpf gt "egt \khlecvg"qh"r quvkpi 0""

Hggu'Rc{cdrg'\q'Qvj gt u'''

Vj g"vqvcn"hggu"r c{cdng"vq"vj g"Ngi cn"Cfxknqt."Cwfkqt"cpf "Cfxgtvkngt."gve0'y km'dg"cu"r gt"vj g"vgto u"qh"vj gkt"tgur gevkxg" gpi ci go gpv'ngwgtu'kh'cp{0'

WPFGTY TK/YPI 'EQOOKUUQP.'DTQMGTCI G'CPF'UGNNYPI 'EQOOKUUQP''

Vj g"wpf gty tkkpi "eqo o kuulqp"cpf "vj g"ugmlpi "eqo o kuulqp"hqt"vj g"Kuuwg"ctg"cu"ugv'qwv'kp"vj g"Wpf gty tkkpi "Ci tggo gpv' co qpi uv" yi g"Eqo r cp{"cpf "Wpf gty tkstu0' Vj g"wpf gty tkstpi "eqo o kuukqp"uj cm"dg"r ckf "cu"ugv"qww"kp" yi g"Wpf gty tkstpi " Ci tggo gpv'dcugf "qp" yj g"Kuwg"r tkeg" cpf "yj g" co qwpv'wpf gty tkwgp" lp" yj g" o cppgt "o gpvkqpgf "lp" ceeqtf cpeg" y kyj "Ugevkqp" 62" qh''y g'Eqorcpkgu'Cev.''4235''cpf ''y g'Eqorcpkgu'**Rtqurgewu''cpf 'Cmqvogpv'qh'Ugewtkkgu+'Twrg.''42350'''



RTGXKOWUTH J VU'CPF'RWDNKE'KUWGU'UPEG'VJ G'KPEOTROTCVKOP''

 $Y g"j cxg"pqv"o cf g"cp{"r tgxkqwu"tki j vu"cpf "I"qt"r wdrke"kuwgu"ukpeg"kpeqtr qtcvkqp"cpf "ctg"cp" \tilde{\textit{o} Wp rkwgf "kwwgt"} "kp" vgto u"qh" vgto u"qh$ yj g"UGDK*NEFT+"Tgi wrcykqpu."423: "cpf" 'yj ku'Knuwg'ku'cp*"õKpkkcnRwdnke 'Qhtgt kpi ö"*kp" 'ygto u'qh''yj g'UGDK*NEFT+"Tgi wrcykqpu." 423: 0'

ECREVEN'HUUWGU'EP''VJ G''NCUV''VJ TGG'*5+'[GCTU'D[''NHUVGF''I TQWR'EQORCPHGU'I'UWDUEFHCT[''I' CUUQEKCVGU"

P qpg"qh"qwt"I tqwr "Eqo r cp{""ICuuqekcygu"yj cv"ctg"hkungf "qp"cp{"UqemGzej cpi g"j cu"o cf g"cp{"Ecr kxn"Kuwg"kp"yj g"hcuv"yj tgg" *5+"{gctu0'Y g"fq"pqv"j cxg"cp{"uwdukf kct{"cu"qp"fcvg"qh"vj ku"Ftchv'Rtqur gewu0"

RTGXKQWU'KUWGU'QH'UJ CTGU'QVJ GTY KUG'VJ CP'HQT'ECUJ "

Gzegr v'cu'uvcygf 'kp''yj g''ej cr ygt''kxrgf 'õ*Ecr kx nUtt wewt gö '*dgi kppkpi ''qp''r ci g''78''qh''yj ku'F tchv'Rtqur gewu. ''qwt 'Eqo r cp{ ''j cu'' pqv'knuwgf "cp{ "Gs wkx{ "Uj ctgu'hqt"eqpulf gtcvkqp"qvj gty kug'vj cp'hqt"ecuj 0'

EQO O KUKOP 'CPF 'DTQMGTCI G'QP 'RTGXKQWUKUWGU''

Upeg"yi ku"ku"yi g"Kpkskcn"Rwdnke"Qhhgt "qhi'yi g"Gs wkx{"Uj ctgu"d{"qwt"Eqorcp{."pq"uwo "j cu"dggp"r ckf "qt"j cu"dggp"r c{cdng"cu" eqo o kuukqp"qt"dtqngtci g"hqt"uwduetkdkpi "vq"qt"rtqewtkpi "qt"ci tggkpi "vq"rtqewtg"uwduetkr vkqp"hqt"cp{"qh'qwt"Gs wkx{"Uj ctgu" ukpeg"qwt "kpegr vkqp0"

RCTVIEWNCTU'IP'TGI CTF'VQ'QWT'EQORCP['CPF'QVJ GT'NHVVGF'EQORCPKGUWPFGT'VJ G'UCOG'' O CP CI GO GP V''Y KVJ KP "VJ G''O GCP KPI "QH''UGE VKQP "592*3D+"QH''VJ G"EQO RCP KGU''CE V."3; 78"1" UGEVKOP'3: 8'OH'VJ G'EQO RCPKGU'CEV.'4235'Y J KEJ 'O CFG'CP['ECRKVCN'KUWG'FWTKPI 'VJ G'NCUV'' VJ TGG'[GCTUJ'

P qpg"qh"yi g"gs wkx{ "uj ctgu"qh"Eqo r cpkgu"wpf gt "uco g"o cpci go gpv"ctg"hkuygf "qp"cp{ 'tgeqi pk gf "uxqem"gzej cpi g0P qpg"qh"yi g" cdqxg'eqo r cpkgu'j cxg'tckugf 'cp{ 'ecr kcn'f wtkpi 'y g'r cuv'5''{ gctu0'

RTQO KUG'XGTUWURGTHQTO CPEG'HQT'QWT'EQO RCP["

Qwt"Eqorcp{"ku"cp"õWprkogf 'Kawgtö"kp"\gto u"qh"\j g"UGDK*ÆFT+Tgi wrc\kqpu."423: ."cpf "\j ku"Kuwg'ku"cp'õKpkkcrlRwdrke'' *Olligt lip i ö* "lip" 'ygto u"qh" yj g"UGDK*MEFT+"Tgi wrc liqpu."423: 0'Vj gtghqtg."f c vc"tgi ctf lipi "r tqo lug" xgtuwu"r gthqto cpeg" ku"pqv" cr r nlecdng'\q'\wu0'

NKUVGF'UWDUKFKCT['TRTQOQVGT'''

 $Y g''f q''pqv''j \ cxg''cp \{ ''kuvgf ''Uwdukf kct \{ ''qt''Rtqo \ qvgt''Eqo \ r \ cp \{ ''cu''qp''f \ cvg''qh''y \ ku''F \ tchv''Rtqur \ gewww0'' \ del{eq:controller} \}$

QWWUVCPFIPI "FGDGPVWIGU" DQPFU" TGFGGO CDNG" RTGHGTGPEG" UJ CTGU' CPF" QVJ GT" RPUVTWO GPVU'RUUWGF'D['QWT'EQO RCP["

Cu"qp"yi g"f cvg"qh"yi ku"F tchv"Rtqur gewu."qwt"Eqo r cp { "j cu"pq"qwuvcpf kpi "f gdgpwtgu."dqpf u"qt"tgf ggo cdrg"r tghgtgpeg" uj ctgu0'

UVQEMO CTMGV'F CVC'HQT'QWT'GS WW ['UJ CTGU'"

Qwt "Eqorcp{"ku'cp" \tilde{v} \tilde Qhlgt lpi "o "kp" vgto u"qh" vj g"UGDK *KEFT+" Tgi wrc vkqpu. "423: 0" Vj wu. "vj gtg" ku" pq" uvqem o ctmgv'f cvc" cxckrcd mg" hqt "vj g" Gs wks{" Uj ctgu'qh'qwt'Eqo r cp{0"

O GEJ CPKO 'HQT'TGFTGUCN'QHKPXGUVQT'I TKGXCPEGU"

Vj g'Ci tggo gpv'dgwy ggp''y g'Tgi kuntct"cpf "Qwt"Eqo rcp{"rtqxkf gu"hqt"tgvgpvkqp"qh'tgeqtf u''y kaj "'y g'Tgi kuntct"hqt"c"r gtkqf " qh'cv'rgcuv'y tgg"{gctu"htqo "y g"rcuv'f cvg"qh'f kur cvej "qh''y g"rgwgtu"qh'cmqvo gpv."f go cv'etgf kv'cpf "wpdmemkpi "qh'hwpf u'vq" gpcdrg''y g''kpxguvqtu''vq''crrtqcej ''y g'Tgi kuvtct''vq''y ku''Kuuwg''hqt''tgf tguucn'qh''y gkt''i tkgxcpegu0'Cm'i tkgxcpegu'tgncvkpi ''vq''y ku'' Kuwg'o c{"dg"cfftguugf"\q"\jg"Tgikıntct"ykj"c"eqr{"\q"\jg"Eqornlepeg"Qhhkegt."ikxkpi 'hmmlfgvckru'luwej "cu'\jg"pcog."cfftguu" $qh'yj g''crr n'ecpv.''pwo dgt''qh''Gs wks{"Uj ctgu''crr nkgf''hqt.''co qwpv'r ckf''qp''crr n'ecvkqp''cpf''yj g''dcpm''dtcpej ''qt''eqmgevkqp''egpvtg''}$ y j gtg''y g''crrnkeckqp''y cu''uwdo kwgf 0'



Cmi'i tkgxcpegu'tgrcvkpi "vq"yj g"CUDC"r tqeguu'o c{"dg"cfftguugf"vq"yj g"UEUD."i kxkpi "hwmi'fgvckru'uwej "cu"pco g."cfftguu'qh" yj g"crrnkecpv."pwo dgt"qh'Gs wkx{"Uj ctgu'crrnkgf"hqt."co qwpv'rckf"qp"crrnkecvkqp"cpf"yj g"Fguki pcvgf"Dtcpej "qt"yj g"eqmgevkqp" egpvtg"qh'yj g"UEUD'y j gtg"yj g"Crrnkecvkqp"Hqto "y cu'uwdo kwgf"d{"vj g"CUDC"crrnkecpvu0"

FKURQUEN'QH'RPXGUVQT'I TKGXCPEGU'D['QWT'EQORCP["

 $Qwt"Eqo\ r\ cp\{"j\ cu"cr\ r\ qkpvgf"Dki\ uj\ ctg"Ugtxkegu"Rtkxcvg"Nko\ kgf"cu"vj\ g"Tgi\ kntct"vq"vj\ g"Kuwg"vq"j\ cpf\ rg"vj\ g"kpvguvqt"i\ tkgxcpegu"kp"eq/qtf\ kpcvkqp"y\ kj\ "vj\ g"Eqo\ r\ ncpeg"Qhhkegt\ qh"vj\ g"Eqo\ r\ cp\{0C\ m'i\ tkgxcpegu"kgrvkpi\ "vj\ g"t\ tgugpv'Kuwg"o\ c\{"dg"cf\ f\ tguugf\ "vq"vj\ g"Tgi\ kntct"y\ kj\ "c"eqr\ {"vq"vj\ g"Eqo\ r\ ncpeg"Qhhkegt."i\ kxkpi\ "hwn"f\ gvcknu"uwej\ "cu"pco\ g."cf\ f\ tguu"qh"vj\ g"cr\ r\ necvkqp"vp dgt"qh"Gs\ wkv{"Uj\ ctgu"cr\ r\ nkgf\ "hqt."co\ qwpv'r\ ckf\ "qp"cr\ r\ necvkqp"cpf\ "pco\ g"qh"dcpni'cpf\ "dtcpej\ 0Vj\ g"Eqo\ r\ cp{"y\ qwnf\ "o\ qpkqt"vj\ g"Y\ qtm'qh'vj\ g"Tgi\ kntct"vq"gpuwtg"vj\ cv'vj\ g"kpxguvqt"i\ tkgxcpegu"ctg"ugwngf\ "gzr\ gf\ kklqwun("cpf\ "ucvkuhcevqtkn(0")"ch'vcvkuhcevqtkn(0")"ch'vcvkuhcevqtkn(0")"ch'vcvkuhcevqtkn(0")"ch'vcvkuhcevqtkn(0")"ch'vcvkuhcevqtkn(0")"ch'vcvkuhcevqtkn(0")"ch'vcvkuhcevqtkn(0")"ch'vcvkuhcevqtkn(0")"ch'vcvkuhcevqtkn(0")"ch'vcvkuhcevqtkn(0")"ch'vcvkuhcevqtkn(0")"ch'vcvkuhcevqtkn(0")"ch'vcvkuhcevqtkn(0")"ch'vcvkuhcevqtkn(0")"ch'vcvkuhcevqtkn(0")"ch'vcvkuhcevqtkn(0")ch'vcvkuh$

Vj g"Tgi kıntct"vq"vj g"Kınwg"y kın"j cpf rg"kpxguvqt¢u"i tkgxcpegu"r gtvckpkpi "vq"vj g"Kınwg0'C"hqtvpki j vn{ "uvcwu"tgr qtv'qh'vj g" eqo r rckpwi'tgegkxgf "cpf 'tgf tguugf 'd{ 'vj go 'y qwf 'dg'hqty ctf gf 'vq'vj g'Eqo r cp{0Vj g'Eqo r cp{ 'y qwf 'cnuq'dg'eq/qtf kpcvkpi "y kj "vj g'Tgi kıntct"vq"vj g"Kınwg"kp"cwgpf kpi "vq"vj g'i tkgxcpegu"vq"vj g'kpxguvqt0'

Y g"j cxg"eqpurkwygf "y g"Ucngj qrf gtu"Tgrcvlqpuj kr "Eqo o kwgg"qh"y g"Dqctf "xlyf g"tguqruwlqp"r cuugf "cv"y g"Dqctf "O ggvlpi " j grf "qp"F gego dgt "35."42450'Hqt"hwty gt "f gycknu."r ngcug"tghgt "vq"y g"ej cr ygt "vkngf "õ $\it Qwt'O$ $\it cpci$ $\it go$ $\it gp$ $\it wo"dgi kppkpi "qp"r ci g" 339"qh"y ku"F tchr'Rtqur gewu0"$

Qwt"Eqorcp{"j cu"crrqkpvgf"Ou0J ggpcn"J kguj "Tcvj qf 'cu"Eqorcp{"Ugetgvct{"cpf"Eqornkcpeg"Qhhlegt"cpf"j g"oc{"dg" eqpvcevgf"cv'vj g'hqmqy kpi "cfftguu<""

OuOJ ggpcnJ ksguj 'Tcvj qf '''

Cuuqekcygf 'Eqcygtu'Nko kygf '"'

Cf f t gun<"Cuj wk"Mj cpdgtkc"O cj guj vcre"NR"421: 5168."Mqmævc."Xkxgmæpcpf cr wt."Uqwj "46"Reti cpcu."Vj cmwtr wmwt" O cj guvqre."Y guv'Dgpi cn"Kpf kc. '922363"

Vgn<- "; 3"; : 52659923"

Go ckn</kphqB cuuqekcygf eqcygtu(kp"

 $\label{thm:condition} \begin{tabular}{l} kpxguvqtu"ecp"eqpvcev"yig"Eqorcp{"Ugetgvct{"cpf"Eqornkepeg"Qhhkegt"qt"yig"Tgikuvct"kp"ecug"qh"cp{"Rtg/Kuwg"qt"Rquv'Kuwg"tgrcvgf"rtqdrgou"uwej"cu"pqp/tgegkrv'qh"rgwgtu"qh"cmqecvkqp."etgfkv"qh"cmqwgf"Gsvkv{"Ujctgu"kp"yig"tgurgevkxg"dgpghkekct{"ceeqwpv'qt"wpdrqemkpi"qh'hwpfu."gve0'} \end{tabular}$

Ucvwu'qh'Koxguvqt 'Eqornckowi''

Y g"eqphkto "vj cv"y g"j cxg"pqv"tgegkxgf "cp{"kpxguvqt"eqo r nkcpv"f wtkpi "vj g"vj tgg"{gctu"r tgegf kpi "vj g"f cvg"qh"vj ku"F tchv" Rtqur gewu"cpf "j gpeg"vj gtg"ctg"pq"r gpf kpi "kpxguvqt"eqo r nckpvu"cu"qp"vj g"f cvg"qh"vj ku"F tchv'Rtqur gewu\0"

Fkr queniqhikpxgunqt'I tlgxcpegu'd{'Nkmgf'Eqorcplgu'wpfgt'tjg'ticog'Ocpcigogpv''

 $Pqpg''qh''qwt''I \ tqwr'Eqo\ r\ cpkgu''I'Cuuqekcvgu''I'Uwdukf\ kct \{''ctg''hkuvgf\ ''qp''cp \{'Uvqem'Gzej\ cpi\ g''cu''qp''vj\ g'f\ cvg''qh'hkrkpi\ ''vj\ ku'F\ tchv''\ Rtqur\ gewul0''$

ECRKYCNKUCVKQP'QH'TGUGTXGU'QT'RTQHKVU'

Ucxg"cpf "gzegr v'cu"uvcvgf "lp" vj g"ej cr vgt "vkurgf "õEcr kvc n' Unt wewwt gö"dgi lpplpi "qp" r ci g'78"qh" vj ku"F tchv'Rtqur gewwu."qwt" Eqo r cp{ "j cu"pqv'ecr kvc nk gf "kwu'tgugt xgu"qt "r tqhksu"f wt lpi "vj g"rcuv'hkxg"{ gctu0'}

TGXCNWCVKQP'QH'CUUGVU''

Qwt 'Eqorcp{'j' cu'pqv'tgxcnwgf'ku'cuugwu'ukpeg'kpeqtrqtcvkqp0'

VCZ'KO RNKE CVKQP U''



Koxgunqtu''y j q"ctg"cmqwgf "Gs wkx{"Uj ctgu''kp"vj g"Kuwg''y kni'dg"uwdlgev'vq"ecr kcnii ckpu'vcz"qp"cp{"tgucng"qhi'yj g"Gs wkx{"Uj ctgu" cv'cr r necdng'tcvgu."f gr gpf kpi "qp"vj g"f wtcvkqp"hqt"y j kej "vj g"kpxgunqtu''j cxg"j gnf "vj g'Gs wkx{"Uj ctgu'r tkqt 'vq 'uwej 'tgucng"cpf "y j gvj gt "vj g'Gs wkx{"Uj ctgu'r tkqt 'vq 'uwej 'tgucng"cpf "y j gvj gt "vj g'Gs wkx{"Uj ctgu'r tkqt 'vq 'uwej 'tgucng"cpf "y j gvj gt "vj g'Gs wkx{"Uj ctgu'r tkqt 'vq 'uwej 'tgucng'cpf "y j gvj gt "vj g'Ugevkqp 'kkngf 'b*Uvc woo gp v'qhRquukdng'' Vcz 'Dgp ghlwo*' 'dgi kppkpi "qp"rci g'9; 'qh'vj ku'Ftchv'Rtqur geww0'

RWTEJ CUG'QH'RTQRGTV["

 $\label{thm:linear_var} Vj \ gtg''ku''pq''r \ tqr \ gtv'' \ ''y \ j \ kej \ ''j \ cu''dggp''r \ wtej \ cugf \ ''qt''ces \ wktgf \ ''y \ j \ kej \ ''ku''q''dg''r \ ckf'' \ hqt''y \ j \ qm'' \ ''j \ cu''htqo \ ''y \ g''r \ tquggp''Kuwg''qt''y \ g''r \ wtej \ cug''qt''ces \ wkukkqp''qh''y \ j \ kej \ ''j \ cu''pqv''dggp''eqo \ r \ rgvgf'' \ qp''y \ g''f \ cvg''qh''y \ ku''F \ tchv''Rtqur \ geww.0'''$

Gzegr v'cu'lvcvgf "gnigy j gtg'l\p'\j kı'F tchv'Rtqur gewu. "qwt 'Eqo r cp{ 'j cu'pqv'r wtej cugf "cp{ 'r tqr gtv\ 'l\p'y j kej ''\j g''Rtqo qvgtu'' cpf "l'qt'F ktgev'qtu'j cxg''cp\ 'f ktgev'qt' l\p' ktgev'qtytguv'l\p'cp\ 'r c\ o gpv'o cf g'\j gtg'\wpf gt0'

UGTXÆPI 'DGJ CXKQT"

Vj gtg"j cu"dggp"pq"f ghcwn/lp"rc{o gpv'qh'uncwnqt{"f wgu"qt"qh'lpvgtguv'qt"r thpekrcn'lp"tgur gev'qh'qwt"dqttqy hpi u"qt"f gr quku0""

RC[OGPV'QT'DGPGHKV'VQ'QHHKEGTU'QH'QWT'EQORCP["

Gzegr v'uvcwwqt {"dgpghku"wr qp"vgto kpcvkqp"qh"vj gkt"go r m{o gpv"kp"qwt"Eqo r cp{"qt"uwr gtcppwcvkqp."pq"qhhkegt"qh"qwt" Eqo r cp{"ku"gpvkxrgf "vq"cp{"dgpghkv"wr qp"vgto kpcvkqp"qh"j ku"go r m{o gpv"kp"qwt"Eqo r cp{"qt"uwr gtcppwcvkqp0'Gzegr v'cu" f kwemugf "wpf gt"ugevkqpu"vkxrgf "\$Qwt'O cp ci go gp v\$"cpf "õTgrc vgf'TCt v\'Vtcp uc evkqp u\"o"dgi kppkpi "qp"r ci g"339"cpf "357" tgur gevkxgn{"qh"vj ku"F tchv\'Rtqur gevku"pqpg"qh"vj g"dgpghkekctkgu"qh"nqcpu"cpf "cf xcpegu"cpf "uwpf t{"f gdvqtu"ctg"tgrc vgf "vq"vj g" F ktgevqtu"qh"qwt"Eqo r cp{0'

GZGO RVKQP'HTQO 'EQO RN[KPI 'Y KVJ 'CP['RTQXKUKQPU'QH'UGEWTKVKGU'NCY U.'KH'CP[.'I TCPVGF'' D['UGDK'

Qwt "eqorcp{"jcu"pqv"crrnkgf"qt"tgegkxgf"cp{"gzgorwkqp"htqo"eqorn{kpi"ykj"cp{"rtqxkukqpu"qh"ugewtkxkgu"ncyu"d{"UGDK"



UGEVKQP'ZKKUUWG'TGNCVGF'KPHQTOCVKQP"

VGTO UQHVJ G'KUVG''

Vj g"Gs wks{"Uj ct gu"dgkpi "Cmqwgf "r wtuwcpv"vq"yi ku"Kuwg"uj cm'dg"uwdlgev"vq"yi g"rt qxkukqpu"qh'yi g"Eqo r cpkgu"Cev."UGDK *KEFT+"Tgi wrcvkqpu." UGDK *NQFT+"Tgi wrcvkqpu." UETC." UETT." qwt "O go qt cpf wo "qh' Cuuqekcvkqp" cpf "Ctvkengu"qh' Cuuqekcvkqp."yi g"kgt o u"qh'yi ku'Ft ch'Rt qur gewuu."yi g"Rt qur gewuu "yi g"Cdt kf i gf "Rt qur gewuu "Cr r nkecvkqp"Hqto ."cp{ "Tgxkukqp" Hqto ."vj g"ECP"I"Cmqvo gpv'Cf xkeg"cpf "qyi gt "vgt o u"cpf "eqpf kkqpu"cu"o c{ "dg"kpeqt r qt cvgf "kp"yi g"Cnqvo gpv'Cf xkeg"cpf "qyi gt "yt o u"cpf "eqpf kkqpu"cu"o c{ "dg"kpeqt r qt cvgf "kp"yi g"Cnqvo gpv'Cf xkeg"cpf "qyi gt "f qewo gpvu"Tegt vklkecvgu"yi cv'o c{ "dg"gz gewygf "kp"t gur gev'qh'yi g"Kuwg0Vy g'Gs wks{ "Uj ct gu'iyi cm'cnaq"dg"iwdlgev'vq"rcy u" cu"cr r r nkecdng."ii wkf grkpgu "twngu "pqvklkecvkqpu"cpf "tgi wrcvkqpu"t grcvkpi "vq"yi g"kuwg"qh'ecr kcn'cpf "thukpi "cpf "ttcf kpi "qh' ugewt kkgu'kuwgf "lt qo "vko g"vq'ko g"d{ "UGDK"yi g"I qxgt po gpv'qh'Kpf kc."yi g"Uqem'Gzej cpi g*u+"yi g"TDK"TqE"cpf "Tqt"qyi gt" cwj qt kkgu."cu'hp "lqt eg"qp'yi g'f cvg"qh'yi g"Kuwg"cpf "vq"yi g"gz vgpv'cr r nkecdng"qt "uwej "qyi gt "eqpf kkqpu"cu"o c{ "dg"r t guet kdgf" d{ "yi g"UGDK"yi g"TDK"yi g"I qxgt po gpv'qh'Kpf kc."yi g"Uqem'Gzej cpi g*u+"yi g"TqE"cpf "Tqt "cp{"qyi gt "cwyi qt kkgu'y j krg"t t cpvkpi "ku'crr t qxcn'lqt "yi g"Kuwg0'

Rrgcug" pqvg" vj cv." kp" vgt o u"qh" Tgi wrcvkqp" 478" qh" vj g" UGDK" KEFT" Tgi wrcvkqpu" 423: "t gcf" y koj "UGDK" Ekt ewrct" Pq0' EKT IEHF IRQNKE[EGNNB314237"f cvgf "Pqxgo dgt"32."4237."cnt'vj g"crrrkecpvu"j cxg"vq"eqo rwnuqtkuf "crrrl" vj t qwi j "vj g" CUDC'Rt qeguu'cpf 'hwt vj gt 'kp'\gt o u'qh'UGDK\j t qwi j 'kw'ekt ewrc t 'pq0'UGDKJ QIEHF IF K\4 IEKT IR 1423: B5: 'f cvgf 'P qxgo dgt'' 3."423: ."cpf "cu"o qf ll·ligf "yj qwi j "ku"elt ewrct "UGDKIJ QIEHF IF KN4 IEKT IR 1423; 172"f cvgf "Crt lu'5."423; ."elt ewrct "pq0" UGDKIJ QIEHF IF KN4 IEKT IR 1423; 198'f cvgf "Lwpg"4: ."423; ."ekt ewrct "pq0UGDKIJ QIEHF IF KN4 IEKT IR 1423; 1: 7'f cvgf "Lwpg"4: ."423; ."ekt ewrct "pq0UGDKIJ QIEHF IF KN4 IEKT IR 1423; 1: 7'f cvgf "Lwpg"4: ."423; ."ekt ewrct "pq0UGDKIJ QIEHF IF KN4 IEKT IR 1423; 1: 7'f cvgf "Lwpg"4: ."423; ."ekt ewrct "pq0UGDKIJ QIEHF IF KN4 IEKT IR 1423; 1: 7'f cvgf "Lwpg"4: ."423; ."ekt ewrct "pq0UGDKIJ QIEHF IF KN4 IEKT IR 1423; 1: 7'f cvgf "Lwpg"4: ."423; ."ekt ewrct "pq0UGDKIJ QIEHF IF KN4 IEKT IR 1423; 1: 7'f cvgf "Lwpg"4: ."423; ."ekt ewrct "pq0UGDKIJ QIEHF IF KN4 IEKT IR 1423; 1: 7'f cvgf "Lwpg"4: ."423; ."ekt ewrct "pq0UGDKIJ QIEHF IF KN4 IEKT IR 1423; 1: 7'f cvgf "Lwpg"4: ."423; ."ekt ewrct "pq0UGDKIJ QIEHF IF KN4 IEKT IR 1423; 1: 7'f cvgf "Lwpg"4: ."423; ."ekt ewrct "pq0UGDKIJ QIEHF IF KN4 IEKT IR 1423; 1: 7'f cvgf "Lwpg"4: ."423; ."ekt ewrct "pq0UGDKIJ QIEHF IF KN4 IEKT IR 1423; 1: 7'f cvgf "Lwpg"4: ."423; ."ekt ewrct "pq0UGDKIJ QIEHF IF KN4 IEKT IR 1423; 1: 7'f cvgf "Lwpg"4: ."423; ."ekt ewrct "pq0UGDKIJ QIEHF IF KN4 IEKT IR 1423; 1: 7'f cvgf "Lwpg"4: ."423; ."ekt ewrct "pq0UGDKIJ QIEHF IF KN4 IEKT IR 1423; 1: 7'f cvgf "Lwpg"4: ."423; ."ekt ewrct "pq0UGDKIJ QIEHF IF KN4 IEKT IR 1423; 1: 7'f cvgf "Lwpg"4: ."423; ."ekt ewrct "pq0UGDKIJ QIEHF IF KN4 IEKT IR 1423; 1: 7'f cvgf "Lwpg"4: ."ekt ewrct "pq0UGDKIJ QIEHF IF KN4 IEKT IR 1423; 1: 7'f cvgf "Lwpg"4: ."ekt ewrct "pq0UGDKIJ QIEHF IF KN4 IEKT IR 1423; 1: 7'f cvgf "Lwpg"4: ."ekt ewrct "pq0UGDKIJ QIEHF IF KN4 IEKT IR 1423; 1: 7'f cvgf "Lwpg"4: ."ekt ewrct "pq0UGDKIJ QIEHF IF KN4 IEKT IR 1423; 1: 7'f cvgf "Lwpg"4: ."ekt ewrct "pq0UGDKIJ QIEHF IF KN4 IEKT IR 1423; 1: 7'f cvgf "Lwpg"4: ."ekt ewrct "pq0UGDKIJ QIEHF IF KN4 IEKT IR 1423; 1: 7'f cvgf "Lwpg"4: ."ekt ewrct "pq0UGDKIJ QIEHF IF KN4 IEKT IR 1423; 1: 7'f cvgf "Lwpg"4: ."ekt ewrct "pq0UGDKIJ QIEHF IF KN4 IEKT IR 1423; 1: 7'f cvgf "Lwpg"4: ."ekt ewrct "pq0UGDKIJ QIEHF IF KN4 IEKT IR 1423; 1: 7'f cvgf "Lwpg"4: ."ekt ewrct "pq0UGDKIJ QIEHF IF KN4 IEKT IR 1423; 1: 7'f cvgf "Lwpg"4: ."ekt ewrct "pq0UGDKIJ QIEHF IF KN 423; "cpf "ektewrct"pq0UGDKJ QIEHF IF ET4IEKT IR 423; 1355"f cvgf "Pqxgo dgt": ."423; "%qi gyj gt."\j g"õWRK'Ektewrct ö+"kp" t grc skap "sa "erc t kkec skap u"ap "ust gco rkpkpi "sj g"r t qeguu"ah "r wah ke "kuung "ah "gs wks{ "uj ct gu"cpf "eap xgt skal ngu "ks' j cu "r t ar augf "sa" kpvt qf weg"cp"cngtpcvg"rc{o gpv"o gej cpkuo "wukpi "Wpkkgf"Rc{o gpvu"Kpvgthceg" %WRK6+"cpf "eqpugs wgpv"t gf wevkqp"kp" vko grkpgu'lyt'hkukpi 'kp'c'rj cugf 'o cppgt0Ewttgpwf.'hyt'crrrkecvkqp'd{ 'TKKú'y tqwi j 'F guki pcvgf 'Kovgto gf kctkgu.''y g'gzkukpi " rt qeguu'qli'r j {ukecn'o qxgo gpv'qlihqto u'lt qo 'F guki pcvgf 'Kovgto gf kct kgu''\q'UEUDu'lqt 'dnqenkpi ''qlihwpf u'ku'f kweqpvkpwgf ''cpf'' TKKu"uwdo kwkpi "vj gkt "Crrrkecvkqp"Hqto u"vj tqwi j "F guki pcvgf "Kovgto gf kct kgu"*qvj gt "vj cp"UEUDu+"ecp"qpnf "wug"vj g"WRK" o gej cpłuo "y kij "gzkukpi "ko grkpg"qllV- 8"f c{u'wpvkrlOctej "53."4242"% WRKRj cug"KKô+0Hwtvj gt "UGDKvj tqwi j "kw"ektewrct" pq"UGDNJ QIEHF IF NV4 IEKT IR 14242 I72"f cvgf "O ctej "52."4242"j cu'f gelf gf "\q"eqpvlpwg"y kj "\j g"Rj cug"lKqh\\j g"WRKCUDC" vknilwt yj gt "pqvkeg0"J qy gxgt."f wg"vq"yj g"qwdt gcni'qh'EQXIF3; "r cpf go ke."WRKRj cug"IKij cu'dggp"lwt yj gt "gzvgpf gf "d{ "UGDK" wpvkt/hwtvj gt "pqvkeg."d{ "ku"ektewrct "*UGDKI QIEHF IF KN4 IEKT IR 14242 I/2 +"f cvgf "O ctej "52."42420"Vj gt gchgt."xkf g"UGDK" ektewrct 'pq0UGDKIJ QIEHF IVRF 3 IEKT IR 14245 1362 'f cvgf 'Cwi ww'; . '4245. 'Rj cug' KKKj cu'dggp 'pqvlikgf. 'cpf 'ceeqtf kpi n' 'kj g'' t gxkugf "\ko grkpg"qh\V- 5"f c{u"\Q0"\j g"\ko g"f wt c\kqp"lt qo "rwdrke"kuwg"erquwt g"\q"rkukpi "qh'dg"5"Y qtrhpi "F c{u+"j cu''dggp" o cf g"crrnlecdng"kp"vy q"rj cugu"klg0"%+"xqnwpvct{"hqt"cnl'rwdrle"kuwgu"qrgpkpi "qp"qt"chgt"Ugrvgo dgt"3."4245="cpf"%k+" o cpf cvqt {"qp"qt"chgt"F gego dgt "3."4245""\overline{o} WRKRj cug"KK\overline{o} \overline{O}Ceeqtf kpi n\tau."\y g"Kuwg"y kn'ldg"wpf gt vcngp"rwt uwc pv\'\q"\y g" rt qeguugu"cpf "rt qegf wt gu"wpf gt "WRK'Rj cug"KK"uwdl gev"vq"cp{ "ekt ewnct u."enct klkec skqp "qt "pqsklkec skqp "kuwgf "d{ "vj g"UGDK" htqo "\ko g"\q"\ko g0'H\m\n' gt."UGDKxkf g"ku"ektewrt "pq0'UGDKJ O1EHF IF KN41EKT IR 4243146: 2B10 "f cvgf "Octej "38."4243" tgcf" y kj" ektewrct" pq0' UGDKJ QIEHF IF KN4 IR IEKT H243 T/92" f cygf" Lwpg" 4." 4243" cpf" UGDK' ektewrct" pq0' UGDKIJ QIEHF IF KN4IEKT IR 4244 173" f cvgf "Crt kt'42."4244" cpf "UGDK'Ekt ewrct "pq0'UGDKIJ QIEHF IR IEKT 4244 197" f cvgf " Oc('52.'4244'j cu'kpvt qf wegf 'egt vckp'cf f kkqpcn'o gcuwt gu'hqt 'lwt gco nkpkpi ''ij g'rt qeguu'qhkpkkcn'r wdnke 'qhlgt u'cpf 't gf t guukpi '' kpxguvqt'i tkgxcpegu0'

Hwt y gt "xlf g" y g" uclf "ekt ewrct "Tgi kntct "\q" y g" Kunwg" cpf "F gr qukqt { "Rct vkekr cpvu" j cxg" dggp" cnuq" cwyj qt k| gf "\q" eqngev' y g" Cr r nkecvkqp" | nt "Kpxguaqt" o c { "xkukv" y g" qhlkekcn' y gdukvg" qhl' y g" eqpegt pgf "lqt" cp { "kplqt o cvkqp" qp" qr gt cvkqp cnk| cvkqp" qhl' y ku" hcekvk { "qhlqt o "eqngevkqp" il { "iy g" Tgi kntct" \q" y g" Kunwg" cpf "F gr qukvqt { "Rct vkekr cpvu" cu" cpf "y j gp" y g" uco g" ku' o cf g" cxckrcdng0"

CWJ QTKV['HQT'VJ G'RTGUGP V'KUVG''

Vj ku"Kuwg"j cu"dggp"cwj qtk gf "d{"c"tguqnwkqp"qh"qwt"Dqctf "qh"F ktgevqtu"r cuugf "cv"yj gkt"o ggvkpi "j grf "qp"F gego dgt."35." 4245. "uwdlgev"vq"vj g"crrtqxcn"qh"vj ctgj qrf gtu"vj tqwi j "c"ur gekcn"tguqnwkqp"vq"dg"r cuugf "r wtuwcpv"vq"Ugevkqp"84*3+*e+"qh"vj g" Eqo r cpkgu"Cev."4235"cv"vj g"I gpgtcn"O ggvkpi 0'Vj g"uj ctgj qrf gtu"j cxg"cwj qtk gf "vj g"Kuwg"d{"c"Ur gekcn"Tguqnwkqp"kp" ceeqtf cpeg"y kj "Ugevkqp"84*3+*e+"qh"vj g"Eqo r cpkgu"Cev."4235"r cuugf "cv"vj g"Gzvtc"Qtf kpct{"I gpgtcn"O ggvkpi "qh"qwt" Eqo r cp{"j grf "qp"F gego dgt"3: ."42450"

TCPMIPI 'QH'GS WKV['UJ CTGU'

Vj g''Gs wkx{ "Uj ctgu''dgkpi 'kunwgf ''uj cm''dg''uwdlgev''q''j g''r tqxkukqpu''qh''j g''Eqo r cpkgu''Cev.''cpf ''qwt''O qC''cpf ''CqC''cpf ''uj cm' tcpm'r ctk'r cunw'kp''cm'tgur gewi'y ky ''y g''gzkukpi ''Gs wkx{ "Uj ctgu''qh''qwt''Eqo r cp{ ''kpenwf kpi ''tki j wi'kp''tgur gev''qh''Ekkf gpf u''cpf '' qyi gt ''eqtr qtcvg''dgpghku. ''kh''cp{. ''f genctgf ''d{ ''wu''chygt ''y g''f cvg''qh''Cmqwo gpv0'Vj g''Cmqwggu. ''wr qp''Cmqwo gpv0'qh''Gs wkx{ ''Uj ctgu'' wpf gt ''y ku''Kunwg. ''y kn''dg''gpvkxrgf ''vq''tgegkxg''f kxlf gpf u''cpf ''qyi gt ''eqtr qtcvg''dgpghku. ''kh''cp{. ''f genctgf ''d{ ''qwt''Eqo r cp{ ''chygt'' yg''f cvg''qh''Cmqwo gpv0'Hqt''hwtyi gt''f gvckn. ''r rgcug''tghgt ''vq''ugevkqp'' vkxrgf .'' \div O c lp''Rt qxkdqpu''qh''Ct vkerg''qh''Cunqekc vkqpø.'' dgi kppkpi ''qp''r ci g''442 "qh''y ku'F tchv'Rtqur gewu0'



O QF G'QH'RC[O GP V'QHF KX HF GP F "

Vj g"f genetokqp"cpf 'r c{o gpv'qh'f kxkf gpf 'y kni'dg"cu'r gt"vj g"r tqxkukqpu'qh'Eqo r cpkgu'Cev.'4235.'Ctvkerg'qh'Cuuqekokqp.''vj g" rtqxkıkqp"qh"UGDK"*Nkıvkpi "Qdrki cvkqpu"cpf "F kıenquwtg"Tgs wktgo gpvu+"Tgi wrcvkqp."4237"cp{"qvj gt"twgu."tgi wrcvkqpu"qt" i wlf grlpgu'cu'o c{ "dg"kuuwgf "d{ "I qxgtpo gpv'qh"llfof kc"lp"eqppgevlqp"\j gtg"\q"cpf "cu'r gt"\j g"tgeqo o gpf cvlqp"d{ "\j g"Dqctf "qh" Fktgevqtu"cpf "y g"Uj ctgj qnf gtu"cv"y gkt "f kætgvkqp"cpf "y km"f gr gpf "qp"c"pwo dgt "qh"hcevqtu. "kpenwf kpi "dw"pqv"nko kgf "vq" gctplpi u. "ecr kıcıl'tgs wltgo gpui'cpf "qxgtcml'hlpcpelicnl'eqpf kılıqp"qhl'qwt "Eqo r cp{0'Y g"uj cml'r c{"f kxlıf gpf . "lip"ecuj "cul'r gt"vj g" $r t q x kukqpu''qh'' y g'' Eqo \ r c pkgu'' Cev'' c pf ''q wt'' C t v kengu''qh'' C u u q e kc v kqp0'' Hqt'' h w t y g t''f g v c knu'' kp'' t g n c v kqp'' v q''f kx kf g pf u. ''r ng c u g''t g h g t'' t g v c knu'' kp'' t g n c v kqp'' v q''f kx kf g pf u. ''r ng c u g''t g h g t'' t g v c knu'' kp''t g n c v kqp'' v q''f kx kf g pf u. ''r ng c u g''t g h g t'' t g v c knu'' kp''t g n c v kqp'' v q''f kx kf g pf u. ''r ng c u g''t g h g v c knu'' kp''t g n c v kqp'' v q''f kx kf g pf u. ''r ng c u g''t g h g v c knu'' kp''t g n c v kqp'' v q''f kx kf g pf u. ''r ng c u g''t g h g v c knu'' kp''t g n c v kqp'' v q''f kx kf g pf u. ''r ng c u g''t g h g v c knu'' kp''t g n c v kqp'' v q''f kx kf g pf u. ''r ng c u g''t g h g v c knu'' kp''t g n c v kqp'' v q''f kx kf g pf u. ''r ng c u g''t g h g v c knu'' kp''t g n c v kqp''t g n$ vq"ugevkqpu"vkrgf.":Fkxlf gpf 'Rqrhe{ø"cpf":O c hp 'Rt qxhrhqpu'qh'Ct vherg'qh'Cuuqehc vhqpø."dgi kppkpi "qp"r ci g"358"cpf "442" tgur gevkxgn(."qh"yj ku"Ftchv"Rtqur gevvu0"

HCEG'XCNWG'CPF'KUUWG'RTÆG'''

Vj g"hceg"xcnwg"qh"yj g"uj ctg"qh"qwt"Eqorcp{"ku" "32022"rgt"gs wkw{"uj ctg"cpf "yj g"kuuwg"rtkeg"ku" "] _"rgt"Gs wkw{"Uj ctg" O cpci gt "cpf "kı "lwıvkhkgf "wpf gt "yj g "Ugevkqp" 'kırgf ." *Dc ukıl hqt 'Kuwg'Rt kegø*. "dgi kppkpi "qp "r ci g '96 'qh 'yj kı 'F tch 'Rtqur gewu0"

Cv'cp{'i kxgp'r qkpv'qh'vko g''y gtg'uj cm'dg'qpn('qpg'f gpqo kpcvkqp'qh''y g'Gs wkx('Uj ctgu'qh'qwt'Eqo r cp{.'uwdlgev'vq''cr r nkecdig''

EQORNICPEG'Y KVJ 'KEFT'TGI WNCVKQPU'

Qwt"Eqorcp{"ujcmleqorn{"y ky "cmltgs wktgo gpwl"qhl"vjg"KEFT"Tgi wrcvkqpu."cu"co gpf gf "vko g"vq"vko g0""

EQORNKCPEG'Y KVJ 'FKVENQUWTG'CPF'CEEQWPVKPI 'PQTOU'

Qwt'Eqorcp{''uj cm'eqorn{''y ky ''cm'f kuenquwtg'cpf ''ceeqwpvkpi ''pqtou''cu'ur gekhkgf ''d{''UGDK'ntqo''vkog'' qu''vkog0''

TH J VU'QH'VJ G'GS WAV['UJ CTGJ QNF GTU'

Uwdlgev'\q'crrnlecdng'\tcy u.'twngu.'tgi wrcwlqpu'cpf 'i wkf gnlpgu'cpf 'iy g'CqC.'Yj g'Gs wkw{ "Uj ctgj qnf gtu'uj cmij cxg'Yj g'lqnqy kpi " tki j vu≺"

- Tki j v'vq'tgegkxg'f kxkf gpf.''kh'f genctgf=" c+
- d+ Tki j v'\q'tgegkxg''cppwcn'tgr qtvu''cpf ''pqvkegu'\q''o go dgtu="
- Tki j v'vq"cwgpf "i gpgtcn'o ggwpi u"cpf "gzgtekug"xqwpi "tki j vu. "wprguu"r tqj kdksgf "d{"rcy =" e+
- f +Tki j v'vq''xqvg''qp"c'r qm'gksj gt''\p'r gtuqp"qt''d{ 'rtqz{.'kp''ceeqtf cpeg'y ksj ''\j g'rtqxkskqpu''qh''\j g'Eqo r cplgu''Cev.''4235=''
- Tki j v'vq'tgegkxg''Kuuwg'hqt'tki j vu'uj ctgu'cpf 'dg''cmqwgf ''dqpwu'uj ctgu.''kh''cppqwpegf =" g+
- h+ Tki j v'vq'tgegkxg'uwtr nwu'qp''rks wkf cvkqp="uwdlgev'vq''cp{"uvcwwqt{"qt'r tghgtgpvkcri'encko u''dgkpi "ucvkuhkgf="
- i +
 - $Tki\ j\ v'qh'htgg'\ tcpuhgtcdhrk{\ ''qh'\ j\ g''Gs\ wkv{\ ''Uj\ ctgu.\ 'uwdlgev'\ q''cr\ r\ n'ecdng''ncy\ u.\ 'kpenwf\ kpi\ ''cp{\ ''TDK'twngu''cpf\ 'tgi\ wncwkqpu=''}$ cpf"
- $\label{thm:constraint} We j "q y j g t "t k j w "c u" o c \{ "d g "c x c k r c d r g ' u j c t g j q r f g t "q h ' c ' r k u y f "r w d r k e ' r k o k g f "eqo r c p \{ ' w p f g t ' y j g ' E qo r c p k g u ' C e v ' l g t ' y j g ' E qo r c p k g u ' C e v ' l g t ' y j g ' E qo r c p k g u ' C e v ' l g t ' y j g ' E qo r c p k g u ' C e v ' l g t ' y j g ' E qo r c p k g u ' C e v ' l g t ' y j g ' E qo r c p k g u ' C e v ' l g t ' y j g ' E qo r c p k g u ' C e v ' l g t ' y j g ' E qo r c p k g u ' C e v ' l g t ' y j g ' E qo r c p k g u ' C e v ' l g t ' y j g ' E qo r c p k g u ' C e v ' l g t ' y j g ' E qo r c p k g u ' C e v ' l g t ' y j g ' E qo r c p k g u ' C e v ' l g t ' y j g ' E qo r c p k g u ' C e v ' l g t ' y j g ' E qo r c p k g u ' C e v ' l g t ' y j g ' E qo r c p k g u ' C e v ' l g t ' y g ' E qo r c p k g u ' C e v ' l g t ' y g ' E qo r c p k g u ' C e v ' l g t ' y g ' E qo r c p k g u ' C e v ' l g t ' y g ' E qo r c p k g u ' C e v ' l g t ' y g ' E qo r c p k g u ' C e v ' l g t ' y g ' E qo r c p k g u ' C e v ' l g t ' y g ' E qo r c p k g u ' C e v ' l g t ' y g ' E qo r c p k g u ' C e v ' l g t ' y g ' E qo r c p k g u ' C e v ' l g u ' L e v ' l g u ' L e v ' l g u ' L e v ' l g u ' L e v ' l g u ' L e v ' l g u ' L e v ' l g u ' L e v ' l e v ' l e v ' l e v '$ j+ $4235. \label{eq:continuous} 4235. \label{eq:continuous} \label{eq:continuous} \text{$^{''}$ is a weakqpu'cpf'' is g'O qC''cpf'CqC''qh''qwt'' Eqorcp \{0'', 100\% \ \text{$^{''}$ is a continuous property of the prope$

Hqt "hwt y gt "f gyckru"qp "y g"o ckp"r tqxkukqp "qh"qwt "Eqo r cp {øu 'CqC 'f genkpi 'y ky "xqvkpi 't ki j w. "f kxkf gpf . 'hqthgkwt g"cpf "nkgp." vtcpuhgt "cpf "vtcpuo kuukqp"cpf "I'qt "eqpuqrkf cvkqp" I'ur rkvkpi . "gve0"r rgcug"t ghgt "vq "Ugevkqp "vkrgf . "*-O c lp 'Rt qxkukqp u'qh'sj g''* Ct whengu' qh' Cuuqe hc whap ø. "dgi kppkpi "qp"r ci g"442" qh' vj ku' F tchv' Rtqur gewu 0"

CNNQVO GPV'QPNI 'KP'FGO CVCTKCNK GF'HQTO''

Kp"\gto u"qh"Uge\kqp"4; "qh"\j g"Eqo r cpkgu"Cev."4235."\j g"Gs wkx{"Uj ctgu"uj cm'dg"Cmqwgf "qpn("kp"f go cvgtkcnkugf "hqto 0'Cu"r gt" yj g"gzkunkpi "KEFT"Tgi wrcnkqpu."vj g"tcfkpi "qh"vj g"Gswkv{"Uj ctgu"uj cm"qpn("dg"kp"f go cvgtkcnkugf "hqto "hqt"cm"Crrnkecpvu0Kp" yj ku"eqpygzv."yy q"ci tggo gpvu"j cxg"dggp"uki pgf "co qpi "qwt"Eqo r cp{."yj g"tgur gevkxg"F gr qukxqtkgu"cpf "yj g"Tgi kuxtct"vq"yj g" Kuwg<



Vtkrctvkxg'Citggogpv'fcvgf'Qevqdgt'33.'4245'dgwyggp'PUFN.''qwt'Eqorcp{'cpf'Tgikuvtct'vq'vjg'Kuvwg=cpf''

Vtkr ctvksg'Ci tggo gpv'f cvgf ''Qevqdgt''33.''4245''dgwy ggp''EFUN.''qwt''Eqo r cp{ ''cpf 'Tgi kuntct''vq''yj g''Kunwg0'

O IP KO WO 'CRRNIE CVKQP 'XCNWG.'O CTMGV'NQV'CPF 'VTCFIPI 'NQV'''

 $\label{thm:continuous} $$ Vtcf kpi 'qh'ij g''Gs wkw{ ''Uj ctgu'y km'j crr gp''kp''j g''o kpko wo ''eqpvtcev'uk| g''qh'i] _'Gs wkw{ ''Uj ctgu''kp''ygto u''qh'ij g''UGDK'ektewrct'' pq0'EKT IO TF IF UC 128 14234 ''f cvgf ''Hgdtwct { ''43. ''4234 ''cpf ''j g''uco g''o c { ''dg''o qf khkgf ''d { ''DUG''htqo ''vko g''q''vko g''d { ''i kxkpi '' r tkqt ''pqvkeg''vq''kpxguvqtu''cv''ncti g0''} $$$

Cmqeckqp"cpf "cmqvo gpv'qh"Gs wkx{ "Uj ctgu" yi tqwi j "yi ku"Kuwg"y km'dg"f qpg"kp"o wnkr rgu"qh"] _"Gs wkx{ "Uj ctgu" vq" yi g" uweeguuhwn" Crrnkecpvu0' Hwtyi gt." kp" ceeqtf cpeg" y kxj "UGDK' *KEFT+" Tgi wrcvkqpu" yi g"o kpko wo "crrnkecvkqp" ukt g"kp" vgto u"qh"pwo dgt "qh" ur gekhkgf "ugewtkkkgu" uj cm"pqv'dg "rguu" yi cp" Twr ggu" Qpg" Ncnj 'r gt"crrnkecvkqp0'

O IP KO WO 'P WO DGT 'QH'CNNQVVGGU''

Kp"ceeqtf cpeg"y kj "'y g"Tgi wcvkqp"48: "qh"KEFT"Tgi wcvkqpu."'y g"o kpko wo "pwo dgt"qh"Cmqwggu"kp"'y ki"Kuwg"uj cm'dg"72" uj ctgj qnf gtu0Kp"ecug"'y g"o kpko wo "pwo dgt"qh"r tqur gevkxg"Cmqwggu'ku"guu''y cp'72."pq"Cmqvo gpv'y km'dg"o cf g'r wtuwcpv''q" y ku'Kuwg"cpf "'y g"o qpkgu''dnqengf "d{"'y g"UEUDu''uj cm'dg"wpdnqengf 'y kj kp'6"Y qtnkpi "Fc{u''qh''enquwtg"qh''Kuwg0'

LQIP V'J QNF GTU'

Y j gtg"4"*wy q+"qt"o qtg"r gtuqpu"ctg"tgi kuvgtgf "cu"vj g"j qrf gtu"qh"cp{"Gs wkv{"Uj ctgu."vj g{"y km"dg"f ggo gf "vq"j qrf "uwej "Gs wkv{" Uj ctgu"cu"lqkpv"j qrf gtu"y kyj "dgpghku"qh"uwtxkxqtuj kr0'

PQO IP CVIQP 'HCEKNKV['VQ'IP XGUVQT''

 $\label{eq:control_co$

Kp"ceeqtf cpeg"y kj "Ugevkqp"94"qh"yj g"Eqo r cpkgu"Cev."4235."cp{ "Rgtuqp"y j q"dgeqo gu"c"pqo kpgg"d{ "xktwwg"qh"yj ku"ugevkqp" uj cm'wr qp"yj g"r tqf wevkqp"qh"uwej "gxkf gpeg"cu"o c{ "dg"tgs wktgf "d{ "yj g"Dqctf "qh"F ktgevqtu. "grgev"gkyj gt<""

- c+ vq"tgi kuvgt"j ko ugrh"qt"j gtugrh"cu"vj g"j qrf gt"qh"vj g"Gs wkv{ "Uj ctgu="qt""
- d+ vq"o cmg"uwej "tcpuhgt"qh"yj g"Gs wkv{ "Uj ctgu."cu"yj g"f gegcugf "j qrf gt"eqwrf "j cxg"o cf g0"

Hwt j gt. "qwt"Dqctf "qh'F ktgevqtu"o c{"cv'cp{"ko g'i kxg"pq-keg"tgs wktlpi "cp{"pqo kpgg"\q"ej qqug"gkj gt"\q"dg"tgi kngtgf"j ko ugnh" qt"j gtugnh"qt"\q"tcpuhgt"\j g"Gs wkv{"Uj ctgu."cpf "kh"\j g"pq-keg"ku"pqv'eqo r nkgf "y kj "y kj kp"c"r gtkqf "qh"; 2"f c{u."\j g"Dqctf "qh" F ktgevqtu"o c{"\j gtgchygt"y kj j qnf "r c{o gpv'qh"cm"f kxkf gpf u."dqp-wugu"qt"q\j gt"o qpg{u"r c{cdng"kp"tgur gev'qh"\j g"Gs wkx{" Uj ctgu. "wp-kn"\j g"tgs wktgo gp-w"qh"\j g"pq-keg"j cxg"dggp"eqo r nkgf "y kj 0"

Ulpeg"yj g"Cmqvo gpv"qh"Gs wkv{ "Uj ctgu"kp"yj g"Kuuwg"y km"dg"o cf g"qpn("kp"f go cvgtkcnk gf "hqto ."vj gtg"ku"pq"pggf "vq"o cmg"c" ugr ctcvg"pqo kpcvkqp"y kij "qwt Eqo r cp{0P qo kpcvkqpu"tgi kuvgtgf "y kij "yj g"tgur gevkxg"F gr qukvqt { "Rctvkekr cpv"qh"yj g"cr r nlecpv" y qwrf "r tgxckn0Kt"yj g"Cr r nlecpv"tgs wktg"ej cpi kpi "yj g"pqo kpcvkqp."vj g{ "ctg"tgs wguvgf "vq"kphqto "vj gkt"tgur gevkxg"F gr qukvqt { "Rctvkekr cpv"0' Rctvkekr cpv"0'



Y KVJ FTCY CN'QH'VJ G'KUWG'''

Kp"ceeqtf cpeg"y kj "vj g"UGDK*KEFT+Tgi wrcvlqpu."qwt"Eqo r cp{."kp"eqpuwncvlqp"y kj "Ngcf "O cpci gt."tgugtxgu"vj g"tki j v'pqv" vq"r tqeggf "y kj "vj ku"kuwg"cv"cp{"vko g"chygt"vj g"Kuwg"Qr gpkpi "F cvg."dw"dghqtg"qwt"Dqctf "o ggvkpi "hqt"Cmqvo gpv"y kj qw" cuuki pkpi "tgcuqpu"vj gtgqh0"

 $\label{thm:conditional} \textbf{K}i'qwt'Eqo\ r\ cp\{'y\ kj\ f\ tcy\ u'\ j\ g''Kuwg''chwgt''\ j\ g''Kuwg''Enqukpi\ ''F\ cvg.''y\ g''y\ km''i\ kxg'tgcuqp''\ j\ tggqh'y\ kj\ lp''y\ q''f\ c\{u''d\{'y\ c\{''qh'c''\ r\ wdrke''pqkeg''y\ j\ kej\ ''uj\ cm''dg''r\ wdrkuj\ gf\ ''kp''\ j\ g''uco\ g''pgy\ ur\ cr\ gtu'y\ j\ gtg''\ j\ tg''kuwg''cf\ xgt\ kugo\ gpwu'\ y\ gtg''r\ wdrkuj\ gf\ 0'''$

Hwt j gt. "j g'UqeniGzej cpi gu'uj cmi'dg'kphqto gf 'r tqo r w('kp''j ku'tgi ctf 'cpf ''j g'Ngcf 'O cpci gt. "j tqwi j ''j g'Tgi kutct'\q''j g'' Kuwg. "uj cmi'pqvkh(''y g''UEUDu''vq''wpdrqeni'y g''Dcpni'Ceeqwpw''qhi'y g''CUDC''Crrrkecpw''y kj kp''qpg''Y qtnkpi ''F c{ ''htqo ''y g'' f cwg''qhi'tgegkr v'qhi'uwej ''pqvkhlecvkqp0'

 $\label{lem:cong} \begin{tabular}{l}{l}{Kong''c'ngt''j'g''Kunwg''c'ngt''j'g''Kunwg''Erqulspi''Fcvg''cpf''uwdugs wgpvn{''f gelsf gu''vq''wpf gtvcng''c'r wdrle'' qhhgt lspi ''qhh'Gs wlw{'Uj ctgu.''qwt'Eqo r cp{''y knihkrg''c'htguj ''Qhhgt'Fqewo gpv'y kj ''y g'UvqenhGzej cpi g'y j gtg'yj g'Gs wlw{'Uj ctgu'' o c{''dg''r tqr qugf''vq''dg''htngf 0'''} \end{tabular}$

P qw ký uvcpf kpi "ý g"hqtgi qkpi ."ý g"Kuwg"ku"cnq"uvdlgev"q"qdvckpkpi "ý g"hkpcn"Nkukpi "cpf "Vtcf kpi "Crrtqxcn"qh'ý g"Uvqem" Gzej cpi g."ý j kej "ý g"Eqo r cp{ "uj cm"crrn{ "hqt"chgt"Cmqvo gpv0'Kp"vgto u"qh"ý g"UGDKTgi wnckqpu."P qp/Tgvckn"Crrnkecpvu" uj cm"pqv"dg"cmqy gf "vq"y ky f tcy "ý gkt"Crrnkecvkqp"chgt"ý g"Kuwg"Empukpi "F cvg0"

KUWG'RTQI TCO''

Rgt kqf 'qhiQr gt c vkqp'qhiUwduet kr vkqp'Nkw'qhiRwdnle'Kunvg0'

Kung'Qr gpu'dp''] _"
Kung'Enjugu'qp''] _"
Hlpcrlk cvkqp'lqhlDcuku'lqhlCmqvo gpv'y kyj 'tj g'F guli pcvgf 'UvqemGzej cpi g''] _"
Kolsikcvkqp''qhi'Cmqvo gpv'TTghwpf u'T'Wpdmemlpi ''qhi'Hwpf u'lit qo ''CUDC''Ceeqwpv''qt ''WRKTF''] _"
npngf 'dcpmceeqwpv, ''	
Etgf kv'qh'Gs wkv{ 'Uj ctgu'vq'Fgo cv'ceeqwpwu'qh'Cmqwggu''] _"
Eqo o gpego gpv'qh'ttcf kpi 'qh'tj g'Gs wks{ 'Uj ctgu'qp'tj g'Uvqem'Gzej cpi g''] _"

, Kp'ecug'qh'"

*k+ cp{"fgm{"kp"wpdmqemkpi "qh'co qwpwi"kp"yj g'CUDC'Ceeqwpwi kpenwfkpi "co qwpwi'dmqemgf"yj tqwi j "yj g"WRKO gej cpkuo +" hqt"ecpegmgf" I"y kyj ftcy p"I"fgmgwf "CUDC" Hqto u. "yj g"Crrnkecpv'uj cm'dg"eqo rgpucwgf "cv'c" wpkhqto "tcwg"qh! "322" rgt" fc{"qt"37' "rgt" cppwo "qh"yj g"Crrnkecwkqp" Co qwpv."yj kej gxgt" ku"j ki j gt"htqo "yj g"fcwg"qp"yj kej "yj g"tgs wguv"hqt" ecpegmcwkqp" I"y kij ftcy cn'l "fgmgwkqp" ku"rncegf "kp"yj g"Uqem Gzej cpi gu'Crrn{kpi "rncwhqto "wpwkn'yj g"fcwg"qp"yj kej "yj g" co qwpwl"ctg" wpdmqemgf"

*kl+ cp{"drqemkpi "qh'o wnkr rg"co qwpwi'hqt"'y g"uco g'CUDC"Hqto "*tqt"co qwpwi'drqengf "y tqwi j "y g"WRKO gej cpkno +:"y g"

Cr r nlecpv'uj cm'dg"eqo r gpucygf "cv'c"wpklqto "tcvg" "322"r gt"f c{"qt"37' "r gt"cppwo "qh'y g"vqvcn'ewo wrcvkxg"drqengf"

co qwpv"gzegr v'y g"qtki kpcn'cr r nlecvkqp"co qwpv."y j kej gxgt"ku"j ki j gt"htqo "y g"f cvg"qp"y j kej "uwej "o wnkr rg"co qwpw"

y gtg"drqengf "vkm'y g"f cvg"qh'cewcn'wpdrqen="

*kkk+ cp{"drqenkpi "qh"co qwpw"o qtg"yj cp"yj g"Crrnkecvkqp"Co qwpv."yj g"Crrnkecpv"uj cm"dg"eqo rgpucvgf "cv"c"wpkkqto "tcvg"qh" "322"rgt"fc{"qt"37" "rgt"cppwo "qh"yj g"fkthgtgpeg"kp"co qwpv."yj kej gxgt"ku"j ki j gt"htqo "yj g"fcvg"qp"yj kej "uwej "gzeguu" co qwpw"y gtg"drqengf "km"yj g"fcvg"qh"cewcn"wpdrqenr""

*kx+ cp{"f grc{"kp"wpdrqenkpi "qh"pqp/cnrqwgf "I"r ct \kcm\{"cnrqwgf "Cr r nlecvkqp."gzeggf kpi "hqwt"Y qtnkpi "Fc{u"htqo "\j g" Kuwg" Enqukpi "Fcvg."\j g"Cr r nlecp\"uj cnt"dg"eqo r gpucvgf "cv"c"wpkhqto "tcvg"qh" "322"r gt "fc{"qt"37' "r gt "cppwo "qht"\j g" Cr r nlecvkqp"Co qwpv."\y j kej gxgt "ku"j ki j gt "hqt"\j g"gpvktg"f wtcvkqp"qh"f grc{"gzeggf kpi "hqwt"Y qtnkpi "Fc{u"htqo "\j g" Kuwg" Enqukpi "Fcvg"d{"\j g"UEUD"t gur qpukdrg"hqt "ecwukpi "twej "f grc{"kp"wpdrqenkpi 0""

Vj g'r quv'Kuwg'NO "uj cm'dg''nkcdng''hqt"eqo r gpucvkpi "vj g'Cr r nkecpv'cv'c''wpkhqto "tcvg''qh" "322'r gt''f c{ "qt"37' "r gt"cppwo "qh" vj g'Cr r nkecvkqp'Co qwpv''y j kej gxgt "ku'j ki j gt "htqo "vj g"f cvg"qh'tgegkr v'qh'vj g"Kpxgunqt"i tkgxcpeg''wpkh'vj g"f cvg"qp''y j kej "vj g" dnqengf" co qwpvu" ctg" wpdnqengf 0' Hqt" vj g" cxqlxf cpeg" qh" f qwdv." vj g" r tqxkukqpu" qh" vj g" UGDK ektewrct" pq0' UGDKU QIEHF IF KN4 IEKT IR 4243 446: 213 IO "f cvgf" O ctej "38." 4243." cu" co gpf gf" r wtuvcpv' vq" UGDK ektewrct" pq0' UGDKU QIEHF IF KN4 IR IEKT 4243 1792'f cvgf "Lwpg"4."4243 "uj cm'dg'f ggo gf "vq"dg''kpeqtr qtcvgf "kp"vj g'f ggo gf "ci tggo gpv'qh" vj g"Eqo r cp{"y kyj "vj g"UEUDu'vq'vj g"gz vgpv'cr r nkecdng0'

-



Vj g'cdqxg''wo gwdrg''wi'pf kecwxg'cpf 'f qgu'pqv'eqpuwwwg'cp{ 'qdrki cwlqp''qp''qw' Eqorcp{ 'qt''y g'Ngcf'O cpci gt0Y j knw'qwt'' Eqorcp{ 'qt 'wj g'Ngcf'O cpci gt0Y j knw'qwt'' Eqorcp{ 'qt 'wj cm'gpuwtg''y cv'cm'wgr u'hqt''y g''eqor gwlqp''qh'y g''pgeguwct{ 'hqto crkkgu'hqt''y g''hkrkpi ''cpf''y g''eqoo gpego gpv'' qh''vtcf kpi ''qh''y g''Gs wkx{ ''Uj ctgu''qp''y g''Uqem'Gzej cpi g''ctg''vcmgp''y kyj kp''5''Y qtmkpi ''Fc{u''qh''y g''Dkf''l''Kuwg''Emqukpi ''Fcwg.'' y g''ko gwdng''o c{ 'ej cpi g'f wg''vq''xctkqwu'hcevqtu.''uwej ''cu''gz ygpukqp''qh''y g''Dkf''l'Kuwg''Rgtkqf''d{ ''qwt''Eqorcp{.'tgxkukqp''qh''y g'' Rtkeg'' Dcpf'' qt'' cp{ 'uf kgrkykqp''qh''y g'' Uyqem'Gzej cpi g''cy y g'' Eqoo gpego gpv'qh''ytcf kpi ''qh'y g''Gs wkx{ ''Uj ctgu''y kn'idg''gpvktgn{ ''cv'y g''f kwetgvkqp''qh''y g''Uyqem'Gzej cpi g''cpf ''kp''ceeqtf cpeg'' y kyj ''y g''crrrkecdrg''rcy u0'

 $\label{lem:condition} Crr \mbox{ recvkqp"Hyto u'cpf "cpf "tgxkukqpu'vq"y g"uco g"y km'dg"ceegr vgf "qpn("dgw ggp"32$\alpha2"c0b 0'vq"7$\alpha2"r0b 0'\mathbf{W}V+"f wtkpi "y g" Kuwg"Rgtkqf "\second vgr vhqt"y g"Kuwg"Emqukpi "F cvg-0Qp"y g"Kuwg"Emqukpi "F cvg-0'Vy g"Vr r \mbeckqp"Hyto u'y km'dg"ceegr vgf "qpn("dgw ggp"32$\alpha2"c0b 0'vq"5$\alpha2"r0b 0'\mathbf{W}V+"hyt"tgvckri'cpf "pqp/tgvckri'Crr r\mbeckqp"UVj g"\wo g"\mathbf{hyt} crr n\mathbf{kpi} "hyt"Tgvckri'\mathbf{kpi} kxkr wcri' Kpxguvqtu"qp"Kuwg"Emqukpi "F cvg"o c\mathbf{dg"gzvgpf gf "kp"eqpuwnvckqp"y ky j" y g"Ngcf "O cpci gt."Tgi kuvtct"cpf "U ctg"Vtcpulgt" Ci gpv'cpf "UO G"r rcvlqto "qh'DUG"Nko kgf "vcmkpi "kpvq"ceeqwpv'y g"\qvcn'pwo dgt"qh'Crr r\mbeckqpu'tgegkxgf "wr "vq"y g"emquwtg" qh'\wo kpi u0'$

Qp''y g'Dkf 1'Kuwg'Emukpi 'F cvg.''y g''Dkf u''uj cm'dg''wr mqcf gf ''wpvkrk''

**k+"6022"R00 0"KUV"kp"ecug"qh
'Dkfu'd{ ''S KDu'cpf 'P qp/Kpurkwrkqpcn'Dkff gtu. "cpf "

 $\label{thm:conditional} $$ kk+'wp\cdot kn' 7022'R000'KUV''qt''uwej''gz\cdot gpf gf''v g''cu'r gto kwgf''d {''y g''Uvqem'Gzej cpi g.''kp''ecug''qh''Dkf u''d {''T gvckn''Kpf kxkf wcn'' Dkf f gtu'0'} $$$

Qp"yj g"Dkf 1"Kuwg"Enqukpi "F cyg. "gz vgpukqp"qh'vko g'y km'dg"i tcpvgf "d{"yj g"Uvqem'Gzej cpi g"qpn('hqt"wr nqcf kpi "Dkf u'tgegkxgf " htqo "T gvckn' Kpf kxkf wcn' Dkf f gtu' chwgt "vcnkpi "kpvq" ceeqwpv' yj g"vqvcn' pwo dgt "qh' Dkf u'tgegkxgf "cpf "cu'tgr qt vgf "d{"yj g"Ngcf" O cpci gt 'vq' yj g"Uvqem'Gzej cpi g0'

Vj g"Tgi kntct" 'q" i g"Kuwg" ij cm'uwdo k" ij g"f gwknu" qh" 'ecpegngf I" y kij f tcy p I"f gngygf "cr r nlecvkqpu" 'q" i g"UEUDu" qp" c"f ckn(" dcuku" y kij kp" 82" o kpwgu" qh" ij g"Dkf "enquwtg" vko g"Itqo " ij g"Dkf I"Kuwg" Qr gpkpi "F cyg" vkni" ij g"Dkf I"Kuwg" Enqukpi "F cyg" d{" qdvckpkpi " ij g"uco g"Itqo " ij g"Uqeni"Gzej cpi gu0'V j g"UEUDu" uj cm' wpdnqeni'uwej "cr r nlecvkqpu" d{" ij g"enqukpi " j qwtu" qh" ij g" Y qtnikpi "F c{" 'cpf 'uwdo kv'ij g"eqphkto cvkqp" 'q' ij g"Ngcf 'O cpci gt" cpf 'ij g"TVC" qp" c"f ckn{" dcuku0"

Vq"cxqlsf"f wr rhecvlqp."vj g"hcekts/{ "qh"t g/kpkskcvlqp"r tqxlsf gf "vq"U{ pf kecvg"O go dgtu."kh"cp{ "uj cm"r tghgtcdn("dg"cmqy gf "qpn("qpeg"r gt "Dlsf ldcvej "cpf "cu"f ggo gf "hkv"d{ "vj g"Uqem'Gzej cpi g."chygt"enquwtg"qh"yj g"vko g"hqt"wr nqcf kpi "Dlsf uO"

Kl'ku"enctkhlef "vj cv'Dkf u"pqv'wr nqcf gf "qp"vj g"grgevtqpke"dkf f kpi "u{ uvgo "qt"kp"tgur gev'qhl'y j kej "vj g"hwni'Dkf "Co qwpv'ku"pqv' dnqengf "d{ "UE UDu"qt "pqv'dnqengf "wpf gt "vj g"WRKO gej cpkuo "kp"vj g"tgngxcpv'C UDC "Ceeqwpv."cu'vj g"ecug"o c{ "dg."y qwrf "dg" tglgevgf 0'

F wg"q"rko kcvkqp"qh"vko g"cxckrcdrg"hqt"wr mqcf kpi "yj g"Dkf u"qp"yj g"Dkf lQhtgt"Emqukpi "F cvg."Dkf f gtu"ctg"cf xkugf "vq"uwdo kv"yj gkt "Dkf u"qpg"f c{"r tkqt"vq"yj g"Dkf lQhtgt"Emqukpi "F cvg."cpf "ctg"cf xkugf "vq"uwdo kv"yj gkt "Dkf u"pq"rcvgt"yj cp"r tguetklgf "vko g" qp"yj g"Dkf l'Qhtgt"Emqukpi "F cvg."cpf "ctg"cf xkugf "vq"uwdo kv"yj gkt "Dkf u"pq"rcvgt"yj cp"r tguetklgf "vko g" qp"yj g"Dkf l'Qhtgt"Emqukpi "F cvg."uqo g"Dkf u"o c{"pqvi gv"vr mqcf gf "f wg"vq"rcemiqhiuwhlekgpv" vko g0'Uwej "Dkf u"yj cv"ecppqv"dg"wr mqcf gf "y kni'pqv"dg"eqpukf gtgf "hqt"cmqcvkqp"wpf gt"yj g"Qhtgt0'Dkf u"y kni'dg"ceegr wgf "qpn(" f wtkpi "Y qtmkpi "F c{u."f wtkpi "yj g"Dkf lQhtgt"Rgtkqf 0'Kpxguvqtu"o c{"r ngcug"pqvg"yj cv"cu"r gt "ngwyt"pq0'Nkuvluo f luo 14228"f cvgf "Lwn("5."4228"kuwgf "d{"DUG"cpf "P UG"tgur gevkxgn(."Dkf u"cpf "cp{"tgxkukqp" kp"Dkf u"uj cm"pqv"dg"ceegr wgf "qp"Ucwtf c{u."Uwpf c{u"cpf "r wdrke"j qnkf c{u"cu"f genctgf "d{"yj g"UvqemiGzej cpi gu0'Dkf u"d{" CUDC "Dkf f gtu"uj cm"dg"wr mqcf gf "d{"yj g"tgngxcpv"F guki pcvgf "Kpygto gf kct{"kp"yj g"gngevtqpke"u{uvgo "vq"dg"r tqxkf gf "d{"yj g"UvqemiGzej cpi gn0'Vj g" UvqemiGzej cpi gn0'Vj g" UvqemiGzej cpi gno'Vj g" byf lQhtgt"kgtlqf "kwf7022"ro "qp"yj g"Dkf lQhtgt"Emqukpi "F cvg"chygt"y j kej "yj g"UvqemiGzej cpi g"uhf "kphqto cvkqp" vq"yj g"Tgi kutct"vq"yj g"Qhtgt"hqt"hwtyj gt"r tqeguukpi 0""

Ko"ceeqtfcpeg"y kj "KEFT"Tgi wcvkqpu."S KOu"cpf"Pqp/Kpurkwrkqpcn"Crrnecpu"ctg"pqv"cmqy gf "vq"y kj ftcy "qt"mqy gt"yj g" ukj g"qh"yj gkt"crrnecvkqp"%kp"vgto u"qh"yj g"S wcpvkv{"qh"yj g"Gs wkx{"Uj ctgu"qt"yj g"Crrnecvkqp"Co qwpv+"cv"cp{"uvci g0"Tgvcktl" Kpfkxkfwcn"Kpxguvqtu"ecp"tgxkug"qt"y kj ftcy "yj gkt"Crrnecvkqp"Hqto u"rtkqt"vq"yj g"Knuwg"Empukpi "Fcvg0"Cmqecvkqp"vq"Tgvcktl" Kpfkxkfwcn"Kpxguvqtu."kp"yj ku"Knuwg"y kni'dg"qp"c"rtqrvkqpcvg"dcuku0"

 $\label{thm:cushed} \begin{tabular}{l} $K_0^* = C_0^* \ K_0^* \ K_0^*$



O IP KO WO 'UWDUET KRVKOP 'CPF 'WPFGTY TKVIPI '''

Kp"ceeqtfcpeg"y knj "Tgi wrcvkqp"482"*3+"qh"KEFT"Tgi wrcvkqpu."vj ku"Knuwg"ku"322' "wpfgtytkwgp."uq"vj ku"Knuwg"ku"pqv"tguvtkevgf" vq"cp{"o kpko wo "uwduetkrvkqp"ngxgn0"

Cu'r gt 'luge 'kqp'5; ''qh''y g''pgy 'Eqorcpkgu''Cev.''kh''y g'`\buvcygf ''o kpko wo ''co qwp v\bo''j cu''pqv''dggp 'luwduetkdgf ''cpf ''y g''uwo ''r c $\{cdng'' qp''Crrnkeckqp''ku''pqv''tgegkxgf ''y ky kp''c''r gtkqf ''qh''52'f c<math>\{u''htqo''y g''fcvg''qh'''Rtqurgewu.''y g''Crrnkeckqp''Co qwpv''j cu''vq''dg''tgwtpgf ''y ky kp''uwej ''r gtkqf ''cu''o c<math>\{''dg''r tguetkdgf0''$

 $\label{thm:composition} \textbf{K} i'qwt'Eqo\ r\ cp\{'f\ qgu'pqvtgegkxg''j\ g'uwduetkr\ vkqp''qh'322' \ ''qh''j\ g''Kuwg''j\ tqwi\ j\ ''yj\ ku''Qlhgt''f\ qewo\ gpvtpennf\ kpi ''f\ gxqnxgo\ gpvt'qh''Wpf\ gty\ tkgtu. ''qwt''Eqo\ r\ cp\{''uj\ cmi'hqt'j\ y\ kj\ ''wpdmem''j\ g''gpvktg'uwduetkr\ vkqp''co\ qwpv'tgegkxgf\ 0'Kt''yj\ gtg''ku''c''f\ gmc\{''dg\ qpf''\ : ''f\ c\{u''chngt''qwt''Eqo\ r\ cp\{''uj\ cmi'r\ c\{''kpvgtguv''r\ tguetkdgf''wpf\ gt''ugevkqp''95''\ qh''j\ g''Eqo\ r\ cpkgu''Cev''4235''cpf''cr\ r\ nkecdng''ncy\ 0'$

Kp"ceeqtf cpeg"y ky "Tgi wrckqp"482"*3+"qh"y g"UGDKKEFT"Tgi wrckqpu."qwt"Kuwg"uj cm"dg"j wpf tgf "r gtegpv"wpf gty tkwpp0' Vj wu."yj g"wpf gty tkkpi "qdrki cvkqpu"uj cm"dg"hqt"yj g"gpktg"j wpf tgf "r gtegpv"qh"yj g"Kuwg"yj tqwi j "vj ku"Ftchv"Rtqur gewu"cpf "uj cm"pqv"dg"tguntkevgf "q"yj g"o kpko wo "uwduetkr vkqp"gxgn0Hwtyj gt."kp"ceeqtf cpeg"y ky "Tgi wrcvkqp"489"*4+"qh"yj g"UGDKKEFT" Tgi wrcvkqpu."qwt "Eqo r cp{"uj cm"gpuwtg"yj cv"yj g"o kpko wo "crrrkecvkqp"ukk g"uj cm"pqv"dg"hguu"yj cp" "3022"Ncnj u"*Twr ggu"Qpg" Ncnj +"r gt"crrrkecvkqp0'

Vj g'Gs wkx{"Uj ctgu"j cxg"pqv'dggp"cpf "y km'pqv'dg"tgi kuvgtgf."rkuvgf "qt"qvj gty kug"s wcrkhkgf "kp"cp{"qvj gt"lwtkuf kevkqp"qwwukf g"
Kpf kc"cpf "o c{"pqv'dg"kuuwgf "qt"uqrf."cpf "Crrnkecvkqpu"o c{"pqv'dg"o cf g"d{"r gtuqpu"kp"cp{"uwej "lwtkuf kevkqp."gzegr v'kp"
eqo rnkcpeg'y kyj "yj g'crrnkecdrg'rcy u'qh'uwej "lwtkuf kevkqp0'

CTTCPI GO GP VUHQT'FKURQUCN'QH'QFF'NQVU'

Vj g"ttcf kpi "qh" j g"Gs vkk{ "Uj ctgu" y km" j cr r gp" kp" y g"o kpko wo "eqpvtcev" ukt g"qh"] _"Gs vkk{ "Uj ctgu" kp" y gto u"qh" y g"UGDK Ektewrct" P q0"EKT lO TF IF UC 128 14234" f cygf "Hgdtwct { "43."42340" J qy gxgt." kp" y gto u"qh" Tgi wrc kqp" 483" *7+" qh" y g"KEFT" Tgi wrc kqpu." y g"O ctngv" O cngt" uj cm" dw{ "y g"gpvktg" uj ctgj qnf kpi "qh" c"uj ctgj qnf gt" kp" qpg" nqv" y j gtg" xcnwg" qh" uwej "uj ctgj qnf kpi "ku" y g"o kpko wo "eqpvtcev" ukt g"cnqy gf "hqt" tcf kpi "qp" y g"UO G"r rc vhqto "qh" DUGO"

CRRNNECVKQP'D['GNN KONG'PTKU'HRKU'THKKU'TGI KUVGTGF'Y KVJ 'UGDK'XEHU'TGI KUVGTGF'Y KVJ 'UGDKCPF'GNN KONG'S HKU'

KVkı'\q'dg'\wpf gtuvqqf ''yi cv'\j gtg'\ku'pq'tgugtxcv\qp''\qt''Grki kdrg''P TKi'qt''HRKi'T'HKKi'tgi kuvgtgf ''y kij ''UGDK'qt''XEHu''qt'Grki kdrg'' S HKi0'Uwej ''Grki kdrg''P TKi. ''Grki kdrg''S HKi. ''HKKi'tgi kuvgtgf ''y kij ''UGDK'y kni'dg''\tgcvgf ''qp''\j g''uco g''dcuku''y kij ''qvj gt''ecvgi qt\gu'' hqt''\j g'r wtr qug''qh''cmqecv\qp0'

 $PTKi."HRKi"THKKi"cpf "hqtgki p"xgpwtg"ecr kcn'lpxguvqtu'tgi kngtgf "y kj "UGDKctg"r gto kngf "vq"r wtej cug"uj ctgu'qh'cp"Kpf kcp" eqo r cp{"kp"c"r wdrke "kuung"y kj qwv'y g"r tkqt"cr r tqxcn'qh'vj g"TDK'uq"nqpi "cu"'y g"r tkeg"qh'vj g"Gs wk{"Uj ctgu'vq"dg"kuungf "ku" pqv'nguu''y cp"vj g"r tkeg"cv'y j kej "vj g"Gs wk{"Uj ctgu'ctg'kuungf "vq"tgukf gpvu0'Vj g"vtcpuhgt "qh'uj ctgu'dgw ggp"cp"Kpf kcp"tgukf gpv' cpf "c"pqp/tgukf gpv'f qgu'pqv'tgs wktg''y g"r tkqt"cr r tqxcn'qh'vj g"HKRD"qt''y g"TDK''r tqxkf gf "vj cv\%kr''y g"cevkxkkgu'qh'vj g"kpxgungg" eqo r cp{" ctg" wpf gt" vj g" cwqo cvke" tqwg" wpf gt" vj g" hqtgki p" f ktgev' kpxguno gpv' %HF K6+" Rqnke{" cpf " vj g" pqp/tgukf gpv' uj ctgj qnf kpi "ku"y ky ky kp" y g"ugevqtcn'nko knu"wpf gt" vj g"HF Kr qnke{="cpf" %kk+" y g"r tkekpi "ku"kp"ceeqtf cpeg"y ky "vj g"i wkf gnkpgu" r tguetklgf "d{" 'vj g"UGDK'ITDKO'}$

Vj g'ewttgpv'r tqxkukqpu'qh'\j g'Hqtgki p'Gzej cpi g'O cpci go gpv*Vtcpuhgt'qt'Kunwg'qh'Ugewtk\{ "d\ "c''Rgtuqp'Tgukf gpv'qwukf g'' kfo kc+'Tgi wcvkqpu.'4222.'r tqxkf gu'c'i gpgtcni'r gto kunkqp'hqt'\j g'P T Kı. 'HRKi'cpf 'hqtgki p''xgpwtg'ecr kcnikpxguvqtu'tgi knygtgf "y kj "UGDK'q'\pxguv'kp''uj ctgu'qh'Kfo kcp'eqo r cpkgu'd\ 'y c\ "qh''uwduetkr vkqp''kp''cp''KRQ0I qy gxgt.''uwej 'kpxguvo gpvu'y qwrf''dg'' uwdlgev'vq'qyj gt'kpxguvo gpv\tguxtkevkqpu'wpf gt'\y g'Hqtgki p'Gzej cpi g'O cpci go gpv*Vtcpuhgt'qt'Kunwg'qh'Ugewtk\{ "d\ "c''Rgtuqp'' Tgukf gpv'qwukf g'Kfo kc+'Tgi wcvkqpu''4222.''TDK'cpf''l'qt'UGDK'tgi wcvkqpu''cu'o c\ "dg''crrrhecdrg''vq''uwej 'kpxguvqtu0'

 $\label{lem:condition} Vj g'Cmqvo gpv'qh'ij g'Gs wkw{ 'Uj ctgu'\q'P qp/T gukf gpwi'\uj cm'dg'\uwdlgev'\q'\uj g''eqpf kkqpu. 'kh'cp{.''cu'o c{ 'dg'r tguetkdgf 'd{ '\uj g'' I qxgtpo gpv'qh'Kpf kc''l'TDKy j krg'i tcp\upi 'uwej ''crrtqxcn0'}$

CU'RGT''VJ G''GZVCPV''RQNÆ[''QH'VJ G'I QXGTPO GPV''QH'IPFIC.''QEDU'ECPPQV''RCTVÆIRCVG'IP'' VJ KUKUWGO'

Cu"r gt "y g"gzkukpi "tgi wcvkqpu."QEDu"ctg"pqv'grki kdrg"vq"r ctvkekr cvg"kp"y ku"Kuwg0'Vj g"TDKj cu"j qy gxgt"erctkkgf "kp"ku" ektewrct."C(R0'*F KT"Ugtkgu+'Ektewrct"P q0'66. 'f cvgf "F gego dgt": ."4225"y cv'QEDu'y j kej "ctg"kpeqtr qtcvgf "cpf "ctg"pqv'wpf gt" y g"cf xgtug"pqvkeg"qh'y g"TDK'ctg'r gto kwgf "vq"wpf gt vcng'htguj "kpxguvo gpwi'cu'kpeqtr qtcvgf "pqp/tgukf gpv'gpvkkgu'kp'vgto u'qh" Tgi wrcvkqp"7*3+"qh'TDKP qvkhecvkqp"P q0'42 14222/TD"f cvgf "O c{"25."4222"wpf gt"HF KUej go g"y ksj "vj g"r tkqt"crrtqxcri'qh"

-



I qxgtpo gpv'kh'ij g'kpxguvo gpv'ku'ij tqwi j 'I qxgtpo gpv'Tqwg'cpf 'y kj 'ij g'r tkqt'crr tqxcn'qh'TDKkh'ij g'kpxguvo gpv'ku'ij tqwi j " Cwqo cvke"Tqwg"qp"ecug"d{"ecug"dcuku0'QEDu"o c{"kpxguv'kp"yj ku"Kuwg"rtqxkf gf "kv'qdvckpu"c"rtkqt"crrtqxcn'htqo "yj g"TDK0" Qp"uwdo kuulqp"qh"uwej "crrtqxcn"cnqpi "y kaj "vj g"Crrnkecvlqp"Hqto ."vj g"QED"uj cm'dg"gnki kdng"vq"dg"eqpuld gtgf "hqt"Gswkv{" Uj ctg'cmqecvkqp0'

TGUVTKEVKQPU'QP''VTCPUHGT'CPF''VTCPUO KUUKQP''QH''UJ CTGU'QT'FGDGPVWTGU'CPF''QP''VJ GKT'' EQPUQNIFCVKQP'QT'URNKVVKPI "

Gzegr v'hqt'iqem'kp''qh''y g't tg/kuuwg'Gs wkx{ 'Uj ctgu'cpf 'Rtqo qvgtu'o kpko wo 'eqpvtkdwkqp'kp''y g'Kuuwg'cu'f gvckrgf 'kp''y g'Ugevkqp'' vkngf."-*Ecr hic il Ukt wewit gø.*"dgi kppkpi "qp"r ci g"78"qh"yj ku"F tch/"Rtqur gewu."cpf "gzegr v'cu"r tqxkf gf "kp"yj g"CqC"qh"qwt" $Eqo\ r\ cp\{."\ 'j\ gtg"\ ctg"\ pq"\ tcpuh\ tcpuh\ t'\ cpf\ '\ tcpuo\ kuukqp"\ cpf\ ''qp'\ j\ gkt''\ eqpuqn\ f\ cvkqp"\ l'ur\ nkvkpi\ ''\ l'Uj\ ctgu0\ Hqt''$ hwt y gt "f gocku."r ngcug't ghgt "vq"y g"Ugevkqp"kxngf .": O c lp 'Rt qxlulqpu't|h'ly g'Ct vlengu't|h'Cunqelc vlqp ø."dgi kppkpi "qp"r ci g"442" qh'y ku'F tchv'Rtqur gewu0'

Vj g"cdqxg"kphqto cvkqp"ku'i kxgp"hqt"yj g"dgpghky'qh''yj g"Crrnkecpw0'Vj g"Crrnkecpw0'Vj g"Crrnkecpw0'Ctg"f xkugf "vq"o cng"yj gkt"qy p"gps wktkgu" $cdqw''y g'' nko ku'' cr r nkecdng''vq''y go 0'Qwt'' Eqo r cp \{ "cpf''y g'' Ngcf'' O cpci gt''f q''pqv'' ceegr v''cp \{ "tgur qpukdkrkx \{ "hqt''y jg'' Ngcf'' O cpci gt''f q''pqv'' ceegr v''cp \} \} = 0$ $eqo\ r\ gygguu''cpf\ "ceewtce \{ "qh''yj\ g''lphqto\ cwlqp''uwcygf\ "j\ gtglpcdqxg0''Qwt''Eqo\ r\ cp \{ "cpf\ "'yj\ g''Ngcf\ "O\ cpci\ gt "ctg''pqv''nlcdrg''q'' | left for the cylling of the cylling of$ kphqto "yʻg "Crrnkecpvu"qh"cp { "cogpfogpvu"qt"oqfkhkecvkqpu"qt"ejcpigu"kp"crrnkecdng"ncyu"qt"tgiwncvkqpu."yʻjkej "oc{"qeewt" chygt "y g"f cvg"qh" y ku"F tchv"Rtqur gewuu0Crr nlecpvu" ctg" cf xkugf "vq" o cng" y gkt "kpf gr gpf gpv" kpxguvki cvkqpu" cpf "gpuwtg" y cv" y g" pwo dgt "qh"Gs wkx{ "Uj ctgu"crrnkgf "hqt"f q"pqv"gzeggf "vj g"crrnkecdng"nko kuu"wpf gt "ncy u"qt "tgi wncvkqpu0"

PGY 'HIP CPEICN'IP UVT WO GP VU'

Cu'qp" y g'f cvg" qh' y ku'F tchv'Rtqur gewu. "y gtg" ctg" pq" qwuncpf kpi "y cttcpvu. "pgy "hkpcpekcn'hpuntwo gpvu' qt" cp { "tki j vu. "y j kej " y qwrf "gpvkrg"'yi g"uj ctgj qrf gtu"qh"qwt "Eqo r cp{."kpenwf kpi "qwt "Rtqo qvgt."vq"ces wktg"qt "tgegkxg"cp{ "Gs wkx{ "Uj ctgu"chvgt"vj g"

CNNQVO GP V'QH'GS WKV['UJ CTGU'R' FGO CVGTKCNK, GF 'HQTO "

Kp"ceeqtfcpeg"ykj"yg"KEFT"Tgiwcvkqpu."Cmqvogpv'qh"Gswkx{"Ujctgu"vq"uweeguuhxn"Crrnkecpvu"ykn"qpn{"dg"kp"yg" f go cygtkenkl gf "hqto 0'Crrnkeepvu"y km"pqv"j exg"vj g"qrvkqp"qh"Cmqvo gpv"qh"vj g"Gs wkx{"Uj etgu"kp"rj {ukeen"hqto 0'Vj g"Gs wkx{" Uj ctgu'qp'Cmqvo gpv'y kn'ldg''stcf gf ''qpn'(''qp''y g'f go cvgtkcnk gf ''ugi o gpv'qh''y g''Uqem'Gzej cpi g0'

O N TCVKQP'VQ'O CKP'DQCTF"

DUG"Ektewrct "f cvgf "O ctej "32."4236."qwt "Eqo r cp{ "y kmij cxg" \q"dg"o cpf cvqtkn{ "rknvgf "cpf "\tcf gf "qp" \j g"UO G"Rrcv\qtto "qh" DUG'Nko ksgf 'hqt'c'o kpko wo 'r gtkqf 'qh'y q"{ gctu'htqo ''y g'f cvg'qh'hkrkpi ''cpf ''qpn{ ''chsgt''y cv'ks'ecp'o ki tcvg''vq''y g'O ckp'Dqctf'' qh'yj g"DUG"cu'r gt "yj g"i wkf grkpgu'ur gekhlgf "d{ "UGDK'cpf "cu'r gt "yj g"r tqegf wtgu'rckf "f qy p"wpf gt "Ej cr vgt "KZ "qh'yj g"UGDK' *KEFT+Tgi wrcvkqpu.'423: 0'

Cu'r gt''y g'r tqxkukqpu''qh''y g'Ej cr ygt'KZ 'qh''y g'UGDK*KEFT+'Tgi wncvkqp.''423: .''qwt'Eqo r cp{ "o c{ "o ki tcvg''q''y g'o ckp''dqctf" qh'DUG'htqo "vj g"UO G'Rrevhqto "qh'DUG'Nko kgf "qp"c"revgt 'f cvg"uwdlgev'vq'vj g'hqmqy kpi <"

Kt'y g'r ckf/wr "Ecr kxcn'qh'y g'eqo r cp{ 'ku'o qtg'y j cp" "32"etqtgu'cpf 'wr "\q" "47"etqtgu."y g'o c{ "o ki tcvg"gs wkw{ "uj ctgu'\q"y j g" o ckp"dqctf"qh"\j g"uvqem'gzej cpi gu"kh"uj ctgj qnf gtu"crrtqxg"uwej "c"o ki tc\kqp"d{"rcuukpi "c"urgekcn'tguqnwkqp"\j tqwi j "rquvcn" $\label{eq:continuity} dcmq'vq''y ku'ghgev'cpf''kh'Eqorcp{'hwhku'y} g''grki klkkk{ "etkgtkc'hqt''kknkpi "hckf''f qy p''d{''y} g''O ckp''Dqctf'' klkkt{ "etkgtkc''hqt''kknkpi "hckf''f qy p'''d{''y} g''O ckp''Dqctf'' klkkt{ "etkgtkc''hqt''kknkpi "hckf''f qy p''d{''y} g''O ckp''Dqctf'' klkkt{ "etkgtkc''hqt''kknkpi "hckf''f qy p''d{''y} g''O ckp''Dqctf'' klkkt{ "etkgtkc''hqt''kknkpi "hckf''f qy p''d{''y} g''O ckp''Dqctf'' klkt{ "etkgtkc''hqt''kknkpi "hckf'' klkt{ "etkgtkc''hqt''kknkpi "hckf''kknkpi "hckf'' klkt{ "etkgtkc''hqt''kknkpi "hckf'' klkt{ "etkgtkc''hqt''kknkpi "hckf''kknkpi "hckf'' klkt{ "etkgtkc''hqt''kknkpi "hckf''kknkpi "hckf''kknpi "hckf''kknpi "hckf''kknpi "hckf''kknpi "hckf''kknpi "hckf''kknpi "hckf''kkn$

Rtqxkf gf "'y cv'yj g''ur gekcn'tguqnwkqp''uj cm'dg''cevgf "wr qp''kh''cpf "qpn("kh''yj g''xqvgu''ecuv''d{ "uj ctgj qrf gtu''qyj gt''yj cp''r tqo qvgtu" kp"hcxqwt"qh"yi g"r tqr qucn"co qwpv'vq"cv'ngcuv'wy q"vko gu"yi g"pwo dgt"qh"xqvgu"ecuv'd{ "uj ctgj qnf gtu"qyj gt"yi cp"r tqo qvgt" uj ctgj qnf gtu'ci ckpuv'vj g'r tqr qucn0'

Y j gtg'\j g'r quv/kuwg'hceg'xcrwg'ecr kxn'qh'\j g'Eqo r cp{ 'hkwgf 'qp'c'UO G'gzej cpi g'ku'hkngn('\q'kpetgcug'dg{qpf '\y gpv{ 'hkxg'' etqtg'twrggu'd{ 'xktwg'qh'cp{ 'hwtyi gt'kuwg''qh'ecrkcn'd{ 'y g'Eqorcp{ 'd{ 'y c{ 'qh'tki j w'kuwg. 'r tghgtgpvkcn'kuwg.''dqpwu'kuwg.'' gve0'yj g"Eqo r cp{ "uj cm'o ki tevg"kuu'ur gekhlgf "ugewtkskgu'rkuvgf "qp"c"UO G"gzej cpi g"vq"yj g"O ckp"Dqctf "cpf "uggmirkuvkpi "qh"vj g" ur gekhkgf "ugewtkkgu"r tqr qugf "vq"dg"kuwgf "qp"'y g"O ckp"Dqctf "uwdlgev"vq"'y g"hwrhkro gpv'qh"\y g"grki kdkrk{ "etksgtkc"hqt"rkurkpi "qh" ur gekhkgf "ugewtkkkgu"nckf "f qy p"d{ "vj g"O ckp"Dqctf <"

Rtqxkf gf "vj cv"pq"hwtyj gt "kuuwg"qh"ecr ken'd { "vj g"Eqo r cp { "vj cm"dg"o cf g"wprguu="



 v_j g' v_j g'

- c+ y g"xqvgu"ecuv"d{"uj ctgj qrf gtu"qy gt"y cp"rtqo qvgtu"lp"hcxqvt"qh"y g"rtqr qucri'co qwpv'vq"cv'rgcuv'y q"vlo gu"y g"pwo dgt" qh"xqvgu"ecuv"d{"uj ctgj qrf gtu"qy gt"y cp"rtqo qvgt"uj ctgj qrf gtu"ci clpuv"y g"rtqr qucr="
- d+ yj g'Eqorcp{'j cu'qdvckpgf'cp'kp/rtkpekrrg'crrtqxcrlhtqo''yj g'Ockp'Dqctf'hqt'rkuvkpi'qh'kuu'gpvktg''ur gekhkgf''ugewtkskgu''qp'' kt0'

O CTMGV'O CMIPI "

Vj g''Gs wkk{ "Uj ctgu'qhtgtgf "vj tqwi j "vj ku''Kuwg''ctg''r tqr qugf "vq''dg''nkuvgf "qp''y g''UO G''Rncvhqto "qh''DUG''Nko kgf ."y j gtglsp''y g'' O ctngv''O cngt'''q''y ku''Kuwg''uj cm''gpuwtg''eqo r wuxqt { "O ctngv''O cmlpi "vj tqwi j "vj g"tgi kungtgf "O ctngv''O cngtu''qh''y g''UO G'' r ncvhqto "qh''DUG''hqt''c''o kpko wo "r gtkqf "qh''5"{ gctu'htqo "vj g''f cvg''qh'hkuvkpi "qp''y g''UO G''Rncvhqto "qh''DUG''Nko kgf 0'Hqt'hwtyi gt'' f gvcknu'qh''y g''i tggo gpv'gpygtgf 'kpvq''dgwy ggp''qwt'Eqo r cp{ : "vj g'Ngcf 'O cpci gt''cpf "vj g'O ctngv'O cngt''r ngcug''tghgt "vq'Ugevkqp'' vkngf ."ö*I gpgtcnliphqto cvkqp"*. "dgi kppkpi "qp''r ci g''6: "qh''y ku''F tchv'Rtqur gewu0''

Kp''ceeqtf cpeg''y kj ''y g'UGDKEktewrt'Pq0EKT 10 TF IF UC 153 14234 'f cvgf 'Pqxgo dgt''49. ''4234 = kv'j cu'dggp'f gekf gf ''vq''o cmg'' cr r n'ecdng''ho ku''qp''y g''w r gt''ukf g'hqt''y g'O ctngv'O cngtu'f wtkpi ''o ctngv'o cmkpi ''r tqeguu''cmkpi ''kpvq''eqpukf gtcvkqp''y g''Kuwg'' ukj g''kp''y g'hqmqy kpi ''o cppgt<'''

Kung'ik g'	Dw{ 's wqvg'gzgo r vkqp'vj t guj qrf '' *kpenvf kpi 'o cpf cvqt { 'kpkskcn'	Tg/gpvt { 'vj t guj qrf 'lqt 'dw{ 's wqvgu' *lpenvf lpi 'b cpf cvqt { 'lplslcrl'	
	kpxgpvqt { 'qh'7' 'qh'kuwg'tik g+''	kpxgpvqt { 'qh'7' 'qh'kuwg'tik g+''	
Wrvq" 42"Etqtg"	47' "	46' "	

Hwt j gt." j g"O ctngv'O cngt "uj cm'i kxg"*4+"Vy q"y c {u"s wqvgu"vkm'k/"tgcej gu" j g"wr r gt "nko kv' j tguj qnf =" j gtgchvgt "kv" j cu" j g" qr vkqp" q'i kxg"qpn("ugm's wqvgu0Vy q"*4+"y c { "s wqvgu"uj cm'dg"tguwo gf " j g"o qo gpv'kpxgpvqt { "tgcej gu' j g"r tguetkdgf "tg/gpvt { " y tguj qnf 0"

Kp"xkgy "qh"yi g"O ctngv"O cngt "qdnki cvkqp."yi gtg"uj cm"dg"pq"gzgo r vkqp kj tguj qnf "qp"f qy pukf g0'J qy gxgt."kp"yi g"gxgpv'yi g" O ctngv'O cngt "gzj cwuwikwikpxgpvqt { "yi tqwi j "o ctngv'o cnkpi "r tqeguu'qp"yi g"r ncvkqto "qh'yi g"gzej cpi g."yi g"eqpegtpgf 'uvqeni' gzej cpi g"o c { "kpvko cvg"yi g'uco g"vq"UGDKchvgt"f wg"xgtkhkecvkqp0'

LWTKUF KEVKOP"

Gzenwukzg'lwtkuf kevkqp'hqt'vj g'r wtr qug'qh'vj ku'Kuwg'ku'y kyj ''vj g''eqo r gvgpv''eqwt vu''l''cwyj qtkkgu'kp''Mqmrcvc.''Kpf kc0'

Vj g'Gs wkx{ "Uj ctgu'j cxg'pqv'dggp"cpf "y kni'pqv'dg'tgi kngtgf "wpf gt "yi g"WUDUgewtkkgu'lCev'qt"cp{ "uvcyg'ugewtkkgu'lrcy u'lp" yi g" Wpkgf "Ucvgu."cpf "o c{ "pqv'dg'Kuwgf "qt "uqnf "y kyi kp" yi g"Wpkgf "Ucvgu'lq."qt "hqt" yi g''ceeqwpv'qt "dgpghkv'qh'öWUDr gtuqpuö'*cu" f ghkpgf "kp"T gi wcvkqp"U+. "gzegr v'r wtuwcpv'\q"cp"gz go r vkqp"htqo "qt"kp"c''vtcpucevkqp"pqv'uwdlgev'\q. "tgi kuvtcvkqp"tgs wktgo gpw" qh" yi g"WUDUgewtkkgu'Cev'cpf "cr r rhecdrg"WUD'uvcvg"Ugewtkkgu'rcy uO'Ceeqtf kpi n{ ."vj g"Gs wkx{ "Uj ctgu'ctg"qpn{ "dgkpi "Kuwgf" qt"uqnf "qwukf g" yi g"Wpkgf "Ucvgu'kp"eqo r rkcpeg'y kyi "T gi wcvkqp"U'wpf gt" yi g"Ugewtkkgu''Cev'cpf "yi g"cr r rhecdrg''rcy u'qh'yi g" lwtkuf kevkqpu'y j gtg'yi qug'Kuwgu'cpf "ucrgu'qeewt0'

 $\label{thm:continuous} Vj\ g"Gs\ wkw\ "Uj\ ctgu"j\ cxg"pqv"dggp"cpf\ "y\ km"pqv"dg"tgi\ kmgtgf\ ."rkmgf\ "qt"qvj\ gty\ kug"s\ wcnthl\ gf\ "kp"cp\ "qvj\ gt"lwt\ kuf\ ke\ kqp"qwu\ kf\ g" \\ Kpf\ kc"cpf\ "o\ c\ \{"pqv"dg"Kuwgf\ "qt"uqnf\ ."cpf\ "Crrr\ kec\ kqpu"o\ c\ \{"pqv"dg"o\ cf\ g"d\ "r\ gtuqpu"kp"cp\ "uwej\ "lwt\ kuf\ ke\ kqp\."gzegr\ v"kp"eqo\ r\ ncpeg"y\ kj\ "vj\ g"crr\ kec\ dg"b"cy\ u"qh"uwej\ "lwt\ kuf\ ke\ kqp0"$



KUWG'UVT WE VWTG''

 $Vj \; ku''Kuwg''ku''dgkpi \; "o \; cf \; g''kp''ygto \; u''qh''Tgi \; wrc\cdot kqp''44; \; *3+'qh''Ej \; cr \; vgt''KZ \; 'qh''y \; g''UGDK'*KEFT+'Tgi \; wrc\cdot kqpu. "423: . "cu''co \; gpf \; gf'' htqo "\wo g''\q''\wo g. "y \; j \; gtgd{. "qwt''Eqo \; r \; cp{\au''r \; quv''kuwg''hceg''xcnwg''ecr kcn'ku''o \; qtg''y \; cp''\ygp''etqtg''twr \; ggu''cpf ''wr vq''y \; gpv{/ hkxg''etqtg''twr ggu0Qwt''Eqo \; r \; cp{''uj \; cm'kuwg''gs wkw{''uj \; ctgu''q''y \; g'r \; wdrke''cpf ''r tqr \; qug''\q''tkuv'y \; g''uco \; g''qp''y \; g''UO G'r rc\hqto ''qh' DUG''Nlo kgf 0'Hqt''htw'y \; gt''f \; gvcku''tgi \; ctf kpi ''y \; g''ucrl\gpv''hgcwtgu''cpf ''yto u''qh''uwej ''y \; ku''kuwg. "r \; rgcug''tghgt''vq''ej \; cr \; vgt''kkrgf'' <math>\delta Vgto \; u''qh''y \; g''Kuwyg''$ cpf '' $\delta Kuwyg''Rt \; qegf \; wtg''$ ''dgi kppkpi ''qp''r ci g''397''cpf ''3: 8''tgur ge\kxgn{''qh''y \; ku''Ftchv''Rtqur gewu0'''}

 $\label{lem:constraint} Vj\ g''r\ tgugpv''kuuwg''eqo\ r\ tkugu''qh''Wr\ vq''6.38.622''Gs\ wkw{\ ''Uj\ ctgu''qh''hceg''xcnwg''qh''\ ''32022''gcej\ 'hwm{\ 'r\ ckf\ ''hqt''ecuj\ ''cv''r\ tkeg''qh''\ '']\ _''r\ gt''Gs\ wkw{\ ''Uj\ ctg+'ci\ i\ tgi\ cvkpi\ ''vq''\ '']\ _''0''}$

Vj g'r tgugpv'kunwg''eqo r tkugu''c'tgugtxcvkqp''qhi'] _'Gs wkx{ "Uj ctgu''qhi'hceg''xcnwg''qhi' "32022''gcej 'hwm{ 'r ckf 'hqt''ecuj ''cv'r tkeg''qhi' "] _''r gt''Gs wkx{ "Uj ctg''*kpenwf kpi "c''r tgo kwo "qhi" "] _''r gt''Gs wkx{ "Uj ctg+''ci i tgi cvkpi "vq" "] _''hqt''uwduetkr kkqp''d{ "vj g'' f guki pcvgf 'O ctngv'O cngt''O cngt''T gugtxcvkqp''Rqtvkqp+''cpf ''c'P gv'Kunwg''vq''Rwdnke''qhi'] _''Gs wkx{ "Uj ctgu'qhi'hceg''xcnwg'' qh'' "32022''gcej "hwm{ 'r ckf "hqt''ecuj "cv'r tkeg"qhi" "] _''r gt''Gs wkx{ "Uj ctg''*kpenwf kpi "c''r tgo kwo "qhi" "] _''r gt''Gs wkx{ "Uj ctg+'' ci i tgi cvkpi "vq" "] _''*yj g''P gv'Kunwg+0'Vj g''Kunwg''cpf "vj g''P gv''Kunwg''y kni'eqpuvkwwg''] _''' "cpf "] _''' "tgur gevkx gn{ "qh''yj g''Rquv'' Kunwg''Rckf/wr 'Gs wkx{ "Uj ctg'Ecr kcni'qh''yj g''Eqo r cp{0'

 $\label{thm:conditional} Vj~g''\!K\!u\!w\!g''\!k\!u''\!dg\!k\!pi~'o~cf~g''\!d\{''\!y~c\{''\!q\!h''\!H\!k\!z\!g\!f''\!R\!t\!k\!e\!g''\!K\!u\!w\!g''\!R\!t\!q\!e\!g\!u\!u''$

Rct dewct u'qh'tj g'kung''	Pgv'Kung'tq'Rwdde, ''	O ct ngv'O cngt 'T gugt xc vkqp 'Rqt vkqp''
P wo dgt 'qh'Gs wks{ 'Uj ct gu'] _'Gs wkv{ ''Uj ctgu''] _'Gs wkv{ ''Uj ctgu''
Rgtegpweig''qh''Kounng''Uk∤g'] _'' ''qh'\j g'kuwg''Uk g''] _'" ''qh''yj g''kuuwg''Ukţ g''
cxckrcdrg'hqt 'cmqecvkqp"] _'' 'qh'y g'Rquv'Knuwg'Rckf'wr'Ecrkxcn'] _'' 'qh'yj g'Rquv'kuuwg'Rckf'wr'Ecrkxcn'
Dcuku'' qhi' Cmqvo gpv'' 1'	Rtqrqtvkqpcvg" uwdlgev' vq" okpkowo"	Huto 'Cmqvo gpv'
Cmqecvkqp'' khi' tgurgevkxg'	cmqvogpv"qh"]_"Gswkv{"Ujctgu"cpf"	
ec vgi qt { 'kı'qxgt uwduet kdgf ''	hwtyjgt" cmqvogpv''kp" ownwkrngu" qh''] _"	
"	Gs wkv{ "Uj ctgu"gcej 0'	
	"	
	Hqt 'hwt yj gt 'f gyckru'r ngcug't ghgt 'yq'õ Dc uku'	
	qh' Cnqvo gp vö" wpf gt" ej cr vgt" vkngf "	
	õ Kuwg'Rt qegf wt g ö"dgi kppkpi "qp"r ci g"	
	3: 8'qh'y ku'Ftch/Rtqurgewu0'	
O kpko wo 'Crrnkecvkqp'Uk'g"	Hqt" Qvj gt" vj cp" Tgwkil Kpf kxlf wen']_'Gs wkv{ ''Uj ctgu'''
	Kpxgunqtu≺'	
	Uwej "pwo dgt" qh" Gswkx{" Uj ctgu" kp"	
	o wnkr rgu'qh'] _'Gs wkx{ ''Uj ctgu'uwej ''yj cv'	
	y g"Crrnlecvkqp"Xcnwg"gzeggfu" "4022"	
	Nenj u0'	
	11	
	Hqt 'T gwchdKpf half wendKpxguwqt u<'	
]_'Gs wkv{ ''Uj ctgu'''	
Oczło wo 'Crrdecylop'Uk g"	Hqt" Qvj gt" vj cp" Tgvckil Kof kxlf werl]_'Gs wkv{
	Kpxguvqtu≺'	
	"	
	Vjg"oczkowo" crrnkec√kqp"ukţg" ku" yjg"	
	Pgv'Knuwg"vq"Rwdrke"uwdlgev'vq"rkokuu"yjg"	
	kpxguvqt'j cu'vq'cfj gtg'wpfgt'vj g'tgrgxcpv'	
	ncy u'cpf 'tgi wncwlqpu'crrnlecdng0'	
	"	
	Hqt 'T gwldlifof lalf went'lfoxgusqt u<'	
] _"Gs wkx{"Ujctgu"cv"cp"Knuwg"Rtkeg"qh"	
] _"r gt" Gs wkv{" Uj ctg0' Uwej " yi cv" yi g"	
	Crrheckqp"Xcnwg"f qgu"pqv"gzeggf u" "	
	4022'Nenj u0'	
Vtcf kpi 'Nqv'] _'Gs wkv{ 'Uj ctgu''] _"Gs wkv{ "Uj ctgu0'J qy gxgt."vj g"O ctmgv"
r · 1·	1	O cngtu"o c{ "ceegr v'qf f "nqui"kh"cp{ "kp" yi g"



	o ctngv'cu'tgs wktgf 'wpf gt 'vj g'UGDK*ÆFT+'	
	Tgi wrc\kqpu.'423: 0'	
Oqfg'qh'Crrhecvkqp"	Cml'y g"crrnkecpvu'uj cml'o cng''y g"crrnkecvkqp"*Qpnkpg''qt"Rj {ukecn+'y tqwij "y g'CUDC"	
	Rtqeguu'qpn('*/spenwfkpi 'WRKogejcpkuo'hqt'WRKCrrnkecpvu'wukpi 'U{pfkecvg'CUDC+0'	
O qf g'qh'Cmqvo gpv'	Eqorwnqtkn('kp'fgocvgtkcnk'gf'hqto0'	
Vgt o u'qh'Rc{o gpv'	Vj g"Crrnlecpv"uj cm"j cxg"uwhhlelgpv"dcncpeg"lp"vj g"CUDC"ceeqwpv"cv"vj g"vko g"qh"uwdo kwlpi "crrnlecvlqp"cpf "vj g"co qwpv"y km'dg"dnqengf "cp{vko g"y ky lp"vy q"f c{u'qh'vj g"	
	erquwtg"qh'vj g'knuwg0' "	
	Kp"ecug"qh"WRKcu"cp"cngtpcvg"o gej cpkno. "Crrnlecvkqp"co qwpv'uj cm'dg"dnqengf "cv'vj g"	
	vko g"qh'eqphkto cvkqp"qh'o cpf cvg"eqmgevkqp"tgs wguv'd { "crrnkecpv0"	

 $\label{lem:condition} \begin{tabular}{l} Kp"ecug"qh"WRKcu"cp"cngtpcvg"o gej cpkuo ."Crrnkecvkqp"co qwpv'uj cm'dg"dnqengf "cv'vj g"vko g"qh"eqphkto cvkqp"qh"o cpf cvg"eqngevkqp"tgs wguv'd{"crrnkecpv0"} \end{tabular}$

- , Ukpeg''r tgugpv'kuuwg''ku'c''hkzgf ''r tkeg''kuuwg. 'vj g''cmqecvkqp''kp''yj g''pgv'kuuwg''vq''yj g''r wdrke''ecvgi qt $\{$ ''kp''vgto u''qh'Tgi wrcvkqp''475'' qh''yj g''UGDK*KEFT+'Tgi wrcvkqpu. ''423: ''uj cm'dg''o cf g''cu''hqmqy u<''
- c+ O kpko wo "hkhw{"r gt"egpv"vq"tgvckn"kpf kxkf wcn"kpxguvqtu="cpf"
- d+ Tgo ckpkpi '\q<'

kpf kxkf wen'er r n'ecpwi'qvj gt "vj cp"t gvekn'kpf kxkf wen'kpxguvqtu="cpf"

qyi gt "kpxguvqtu"kpenwf kpi "eqtr qtcvg"dqf kgu"qt "kpuvkwwkqpu. "kttgur gevkxg"qh"vj g"pwo dgt"qh"ur gekhkgf "ugewtkkkgu"cr r nkgf "hqt="

 $Rtqxkf gf "ij cv"ij g"wpuwduetkdgf "r qtvkqp"kp"gkij gt "qh"ij g"ecvgi qtkgu"ur gekhkgf "kp"*c+"qt"*d+"cdqxg"o c{ "dg"cmqecvgf "vq"ij g" cr r necpvu"kp"ij g"qvj gt "ecvgi qt{0'}$

 $Gzr mpcvkqp < Kl''y g''tgvcknu''kpf kxkf wcn''kpxguvqt''ecvgi qt { "ku''gpvkxrgf "vq"o qtg''yj cp''hkhv{ "r gt''egpv''qh''yj g''kxuvwg''uk| g''qp''c'' r tqr qtvkqpcvg''dcuku.''y g''tgvcknu''kpf kxkf wcn''kpxguvqtu''uj cm''dg''cmqecvgf ''yj cv'j ki j gt''r gtegpvci g0''$

Y KVJ FTCY CN'QH'VJ G'KUUWG''

 $\label{thm:conditional} \textbf{Ki'qwt'Eqorcp} \begin{tabular}{ll} \textbf{Ki'qwt'Eqorcp} \begi$

Hwt j gt. "j g"UqeniGzej cpi gu'uj cmi'dg"kphqto gf "r tqo r wf "kp" j ku'tgi ctf "cpf "j g"Ngcf "O cpci gt. "j tqwi j "j g"T gi kutct "vq" j g" Kuwg. "uj cm'pqwhf "y g"UEUDu" vq"wpdmemi'y g"Dcpmi'Ceeqwpwi"qh'y g"CUDC "Crrnecpwi"y kj kp"qpg"Y qtmkpi "F c{ "htqo "y g" f cvg"qh'tgegkr v'qh'uwej "pqwhhecwqp0"

Kp"ecug"qwt"Eqo r cp{"y kj f tcy u"y g"Kunwg"chygt"j g"Kunwg"Enqukpi "F cvg"cpf "uwdugs wgpvn("f gekf gu"vq"wpf gtvcng"c"r wdnke" qhhgtkpi "qh'Gs wkx{"Uj ctgu."qwt'Eqo r cp{"y kmlhkrg"c'htguj "Qhhgt'F qewo gpv'y kj "y g'UvqenhGzej cpi g'y j gtg'y g'Gs wkx{"Uj ctgu" o c{"dg"r tqr qugf "vq"dg"hknrgf 0"

P qw kj uvcpf kpi "'y g"hqtgi qkpi ."'y g"Kuwg"ku"cnq"uvdlgev'vq"qdvckpkpi "'y g"hkpcn'Nkukpi "cpf "Vtcf kpi "Crrtqxcn'qh''y g"Uqem' Gzej cpi g."'y j kej "'y g"Eqorcp{ "uj cm'crrn{ "hqt"chgt"Cmqvo gpv0'Kp"vgto u"qh''y g"UGDKTgi wucvkqpu."P qp/Tgvckn'Crrnkecpvu" uj cm'pqv'dg"cmqy gf "vq'y kyj f tcy "'y gkt 'Crrnkecvkqp"chgt"yj g"Kuwg"Empukpi "F cvg0"

LWTKUF KEVKQP"

Gzennuksg'lwtkuf kevkqp'hqt''yj g'r wtr qug''qh''yj ku'kuwg''ku''y kaj ''yj g''eqo r gvgpv''eqwtxu''l''cwaj qtkakgu''cv'Mqmrcvc0'



KUWG'RTOI TCOOG'''

Crrnecvkqpu"cpf "cp{"tgxkukqpu"vq"yj g"uco g"y kni'dg"ceegr vgf "qpn("dgwy ggp"32<22"c0o 0'vq"7<22"r 0o 0"*Kpf kcp"Uccpf ctf "Vko g+" f wt kpi "vj g"Kuwy"Rgt kqf "cv'vj g"Crrnecvkqp"Egpvt gu'o gpvkqpgf "kp"vj g"Crrnecvkqp"Hqto "gzegr v'vj cv'qp"vj g"Kuwy"Empukpi "F cvg" crrnecvkqpu"y kni'dg"ceegr vgf "qpn("dgwy ggp"32<22"c0o 0'cpf "5<22"r 0o 0"*Kpf kcp"Uccpf ctf "Vko g+0"

 $\label{thm:condition} We p'th t'w qh' w qh' w$

- c+ C'uvcpf ctf ''ewv'qhh'\ko g''qh' $15\sqrt{2}$ 2''r 100 Ohqt ''ceegr vcpeg''qh''cr r nlec \kqpu0'
- d+ C'incepf ctf 'ew/qhh'\ko g'qh'6-22'r 0o 0hqt 'wr nqcf kpi 'qh'cr r nkec\kqpu't gegkxgf 'htqo 'qvj gt 'vj cp't gwknlkpf kxkf wcn'cr r nkecpw0'
- e+ C"uvcpf ctf "ew/qhh' vko g"qh' 7-22" r 0 0'hqt "wr nqcf kpi "qh'cr r nlecvkqpu" tgegkxgf "htqo "qpn("tgvckn'kpf kxkf wcn'cr r nlecvkqpu" y j kej 'o c{ 'dg'gzvgpf gf 'wr 'vq'uwej 'vko g'cu'f ggo gf 'hkv'd{ 'DUG'chygt 'vcnkpi 'kpvq'ceeqwpv'yj g'vqvcn'pwo dgt 'qh'cr r nlecvkqpu" tgegkxgf 'wr 'vq'yj g'enquwtg'qh'vko kpi u'cpf 'tgr qtvgf 'd{ 'Ngcf 'O cpci gt 'vq'DUG'y kyj kp'j cnh'cp'j qwt 'qh'uwej 'enquwtg0'

 $\label{thm:continuous} \begin{tabular}{l} Ki'ku''enctkikgf''iy' cv''Crr keckqpu''pqv''wr mqcf gf''y qwf''dg''tglgevgf0''kp''ecug''qh''f kuetgr cpe{''lp''y' g''f cvc''gpvgtgf''lp''y' g''grgevtqpke'' hqto "xku' «/xku''y' g''f cvc''eqpvckpgf'''kp''y' g'''Rj {ukecn''Crr keckqp''Hqto .''hqt''c''r ctvkewct''crr kecpv.''y' g''f gwkku''cu''r gt''r j {ukecn'' crr keckqp''hqto ''qh''y' cv''Crr kecpv''o c{''dg''vcmpp''cu''y' g''hkpcn'f cvc''hqt''y' g''r wtr qug''qh''cmqvo gpv0'' } \end{tabular}$

 $\label{eq:control_co$



KUWG'RTOEGFWTG"

Cnl'Crrhecpu"uj qwf "tgcf" vj g"I gpgtch' Kphto cvkqp" F qewo gpv'hqt" Kpxgukpi "kp" Rwdhe" Kuwgu" rtgrct gf "cpf" kuwgf "kp" ceeqtf cpeg" y kj "vj g"ektewrct "UGDKI QIEHF IF KN4 IEK IR 14242 159" f cvgf "Octej "39."4242" cpf "vj g"WRK'Ektewrct u" vj g" õI gpgtch' Kphto cvkqp" F qewo gpvö + "y j kej "j ki j hi j ul'vj g"ng{"twngu "rt qeguugu" cpf" rt qegf wt gu" crrhecd ng "vq" rwdhe" kuwgu" kp" i gpgtch' kp" ceeqtf cpeg" y kj "vj g" rt qxkukqpu" qh'vj g" Eqo rcpkgu" Cev. "vj g" Ugewt kkgu" eqpvt cevu" T gi wrc vkqp + "Cev." 3; 78." vj g" Ugewt kkgu" Eqpvt cevu" T gi wrc vkqp + "Twngu." 3; 79." cpf" vj g" UGDK KE F T" T gi wrc vkqpu O'Vj g" I gpgtch' Kphto c vkqp" F qewo gpv' ku" cxchvchg" qp" vj g" y gduksgu" qh'vj g" Uqem' Gzej cpi g" cpf" vj g" NO O'R ngcug" tghgt "vq" vj g" tgngxcpv' rt qxkukqpu" qh'vj g" I gpgtch' Kphto cvkqp" F qewo gpv' vj j kej "ct g" crrhecd ng "vq" vj g" kuwg. "gur gekcm vj p' tgnc vkqp" vj g" tqeguu' nt "Crrhecvkqpu' d{"T gvc ki' Kpf kxlf wcn' Dlf f gtu' vj tqwi j "vj g" WRKO gej cpkuo O'Vj g" kpxguaqtu' uj qwf" pqvg" vj cv' vj g" f gvc ku' cpf" rt qeguu' rt qxlf gf" kp" vj g" I gpgtch' Kphto cvkqp" F qewo gpv' uj qwf "dg' tgcf" cnqpi "v kj "vj ku' ugevkqpO'

Cff kkapom!."cmlCrrnkecpulo c{"t glgt "aj" i g"I gpgtcnlKplqto cskap" F qewo gpvlqt "kplqto cskap" kp" t grcskap" vaj "k+Ecvgi qt {"qll' kpxguaqt "gnki kdng" vaj "rctskekrcvg" kp" i g"Kuwg="kk+lo czko wo "cpf" o kpko wo "Kuwg" vkj g="kkk+lrt keg" f kweqxgt {"cpf" cmqecskap="kx+ll" Rc{o gpv" Kpust weskapu" lqt" (CUDC" Crrnkecpu="x+"Kuwcpeg" qh! ECP" cpf" (Cmqwo gpv" lp" i j g" Kuwg="xk+ll" gpgtcn' kpust weskapu" "ko kgf" "vaj "kpust weskapu" lqt" cqo rngskpi" "j g" Crrnkecskap" Hqto =!"xkk+lf guki pcvgf" f cvg="xkkk+lf kurqucn' qh' crrnkecskapu="kz+" uwdo kuskap" qh' Crrnkecskap" Hqto =" z+" qvj gt" kpust weskapu" "ko kgf" "vaj "lqkpv" crrnkecskapu" lp" ecugu" qh' kpf kxkf wcn" o wnskrng" crrnkecskapu" cpf "kpuscpegu" y j gp" cp" crrnkecskap" y qwf" dg" t glgevgf" ap" vgej pkecnl' i t qwpf u=" zk+' crrnkecdag" rt qxkukapu" qh' Eqo rcpkgu' Cev." 4235 't grcskpi '\aj "rwpkij o gpv' lqt" lkeskskapsu' crrnkecskapu=" zkk+' o qf g" qh' o cmkpi "t glwpf u=" cpf" zkx+' kpvgt gus' kp" ecug" qh' f gr('kp' Cmqvo gpv' qt' t glwpf 0'

UGDK'ıj tqwi j "ku"ektewrct"pq0'UGDKIJ QIEHF IF KN4 IEKT IR 1423: B5: "f cvgf "P qxgo dgt" 3."423: "t gcf "y kj "ku"ektewrct"pq0'UGDKIJ QIEHF IF KN4 IEKT IR 1423; 72 f cvgf "Crt kn'5."423; "cpf "ektewrct 'pq0'UGDKIJ QIEHF IF KN4 IEKT IR 1423; 198 f cvgf "Lwpg" 4: ."423; ."j cu"kpvt qf wegf "cp"cngt pcvg"rc{o gpv'o gej cpkwo "wwkpi "Wpkkgf "Rc{o gpw"kpvgt kceg" %WRKo+"cpf "eqpugs wgpv" t gf wevkqp kp ko grkpgu'hqt 'klwkpi 'kp'c'rj cugf 'o cppgt 0 Ht qo "Lcpwct{3."423; ."ij g'WRKO gej cpkwo 'lqt "T kDu'cr rn' kpi 'kj t qwi j "F gwki pcvgf "Kpvgt o gf kct kgu'y cu'o c f g'ghgevkxg"cnqpi "y kj "vj g"gzkwkpi "rt qeguu"cpf "gzkwkpi "vko grkpg"qh'V- 8"f c{u0*6WRK' Rj cug"Ko+0Vj g'WRKRj cug"Ky cu'ghgevkxg"vkn'Lwpg'52."423; 0'

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TKKu"ij t qwi j "F guki pcvgf "Kovgt o gf kct kgu"*qvj gt "ij cp"UEUDu+"ij g"gz kukpi "r t qeguu"qh"r j {ukecn'o qxgo gpv"qhlqt o u"ht qo "lwej" F guki pcvgf "Kovgt o gf kct kgu"vq"UEUDu'lqt "dqnenkpi "qhl"hvp fu"j cu"dggp"f kweqpvkpwgf "cpf "qpn("ij g"WRKO gej cpkuo "lqt "uwej"
Cr r nkecvkqpu"y kij "gz kukpi "vko gnkpg"qh"V- 8"f c {u"y kni'eqpvkpwg"hqt "c"r gt kqf "qh'vj t gg"o qpvj u"qt "rcwpej "qh'lkxg"o ckp"dqctf"
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ekt ewrct *UGDKIJ QIEHF IF ET 4 IEKT IR 1423; 1855+if cvgf 'P qxgo dgt": ."423; ."ij g"WRKRj cug"KKj cf "dggp"gzvgpf gf "wpvkilO ctej"
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vko gnkpg"qh'V- 5"f c {u'o c {"dg"o cf g"ghlgevkxg"wukpi "yj g"WRKO gej cpkuo 'hqt "cr r nkecvkqpu"d{"T gvcktlkpf kxlf wcn'lkoxguaqtu'*\võWRK'
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Vj g" nkw" qh' Dcpmu" yj cv" j cxg" dggp" pqvklkgf" d{" UGDK" cu" Kuwyt" Dcpmu" hqt" WRK" ctg" rtqxkfgf" qp" j wru<lly y y QugdkQ qxQp lugdky gd lqvj gt lQvj gt Cevkqp(f qAf qTgeqi pkugf Hrk? {gu(kpvo Kf.? 620' Vj g" nkw" qh' Uvqem' Dt qmgtu." F gr qulvqt {"Rctvkekrcpvu"*F R+'Tgi kwtct"vq"cp" Kuwyg"cpf "Uj ctg" Vtcpulgt "Ci gpv"*TVC+'vj cv'j cxg" dggp "pqvklkgf" d{"DUG"vq"cev" cu" lpvygt o gf kct kgu" lqt "uwdo kwkpi "Crrnkecvkqp" Hqt o u"ctg" rtqxkf gf" qp" y y Qlugkpf kcQeqo "Hqt" f gw ku"qp" vj gkt "f guki pcvgf" dtcpej gu'lqt "uwdo kwkpi "Crrnkecvkqp" Hqt o u "rngcug" ugg" vj g'cdqxg" o gpvkqpgf "y gdukyg" qh'DUG" Nko kgf 0'

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Vj ku"ugevkqp"crrnkgu"vq"cnd'vj g"Crrnkecpvu."rngcug"pqvg"vj cv"cnd'vj g"Crrnkecpvu"ctg"tgswktgf "vq"o cng"rc{o gpv'qh'vj g"hwnd" Crrkecvkqp"Co qwpv'cnqpi "y kij "ij g"Crrkecvkqp"Hqto 0'Hwt ij gt."ij g"Eqo rcp{"cpf "ij g"NO "ct g"pqv'rkcdng"lqt "cp{"cf xgt ug" qeewtt gpegu'eqpugs wgpv'\q'ij g'ko rngo gp\c\kqp''qh'\j g'WRKO gej cpkw 'lqt'crrrkec\kqp'kp'\j ku'Kuwg0'

Rj cugf 'lo r ngo gpvcvkqp'qh'Wpkhlgf 'Rc{o gpvu'Kpvgt hceg''

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Rj cug'K: Vj ku'r j cug'y cu'er r rleedig'htqo "Lepwet { '3.'423; "wpskrlO etej "53.'423; "qt'hiqeskpi "qh'hksg"o ekp''dqetf "r wdrke'kuuwgu." y j kej gxgt "ku"rcvgt 0'Uwdugs wgpvn(..."yj g"vko grkpg"hqt "ko r rgo gpvcvkqp"qh"Rj cug"Ky cu"gz vgpf gf "vkm"Lwpg"52..."423; 0'Wpf gt "vj ku" r j cug. "c"Tgyckti'kfof kxlf wcn'j cf "vj g"qr vkqp"vq"uwdo kx"vj g"Crrnkecvkqp"Hqto "y kxj "cp{"qhi'vj g"kpvgto gf kct{"cpf "wug"j ku"I"j gt"WRK" IF 'hqt''sj g'r wtr qug''qh''drqenlipi "qh'hwpf u0'Vj g''lo g''f wtcslqp''htqo 'r wdrle''kunwg''erquwtg''\q''kunlipi "eqpslipwgf ''\q''dg''ulz''y qtnlipi " $fc\{u0'$

Rj cug'lKc'Vj ku'r j cug'j cu'dgeqo g'crr nlecdrg'ltqo 'Lvn('3.'423; 'cpf 'y cu'\q'lpkkcm('eqp\kpvg'lqt''c'r gtkqf ''qh'\y tgg'o qpyj u'qt'' htqcvkpi "qh"hkxg"o ckp"dqctf "r wdrke"kuwgu."y j kej gxgt"ku"ncvgt0'Uwdugs wgpvn(."kv"y cu"f gekf gf "vq"gzvgpf "vj g"vko grkpg"hqt" ko r ngo gpvcklqp"qh"Rj cug"KKwpkrlO ctej "53."42420Hwt yj gt"uxkm"cu"r gt"UGDKektewrct"UGDKIJ Q1EHF 1F KN41EKT 1R14242172" f cvgf "O ctej "52."4242." vj g"ewttgpv'Rj cug"KKqh"Wpkhkgf "Rc{o gpw"Kpythceg"y kvj "Crrnlecvkqp"Uwrrqtvgf "d{"Drqengf "Co qwpv" ku'eqpykpygf 'kirihnty' gt 'pqykeg0Wpf gt 'iy ku'r j cug, 'uwdo kuukqp'qh'iy g'CUDC'Hqto 'd{ "TKDu'iy tqwi j 'F guki pcygf 'Koygto gf kctkgu" *qyjgt"yjcp"UEUDu+"vq"UEUDu"hqt"dnqenkpi "qh"hwpfu"yknn'dg"fkueqpvkpwgf"cpf"yknn'dg"ku"tgrncegf"d{"yjg"WRK'rc{ogpv" o gej cpkuo 0J qy gxgt."yj g"vko g"f wtcvkqp"htqo "r wdnke"kuuwg"enquwtg"vq"rkuvkpi "eqpvkpwgu"vq"dg"ukz "y qtmkpi "f c{u"f wtkpi "vj ku" rj cug0'

Rj cug'HKK'Vj ku'r j cug'j cu'dgeqo g'cr r n'ecdug''qp''c''xqnwpvct { "dcuku'hqt "cm'kuuwgu''qr gpkpi "qp''qt "chygt "Ugr vgo dgt "3."4245"cpf " qp" c" o cpf cvqt { "dcuku" hqt" cm" kuwgu" qr gpkpi " qp" qt" chygt" F gego dgt" 3." 4245." xkf g" UGDK ektewrct" dgctkpi " pwo dgt" UGDKI Q1EHF IVRF 3 IEKT IR14245 I362"f cvgf "C vi vuv"; ."4245"*\$V-5"P qvktkecvkqpö+0'kp"vj ku"r j cvg. "vj g"vko g"f vtcvkqp"ltqo " r wdrłe "kuuwg" enquwtg" vq" rkuwkpi "j cu" dggp" tgf wegf "vq" y tgg" Y qtrlipi "F c { u0'Vj g" Qhhgt "uj cm' dg" wpf gt vcmgp "r wtuwcp v' vq" y j g" rtqeguugu"cpf"rtqegfwtgu"cu"pqwklkgf"kp" vjg"V-5"Pqwklkecwkqp"cu"crrrkecdrg."uwdlgev'vq"cpf"ektewrctu."enctklkecwkqp"qt"d{ ''UGDK0'

Vj g"rtqeguukpi "hggu"hqt"crrnkecvkqpu"o cfg"d{"WRKDkffgtu"wukpi "vjg"WRKOgejcpkwo "oc{"dg"tgngcugf"vq"vjg"UEUDu"qpn(" chygt 'luwej 'dcpmu'r tqxkf g'c'y tkwygp'eqphto cwlqp. 'kp'eqo r ncpeg'y kij 'ij g'UGDKTVC'O cuvgt 'Ektewrct 'kp'c'hqto cv'cu'r tguetkdgf " d{"UGDK"htqo "vko g"vq"vko g."cpf "uwej "r c{o gpv"qh"r tqeguulpi "hggu"vq"vj g"UEUDu"uj cm"dg"o cf g"lp"eqo r ncpeg"y ksj "ektewrctu" rtguetkdgf "d{ "UGDKcpf "cr r nlecdng"ncy 0'Vj g"Qhhgt"y km'dg"o cf g"wpf gt "WRKRj cug "KKQh'vj g"WRKEktewnct0"

Cm'UEUDu'qhhgt kpi 'hcekrkx{ ''qh'o cmkpi ''crr n'ecvkqp''kp'r wdn'e 'kuuwgu''uj cm'cnuq''r tqxkf g'hcekrkx{ ''vq'o cmg''crr n'ecvkqp''wukpi ''vj g'' WRKO gej cpkno 0'Vj g"Knuwgtu'y kni'dg"tgs wktgf "vq"crrqkpv'qpg"qh'vj g"UEUDu"cu"c"urqpuqt"dcpni'vq"cev'cu"c"eqpf wkv'dgwy ggp" yj g"Uvqeml'Gzej cpi gu"cpf "P REKkp"qtf gt"vq"hcektkcvg"eqmgevkqp"qh"tgs wguvu"cpf "1"qt"r c{o gpv"kpuvtwevkqpu"qh"vj g"Tgvckt" Kpfkxkfwcn'Crrnkecpwi'kpvq''vjg''WRK'rc{ogpv'ogejcpkuo0'



Rwtuwcpv'vq'vj g'WRKEktewrctu."UGDKj cu'ugv'qwv'ur gekhle"tgs wktgo gpvu"hqt"tgf tguucn'qh'kpxguvqt"i tkgxcpegu'hqt"cr r nlecvkqpu" vj cv'j cxg"dggp"o cf g"vj tqwi j "vj g"WRKO gej cpkuo 0"Vj g"tgs wktgo gpw"qh"vj g"WRKE ktewrct "kpenwf g."crr qkpvo gpv"qh"c"pqf cn" qhhlegt "d{" 'y g"UEUD"cpf "uwdo kuulqp"qh"y gkt "f gyckru" 'q"UGDK" y g"tgs wktgo gpv'h"qt "UEUDu" 'q"ugpf "UO U"crgt wu"hqt "y g"drqenhpi " cpf "wpdmenkpi "qh"WRKo cpf cvgu. "vj g"tgs wktgo gpv"hqt "vj g"Tgi kwtct "vq"uwdo kv"f gvcknu"qh"ecpegngf . "y kvj f tcy p"qt"f gngvgf " cr r necktopu. "cpf "vj g"tgs wktgo gpv"hqt "vj g"dcpm"ceeqwpw"qh"wpuweeguuhwiDkf f gtu"vq"dg"wpdnqengf "pq"hcygt"vj cp"qpg"Y qtmkpi " Fc{"htqo "vj g"f cvg"qp"y j kej "vj g"Dcuku"qh"Cmqvo gpv"ku"hlpcrkugf 0Hcknxtg"vq"vpdmqem"yj g"ceeqwpxu"y kyj kp"vj g"vko gnkpg"y qwrf " tguwn/kp"yj g"UEUDu'dgkpi "r gpcrkugf "wpf gt"yj g"tgrgxcpv'ugewtkkgu'rcy 0"

Hqt"lmtyj gt"f gvcku."tghgt"vq"vj g"I gpgtcn"Kphqto cvkqp"F qewo gpv"cxckrcdrg"qp"vj g"y gduksgu"qh"vj g"Uqeni'Gzej cpi g"cpf "vj g" Ngcf 'O cpci gt0'

HKZGF'RTKEG'KUWG'RTQEGFWTG''

Vj g"Kuwg"ku"dgkpi "o cf g"kp"eqo r nkcpeg"y kji "ý g"r tqxkulqpu"qh"Tgi 044; *3+"qh"Ej cr vgt "KZ "qh"vj g"UGDK*KEFT+"Tgi wxxvlqpu." 423: "cpf "vj tqwi j "vj g"Hkzgf "Rtkeg"Rtqeguu'y j gtgkp"72' "qh'vj g"P gv'Kuwg"vq"Rwdrke "ku'dgkpi "qhrgtgf "vq"vj g"T gvckrl'Kof kxkf wcrl Crrnlecpwl'cpf "vjg"dcncpeg"ujcm'dg"qhhgtgf "vq"Pqp/Tgvckn'Ecvgiqt{"ldg0"SkDu"cpf"Pqp/Kpuvkwvkqpcn'Crrnlecpwl0Jqygxgt." kh''y g"ci i tgi cyg"f go cpf "htqo "y g"Tgwchi'Kpf kxlf wcn'Cr r necpwi'ku"guu"y cp"72' ."y gp"y g"dcncpeg"Gs wkx{ "Uj ctgu"kp"y cv" r qt vkqp "y km'dg"cf f gf "vq"vj g"pqp/tgvckn"r qt vkqp "qhhgtgf "vq"vj g"tgo ckpkpi "kpxguvqtu"kpenwf kpi "S KDu"cpf "P KKu"cpf "xkeg/xgtuc" uwdlgev'eqo rnkcpeg'y ky "Tgi wrcvkqp"475*4+"qh'vj g"UGDKKEFT"Tgi wrcvkqpu"cpf 'uwdlgev'vq"xcnkf 'Crrnkecvkqpu'dgkpi 'tgegkxgf " htqo "yj go "cv'qt"cdqxg"yj g"Kuwg"Rtleg0"

Uwdlgev'vq"vj g"xcnlf "Crrnlecvlqpu"dglpi "tgeglxgf"cv'qt"cdqxg"vj g"Kuwg"Rtleg."cmqecvlqp"vq"cm'ecvgi qtlgu"lp"vj g"P gv'Kuwg." uj cm'dg"o cf g"qp"c"r tqr qt vkqpcvg"dcuku."gzegr v'hqt"vj g"Tgvckrl'Rqt vkqp"y j gtg"Cmqvo gpv'vq"gcej "Tgvckrl'Rft kxkf wcn'Cr r nkecpvu" uj cmˈþqvˈdgˈhguuˈvj cpˈvj gˈo kpko wo ˈhqvːˈuwdlgevˈvqˈˈcxckrcdkrkx{ "qhˈGs wkx{ "Uj ctguˈkpˈTgvckrlRqt vkqp."cpf "vj gˈtgo ckpkpi "cxckrcdrg" Gs wkk{"Uj ctgu."kh"cp{."uj cm'dg"cmqwgf "qp"c"r tqr qtvkqpcvg"dcukt0"Wpf gt"uwduetkr vkqp."kh"cp{."kp"cp{"ecvgi qt{."y qwrf "dg" cmqy gf "vq"dg"o gv'y kyj "ur km'qxgt"htqo "cp{"qyj gt"ecvgi qt{"qt"c"eqo dkpcvkqp"qh'ecvgi qtkgu"cv'yj g"f kuetgvkqp"qh'qwt"Eqo r cp{" kp"eqpuwncwkqp"y kyj "vj g"Ngcf "O cpci gt"cpf "vj g"Uvqem'Gzej cpi g0'J qy gxgt."kh"y g"tgvckn"kpf kxkf wcn'kpxguvqt"ecvgi qt{ "ku" gpvkngf "vq"o qtg"vj cp"hkn{"r gt"egpv"qh"vj g"pgv"Kunvg"qp"c"r tqr qt vkqpcvg"dcuku. "vj g"tgvcknlkpf kxkf wcnlkpxguvqtu"vj cmi'dg"cmqecvgf" yj c√j ki j gt 'r gtegpvci g0'

Crrnlecpvu"ctg"tgs wktgf "vq"uwdo kv"vj gkt"Crrnlecvkqpu"vq"vj g"Crrnlecvkqpp"eqmgevkpi "kpvgto gf kctkgu"kkg0"UEUD"qt"Tgi kuvgtgf" Rct vkekr cpvu'*F Ru+'t gi kuvgt gf 'y kvj ''UGDKO'

Kp"ecug"qh"S KD"Crrnkecpvu." vj g"Eqorcp{."kp"eqpuwncvkqp"y knj "vj g"Ngcf"Ocpcigt." oc{"tglgevt"Crrnkecvkqpu"cv'vj g"khog"qh" ceegr vcpeg"qh"Crr nlecvkqp"Hqto "r tqxkf gf "vj cv"vj g"tgcuqpu"hqt"uwej "tglgevkqp"uj cm"dg"r tqxkf gf "vq"uwej "Crr nlecvvlp"y tkskpi 0" Kp"ecug"qh"P qp/Kpurkwwkqpcn"Crrnlecpu"cpf "Tgwkl"Kpf kxkf wcn"Crrnlecpu."vj g"Eqorcp{"y qwrf"j cxg"c"tki j v'vq"tglgev'vj g" Crrnlecvkqpu'qpn{ 'qp'\yej pkecn'i tqwpf u0'

Koxgunqtu'ij qwf 'pqvg'vj cv'ceeqtf kpi 'vq'igevkqp'4; *3+'qhlvj g'Eqo rcpkgu'Cev.'4235.'cmqvo gpv'qhlGs wkx{ 'Uj ctgu'vq'cm' uweegudwiCrrdecpwi'y knilpn('dg'lp'\'ij g'f go cygtkcdugf 'hqto OV j g'Crrdec\'dq'Hqto u'\'y j lej 'f q'pqv'j cxg'\'ij g'f gwkui' qli'yj g'Crrnlecpwu'f grqulsqt { 'ceeqwpv'lpenwf lpi 'FR'HF.'RCP'cpf 'Dgpgllekct { 'Ceeqwpv'P wo dgt 'TWRKHF' "tqt 'THK' Crrdecpw/wdpi 'vj g'WRKO gej cpkto + 'uj cmldg'vt gevgf 'cu'kpeqo rngvg'cpf 't glgevgf 0Kp'ecug'FR'KF.'Enlgpv'KF'cpf '' RCP 'o gpvkqpgf 'kp'tj g'Crrnkecvkqp'Hqto 'cpf 'gpvgtgf 'kpvq'tj g'grgevtqpke'tı(urgo 'qhltj g'tnqenigzej cpi gu'f q'pqv'o cwj '' y ký ''ý g'FR'H. 'Engpv'H' ''epf 'RCP ''exchedg'lp''y g'f grqulsqt { 'f ewdeug. ''ý g'errneevlqp'ki'ikedig''q''dg't glgevgf 0' Crrdecpw'y knipqv'j cxg'tj g'tjrdqp'thli gwlpi 'cnqvo gpv'thl'tj g'Gs wlx{ 'Uj ctgu'lp't j { ulecriliqto 0V j g'Gs wlx{ 'Uj ctgu'lp'' cmyo gpv'tji cmidg'tt cf gf 'tppf 'tp'tj g'f go cygt kchugf 'tigi o gpv'tjh'tj g'UvqemGzej cpi gu0'

CRRNIE CVIOP 'HOTO "

Eqr kgu"qh"yj g"Crr rkeckqp"Hqto "cpf "yj g"cdtkf i gf "r tqur gewu"y kn''dg"cxckrcdrg"cv''yj g"qhhkegu"qh''yj g"Ngcf "O cpci gt."yj g" $F \ guki \ pcvgf \ "Kpvgto \ gf \ kctkgu." cpf \ "vj \ g"Tgi \ kuvgtgf \ "Qhhkeg" qh''qwt" Eqo \ r \ cp\{0'Cp" grgevtqpke" eqr \{ \ "qh''vj \ g"Cr \ r \ nkecvkqp" Hqto \ "vy \ km'' \ pcvgf \ "kpvgto \ gf \ kctkgu." cpf \ "vj \ g"Tgi \ kuvgtgf \ "Qhhkeg" qh''qwt" Eqo \ r \ cp\{0'Cp" grgevtqpke" eqr \{ \ "qh''vj \ g"Cr \ r \ nkecvkqp" Hqto \ "vy \ km'' \ pcvgf \ "kpvgto \ gf \ kctkgu." cpf \ "vj \ g"Tgi \ kuvgtgf \ "Qhhkeg" qh''qwt" Eqo \ r \ cp\{0'Cp" grgevtqpke" eqr \{ \ "qh''vj \ g"Cr \ r \ nkecvkqp" Hqto \ "vy \ km'' \ pcvgf \ "kpvgto \ gf \ kctkgu." cpf \ "vj \ g"Tgi \ kuvgtgf \ "vy \ km'' \ pcvgf \ "kpvgto \ gf \ kctkgu." cpf \ "vj \ g"Cr \ r \ nkecvkqp" Hqto \ "vy \ km'' \ pcvgf \ "vy \ pcvgf$ cniq"dg"cxckrcdrg"hqt"f qy priqef "qp"ij g"y gduksgu"qh"ij g"DUG"*y y y Olugkpf kcOeqo +:"ij g"UEUDu."ij g"Tgi knigtgf "Dtqrigtu."ij g" TVCu'cpf "vj g'EFRu'cv'rgcuv'qpg'f c{ 'r tkqt 'vq 'vj g'Knuwg'Qr gpkpi 'F cvg0'

Cm'Crrnlecpvu'uj cm'o cpf cvqtkn("rctvlekrcvg"kp"vj g"Kuuvg"qpn("vj tqwi j "vj g"CUDC"rtqeguu0'CUDC"Crrnlecpvu"*qvj gt"vj cp" Crrnlecpw."wwkpi "kj g"WRKo gej cpkno +"o wuv'r tqxkf g"gknj gt"*k+"kj g"dcpm'ceeqwpv'f gvcknu"cpf "cwnj qtkncvkqp"\q"drqenilmxpf u"kj gkt" tgur gevkxg'CUDC'Hqto. "qt'%kkH'yi g'WNKKF'%p'ecug'qh'TKKu+;"cu'crrnlecdng. "kp''yi g'tgngxcpv'ur ceg'r tqxkf gf 'kp''yi g'Crrnlecvkqp'' Hqto "cpf" 'y g'Crrnkecvkqp" Hqto u 'y cvfq" pqv" eqpvckp" twej "f gocku" y km" dg" tglgevgf 0 Crrnkecvkqpu" o cfg" d{" 'y g" TKKu" wukpi "y ktf" r ctv("dcpm'ceeqwpv'qt"wukpi "y ktf" r ctv("hkpngf "dcpm'ceeqwpv'WRKKF" ctg"hkcdrg"hqt"t glgevgf 0"



TgvckilKpf kxkf wcnlKpxguvqtu'uwdo kwkpi "vj gkt"cr r necvkqp"hqto "vq"cp{"F guki pcvgf "Kpvgto gf kctkgu"*qvj gt"vj cp"UEUDu+"vj cmi'dg" tgs włtgf "vq"crrn("wułoji "yjg"WRKO gejcpkuo "cpf"o wuv'rtqxkfg"yjg"WRKKF "kp"yjg"tgngxcpv'urceg"rtqxkfgf "kp"yjg"Crrnkecvkqp" Hqto 0Tgvckil'Kpf kxkf weri'Kpxguvqtu''uwdo kwkpi "vj gkt"er r rkecvkqp"hqto "vq"ep{"F guki pevgf "Kpvgto gf kctkgu"*qvj gt"vj ep"UEUDu+" hckigf "vq"o gpvkqp"WRKKF" "ctg"klcdig" vq"dg"tglgevgf 0T gvckn"Kpf kxkf wcn"Kpxguvqtu"o c{ "cnuq"crrn("vj tqwi j "vj g"UEUDu"cpf "o qdkig" cr r necvkqpu'wukpi 'yj g'WRKji cpf rgu''cu''r tqxkf gf ''qp''yj g'y gdukg''qh'yj g'UGDKO'

CUDC "Crrnlecyw" uj cm" gpuwtg" yj cv" yj g"Crrnlecykqpu" ctg" o cf g"qp" Crrnlecykqp" Hqto u"dgctkpi "yj g"uvcor" qh" yj g"F guki pcygf" Kpvgto gf kct{."uwdo kwgf "cv"/j g"Eqmgevkqp"Egpvtgu"qpn("*gzegrv'kp"ecug"qh"Gngevtqpke"Crrnkecvkqp"Hqtou+"cpf"',j g"Crrnkecvkqp" Hqto u'pqv'dgctkpi 'uwej 'ur gekhkgf 'uvco r 'ctg'hkcdrg'vq'dg'tglgevgf 0'

Vj g'r tguetkdgf "eqnqwt"qh'\j g'Crrnkecvkqp"Hqto 'hqt'xctkqwu'ecvgi qtkgu'ku'cu'hqnnqy u≺'

Ecvgi qt{"	Eqnqwt '*3+''
Tgukf gpv'Kof kcpu''''	Y j kg"
Grkikdrg"PTKi"errn{kpi "qp"c"pqp/tgrevtkevkqp"deuku"	Dnvg"

*3+'Gzenxf kpi 'grgevtqpke'Crrrkecvkqp'Hqto "

F guki pcvgf "Kovgto gf kctkgu"*qvj gt"vj cp"UEUDu+"uj cm'uwdo k\"I"f grkxgt"vj g"Crrrkecvkqp"Hqto "*gzegr v'vj g"Crrrkecvkqp"Hqto " htqo "c"TKKdlf f kpi "wukpi "vj g"WRKO gej cpkuo +"vq"vj g"tgur gevkxg"UEUD."y j gtg"vj g"Cr r nlecpv"j cu"c"dcpm'ceeqwpv'cpf "uj cm" pqv'uwdo kv'kv'vq"cp{"pqp/UEUD"dcpm'qt"cp{"Guetqy "Dcpn0Hxtvj gt."UEUDu'uj cm'wr rqcf "vj g'tgrgxcpv'Dkf "f gwknu"*kpenwf kpi " WRKKF 'kp''ecug"qh''CUDC 'Hqto u'wpf gt''yj g"WRKO gej cpkuo +'kp''yj g"grgevtqpke''dkf f kpi "u{ uvgo "qh''yj g"Uvqem'Gzej cpi g0'Uvqem' Gzej cpi g'uj cm'xcnkf cvg''y g''gngevtqpke''dkf u'y kyj ''y g'tgeqtf u'qh''y g'EFR'hqt'FR'KF''TEnkgpv'KF''cpf'RCP.''qp''c'tgcn'\ko g''dcuku'' cpf "dtkpi 'kpeqpukugpekgu'vq'vj g'pqvkeg'qh'vj g'tgrgxcpv'F guki pcvgf 'Kpvgto gf kctkgu.'hqt'tgevkhecvkqp''cpf 'tg/uvxdo kuukqp''y kvj kp'' $\label{thm:conditional} yig \text{"Uqem'Gzej cpi } g\text{"Uqem'Gzej cpi } g\text{"Uqem'Gzej cpi } g\text{"uj cm'cmqy "o } qf \text{ kheckqp"qh'gksj } gt\text{"F R''KF" l'Enkgpv'KF" qt''RCP ''KF".}$ dcpmleqf g"cpf "nqecvkqp"eqf g"kp" y g"Crr nkecvkqp"f gvcknu"cnt gcf { "wr nqcf gf 0"

Hqt"TKKu"wukpi "WRKO gej cpkuo ."vj g"Uvqem'Gzej cpi g"uj cm'uj ctg"vj g"Crrnkecvkqp"f gvcknu"¾penwf kpi "WRKKF+'y kyj "Urqpuqt" Depni'qp"c"eqpykpwqwu'dcuku"vq"gpcdrg"vj g"Ur qpuqt"Depni'vq"lpkklevg"WRKO epf evg"Tgs wguv'vq"TKKi'hqt "drqenkpi "qh'hwpf u0'Vj g" Ur qpuqt "Depniuj emilplakevg" tgs wguvihqt "drqenlipi "qhihapf u"vj tqwi j "P RE Kvq"T KKu"y j q"uj emi'eeegr v'vj g"WRKO epf evg"T gs wguv" hqt "drgentpi "qh"hwpf u"qp" y gkt "t gur gevkxg" o qdkrg" cr r rhecvkqpu" cuuqelcvgf "y kij "WRKKF "rhpngf "dcpm" ceeqwpv0" Vj g"P REKuj cm" o ckpvckp"cp"cwf k/"tcknlhqt"gxgt { "dkf "gpvgtgf" lp" y g"UqemlGzej cpi g"crrn { kpi "r ncvhqto ."cpf "y g"hcdknk{ "vq"eqo r gpucvg" T KKi" *wukpi "vj g"WRKO gej cpkuo +"kp"ecug"qh"hckrgf "vtcpucevkqpu"uj cm'dg"y kaj "vj g"eqpegtpgf "gpvkv{ "*k0g0"vj g"Ur qpuqt"Dcpm"PREK" qt"yj g"Dopngtu"vq"yj g"Kuwg+"cv"y j qug"gpf "yj g"khge{erg"qh"yj g"ktopucevkqp"j cu"eqo g"vq"c"j cm0"Vj g"P REKuj cm'uj ctg"yj g"cwf kv" vtcki'qh'cmif kur wgf "vtcpucevkqpu'Tkpxguvqt'eqo r nckpvu'vq'vj g'Ur qpuqt'Dcpmu'cpf 'vj g'Dcpngtu'vq'vj g'Kuvvg0Vj g'NO 'uj cmicnuq'' dg"tgswktgf "\q"qdvckp"\j g"cwf kv"\tckrlltqo "\j g"Ur qpuqt"Dcpmu"cpf "\j g"Dcpngtu"\q"\j g"Kuwg"hqt"cpcn(ukpi "\j g"uco g"cpf "hkzkpi " rkcdktk/{0'Hqt"gpuvtkpi "vko gn/{ "kphqto cvkqp"vq"kpxguvqtu."UEUDu"uj cm'ugpf "UO U'cngtvu"cu"ur gekhlgf "kp"UGDK'ektewct"pq0' UGDKI QIEHF IF KN4 IEKT IR 14243 146: 213 10 " f cvgf " O ctej " 38." 4243." cu" co gpf gf " r wtuwcpv" vq" UGDK' ektewrct" pq0' UGDKI Q1EHF 1F KN4 IR1EKT 14243 1792 "f cvgf "Lwpg"4."42430"

Grgevt qple't gi kwt cylqp'qh'Cr r necylqpu''

Vjg"Fguki pcvgf "Kpvgto gfkct{"oc{"tgi kuvgt"vjg"Crrnkecvkqpu"wukpi"vjg"qp/nkpg"hceknkxkgu"qh"vjg"Uvqem!Gzejcpigu0'Vjg" F guki pcvgf "Kovgto gf kctkgu"ecp"cnuq"ugv"wr "hcekkkgu"hqt"qlh/nkpg "grgevtqpke"tgi kuvtcvkqp"qh"Crrnkecvkqpu."uwdlgev"vq"vj g" $eqpf k k qp" ij cv'' ij g \{ "o c \{ "uwdugs wgpvn \{ "wr mpcf" ij g"qhh/n kpg" f cvc "hkrg" kpvq" ij g"qp/n kpg "hceknk kgu" hqt "Kuwg" qp" c"t gi wrct "dcuku" length k kqp" ij cv'' ij g \{ "o c \{ "uwdugs wgpvn \{ "wr mpcf" ij g"qhh/n kpg" f cvc "hkrg" kpvq" ij g"qp/n kpg "hceknk kgu" hqt "Kuwg" qp" c"t gi wrct "dcuku" length k kqp" ij cv'' ij g \{ "o c \{ "uwdugs wgpvn \{ "wr mpcf" ij g"qhh/n kpg" f cvc "hkrg" kpvq" ij g"qp/n kpg "hceknk kgu" hqt "Kuwg" qp" c"t gi wrct "dcuku" length k kqp" ij g"qhh/n kpg" ij cv'' ij g "qp/n kpg "hceknk kgu" hqt "Kuwg" qp" c"t gi wrct "dcuku" length k kqp" ij cv'' ij g "qp/n kpg" hceknk kgu" hqt "Kuwg" qp" c"t gi wrct "dcuku" length k kqp" ij g" qp/n kpg" hceknk kgu" hqt "kqp" i kqp" i kqp"$ dghqtg''y g''enquwtg''qh''y g''Kuwg0'

Qp"yjg"Knuwg"Empulopi "Fevg."yjg"Fgukipevgf"Knovgtogfketkgu"oc{"wrnqcf"yjg"Crrnkeevkqpu"khn'uwej"kkog"cu"oc{"dg"rgtokwgf" d{"vj g"Uqem'Gzej cpi gu"cpf "cu"f kuenqugf "kp"vj g"Rtqur gewu0"

Qpn("Crrnkecklqpu" yi cv"ctg" wrnqcf gf "qp" yi g"Uvqeni Gzej cpi gu"Rncvlqto "ctg" eqpulkf gtgf "hqt" cmqecklqp" I "Cmqvo gpv0 Vj g" F guki pcvgf "Kovgto gf kctkgu"ctg"i kxgp"\kni3≥2"r o "qp"\j g"pgzv\'y qtmkpi "f c{ "hqmqy kpi "\j g"Kuwg"Emukpi "F cvg"\q"o qf kh{ "ugrgev" hkgrf u"wr nqcf gf "hp"yi g"Uvqeni'Gzej cpi g"Rrcvhqto "f wtkpi "yi g"Kuvwg"Rgtkqf "chvgt"y j kej "yi g"Uvqeni'Gzej cpi g*u+"ugpf "yi g"dkf" kphqto cvkqp"\q"yj g"Tgi kuxtct"\q"yj g"Kuuwg"hqt"hwtyj gt"r tqeguukpi ."

Vj g'Gs wlw{ 'Uj ct gu'j cxg'pqv'dggp'cpf 'y knipqv'dg't gi knyt gf 'wpf gt 'vj g'WUUUgewt knlgu'Cev'qh'3; 55. 'cu'co gpf gf '*vj g'' õWCUU Ugewt kılıgu' 'Cevö+'qt 'cp{ 'iwcvg' igewt kılıgu' icy u'lip' vj g' Wiplagf 'Uvcvgu'cpf 'oc{ 'pqv'dg'qllıgt gf 'qt 'iqnf 'y kıj lip' vj g'' Wplsgf 'Uw ygu'lqt 'tq.'qt 'hqt 'tj g'ceeqwpv'lqt 'dgpglls'qh 'WUUt gt uqpu'*cu'f gllppgf 'lp 'T gi wu xlqp 'U+'gzegr v'r wt uwcpv'tq'cp'' gzgo r skqp'lt qo .''qt'lp'c''vt cpuceskqp''pqv'uwdlgev''vq.''vj g''t gi kmt cskqp''t gs sskt go gpvu''qhi'vj g''WCOU'Ugeset kskgu''Cev''cpf '' crrhecdng'uwcvg'ugewthshgu'ncy u'hp'vj g'Wphsgf 'UvcvguU'Ceeqtfhpinf.'vj g'Us whsf''Uj ctgu'ctg'dghpi ''qhhgtgf ''cpf ''uqnf'' qwwlf g'\j g'Wplagf 'Uvcvgu'lp'\qlhuj qt g'\t cpucevlqpu'lp'\eqo rrlcpeg'\y kj "Tgi wrcvlqp'U'\wpf gt '\j g'WtUUUgewt klgu'Cev'\epf '' vj g'crrnecdig'icy u'qh'vj g'lwt kuf kevlqp'y j gt g'vj qug'qh'gt u'cpf 'icigu'qeewt 0'



Vj g'Gs wk{ 'Uj ctgu'j cxg'þqv'dggp'cpf 'y kniþqv'dg't gi knygtgf .'hknygf 'lqt'qvj gt y kng's wcnkligf 'lp'cp{ 'lqvj gt 'lwt knf kevkqp'' qwnkf g'Kpf kc'cpf 'o c{ 'þqv'dg'qhligt gf 'lqt 'lqqf .'cpf 'Crrnecvkqpu'o c{ 'þqv'dg'o cf g'd{ 'rgt uqpu'kp'cp{ 'lwej 'lwt knf kevkqp.'' gzegrv'kp'eqo rncpeg'y knj 'lj g'crrnecdng'icy u'qh'iwej 'lwt knf kevkqp0'

UWDO KUUQP 'CPF 'CEEGRVCPEG'QH'CRRNKECVKQP 'HQTO U''

Crrnlecpu"uj cm"qpn("wug"yj g"ur gekhlgf"Crrnlecvkqp"Hqto "hqt"yj g"rwtrqug"qh"o cmlpi "cp"crrnlecvkqp"kp"yto u"qh"yj g"Rtqurgewu0"Vj g"Crrnlecvkqp"Hqto "uj cmi'eqpvckp"kphqto cvkqp"cdqw'yj g"Crrnlecpv'cpf "yj g"rtkeg"cpf "yj g"pwo dgt"qh'Gs wkx{" Uj ctgu"yj cv'yj g"Crrnlecpwi'y kuj "vq"crrn{"hqt0/Crrnlecvkqp"Hqto u"f qy pmqcf gf "cpf "rtkpvgf "htqo "yj g"y gduksgu"qh"yj g"Uvqemi Gzej cpi g"uj cmi'dgct"c"u{uyo "i gpgtcvgf "wpks wg"crrnlecvkqp"pwo dgt0/Crrnlecpwi"ctg"tgs wktgf "vq"gpuwtg"yj cv'yj g"CUDC" Ceeqwpv'qt"WRKhpngf "DcpmiCeeqwpv'j cu'uwlhkekgpv'etgf kv'dcmcpeg"cu'cp"co qwpv'ys wkxcngpv'vq"yj g'hwni/Crrnlecvkqp"Co qwpv' ecp"dg'dmengf "d{"yj g"UEUD"qt"Urqpuqt"Dcpmi'cv'yj g"ko g"qh'uwdo kwkpi "yj g"Crrnlecvkqp0'

Cp"Kpxguvqt."lpvgpf kpi "\q"uwduetkdg"\q"vj ku"Kuuvg."uj cm'uwdo kv'c"eqo rngvgf "Dkf "Ewo "Crrnkecvkqp"Hqto "\q"cp{"qh'vj g" hqmy kpi "kpvgto gf kctkgu"*Eqmgevkxgn{"ecmgf "o"oF guki pcvgf "Kpvgto gf kctkguö+""

Ut OP qO'	Fguli pcvgf 'Kovgto gf lct lgu'
30'	Cp"UEUD.'y kj 'y j qo ''y g"dcpm'ceeqwpv''q"dg"dmqengf.'ku"o ckpvckpgf"
40'	C'u{pf kecyg'o go dgt'*qt'uwd/u{pf kecyg'o go dgt+"
50'	C'unqem'dtqngt'tgi kungtgf'y kaj 'c'tgeqi pk gf'unqem'gzej cpi g'*cpf'y j qug'pco g'ku'o gpwkqpgf'qp'yj g'y gduksg'' qh'yj g'unqem'gzej cpi g''cu'gnki kdng'hqt'yj ku'cevkxks{+'*:dtqngtø+''
60'	C'f gr qukqt { 'r ctvkekr cpv*:F Rø+"\y j qug'pco g'ku'o gpvkqpgf 'qp'\j g'y gduk\g'qh'\j g'uvqem'gzej cpi g''cu'gnki kdng'' hqt'\j ku''cevkxkv{+"
70'	C'tgi kıntct'\q''cp'kınıng''cpf 'uj ctg'\tcpuhgt''ci gpv*:TVCø+*y j qug'pco g'kı''o gpvkqpgf ''qp''\j g'y gdukg''qh'\j g'' unqem'gzej cpi g''cu''grki kdrg'hqt''j kı''cevkxk\{+''

Tgvckni'kpxgunqtu'uwdo kwkpi "crrnkecvkqp"y kaj "cp{"qh'vj g"gpvkkgu"cv*kk+"vq"\x+"cdqxg"*j gtgkpchrgt"tghgttgf "cu'ōKpvgto gfkctkguö+." uj cm'gpvgt"vj gkt "WRKKF 'kp"vj g"crrnkecvkqp"hqto 0'

 $\label{thm:condition} Vj\ g"chqtguckf" lipvgto\ gf\ lettlgu'lij\ cm''cv''j\ g''ko\ g''qh'tgegkr\ v'qh''crrrhecvkqp.''i\ kxg''cp''cempqy\ rgf\ i\ go\ gpv'\q''kpxguvqt.''d\ ''xg''yj\ g''kpxguvqt.''cu''c''rtqqh''qh''j\ cxkpi\ ''ceegr\ vgf\ ''yj\ g''crrrhecvkqp''hqto\ .''kp''\ rj\ \{ukecn'qt''grgevtqpke''o\ qf\ g.''tgur\ gevkxgn\{0''\ lipvgvyq'', lipvgvyq'$

F guki pcvgf "Kovgto gf kctkgu" "qi gt" 'yi cp" UEUDu+"chvgt" ceegr vkpi "crrnkecvkqp" hqto "uwdo kwgf" d{"P KKu"cpf" S kDu"uj cm'ecrwtg" cpf "wrmqcf" yi g" tgngxcpv' f gvcknu" kp" yi g" gngevtqpke" dkf f kpi "u{uvgo "qh" uvqem' gzej cpi g*u+" cpf "uj cm' uwdo kvff grkxgt" yi g" Crrnkecvkqp" Hqto u'vq" tgur gevkxg" UEUDu'y j gtg" yi g"crrnkecpwi j cu'c" dcpm' ceeqwpv'cpf" uj cm'pqv'uwdo kv'kv'vq" cp{"pqp/UEUD" Dcpm0'

 $\label{thm:power$

Ki'ku''enctkhkgf ''vj cv'Tgvckn'lkpf kxkf vcn'lkpxguvqtu''o c{ ''eqpvkpvg''vq''uvvdo kv'r j {ukecn'CUDC''Hqto u''y ksj ''UEUDu''y ksj qww''vukpi ''vj g'' WRKO gej cpkuo 0'

Vj g'wr mcf ''qh''y g'f gwku''kp''y g''grgevtqpke''dkf f kpi ''u{ uvgo ''qh''uvqem'gzej cpi g''y km'dg''f qpg''d{<'''

Hqt" Crrilecvkqpu' uwdo kwgf" d{"	Chygt" ceegr vkpi " yj g" hqto " uwdo kwgf " d{" TKKu" *y kyj qwv" wukpi " WRK' hqt"
kpxguvqt u'vq'UEUD<'	rc{ogpv+."PKM"cpf"SKDu."UEUD"ujcm"ecrw.tg"cpf"wrm,cf"yjg"tgrgxcpv"
	f gvcknu'kp''y g'grgevtqpke'dkffkpi 'u{uvgo 'cu'ur gekhkgf'd{''y g'uvqem'gzej cpi g*u+''
	cpf 'o c{ 'dgi kp'drqemkpi 'hwpf u'cxckrcdrg'kp''yj g''dcpm'ceeqwpv''ur gekhkgf 'kp''yj g''
	hqto."\q"\jg"gzvgpv"qh"\jg"crrnkecvkqp"oqpg{"\urgekhkgf0"
Hqt" crrlecvlqpu' uwdo kwgf" d{"	Chygt "ceegr vkpi "vj g"cr r nkecvkqp"hqto ."tgur gevkxg"kpvgto gf kct{"uj cm'ecr wtg"
kpxguwqtu'' *qvj gt'' vj cp'' Tgvckii'	cpf "wr nqcf "yj g"tgrgxcpv"f gwkuu"kp"yj g"grgevtqpke"dkf f kpi "u{uvgo "qh"uvqem"



y kj qww'twg'qh'WRKhqt'rc{o gpv<' tgur gevkxg"UEUDu'hqt'drqenkpi "qhi'hwpf u'y kj kp'qpg"f c{"qhi'enquwtg"qhi'Qhtgt0 Hqt'' crrhecvkqpu'' uwdo kwgf'' d{'' Chgt"ceegr vkpi "yi g"crrhecvkqp"hqto ."tgur gevkxg"kpwgto gf kct{"uj cmi'ecr wtg' cp''UEUDu'y kj "wug''qhi'WRK'hqt'' ggevtqpke"dlf f kpi "u{uwgo "qhi'uvqemi'gzej cpi g*u+0' " "Uvqemi'Gzej cpi g"uj cmi'uj ctg"crrhecvkqp"f gvcknu "kpenwf kpi "yi g"WRK'KF"y kj "Ur qpuqt"Dcpmi'qp"c"eqpvkpwqwu"dcuku"yi tqwi j "CRK'kpwgi tcvkqp." wq "gpcdrgi Ur qpuqt"Dcpmi'qi kpkkcvg"o cpf cvg'tgs wguv'qp'kpxguvqtu'hqt "drqenkpi "qhi'hwpf u0" " "Ur qpuqt"Dcpmi'uj cmi'kpkkcvg"tgs wguv'hqt"drqenkpi "qhi'hwpf u"yi tqwi j "P REK'vq"	Kpf kxkf werl' Kpxguvqt u+'' vq''	gzej cpi g0'Rquv'wr nqcf kpi ."vj g{ "uj cm'hqty ctf "c"uej gf wrg"cu'r gt "r tguetkdgf "
Hqt" crrheckqpu" uwdo kwgf" d{" Chgt"ceegr wpi "yi g"crrheckqp"hqto ."tgurgevkxg"pvgto gf kct{"uj cm'ecrwtg" cpf" wr mqcf" yi g" tgrgxcpv" crrheckqp" f gwkni." kpenwf kpi "WRK KF." kp" yi g' grgevtqpke"dkf f kpi "u{ uwgo "qh'uvqem'gzej cpi g*u+0" " "Uvqem'Gzej cpi g"uj cm'uj ctg"crrheckqp"f gwkni"kpenwf kpi "yi g"WRKKF"y kyi Ur qpuqt"Dcpm'qp"c"eqpvkpvqwu"dcuku"yi tqwi j "CRK'kpvgi tcvkqp." vq"gpcdrg' Ur qpuqt "Dcpm'q'kpkkcvg"o cpf cvg'tgs wguv'qp'kpxguvqtu'hqt "dmemkpi "qh'hwpf u0" " "Ur qpuqt "Dcpm'uj cm'kpkkcvg"tgs wguv'hqt"dmemkpi "qh'hwpf u"yi tqwi j "P REKvq"	kpvgto gf kctkgu''qvj gt''vj cp''UEUDu''	hqto cv" cmpi "y kj "y g" cr r nlecvkqp" hqto u" vq" f guki pcvgf "dtcpej gu" qh" y g"
kpxguvqtu' vq' kpvgt o gf kctkgu' qvj gt '' yi cp''UEUDu' y kvj ''wug''qh' WRK'hqt'' rc{o gpv'' Uvqem'Gzej cpi g"uj cm'uj ctg"cr r kecvkqp"f gvcknu "kpenvf kpi " WRK'KF ." kp" yi g' grgevtqpke "dhf f kpi "u{ uvgo "qh'uvqem'gzej cpi g*u+0' " Uvqem'Gzej cpi g"uj cm'uj ctg"cr r kecvkqp"f gvcknu "kpenvf kpi "yi g"WRK'KF "y kyj Ur qpuqt "Dcpm'qp"c"eqpvkpvqvu "dcuku" yi tqwi j "CRK'kpvgi tcvkqp." vq"gpcdng' Ur qpuqt "Dcpm'vq'kpkkcvg"o cpf cvg'tgs wguv'pp'kpxguvqtu'pqt'dqmenkpi "qh'hwpf u0" " Ur qpuqt "Dcpm'vj cm'kpkkcvg"tgs wguv'pq'hqt'dnqenkpi "qh'hwpf u''yi tqwi j "P REKvq'	y kaj qwy'wug'qhiWRKhqt'rc{ogpv<''	tgurgevkxg"UEUDu'hqt"dnqemlopi "qh'hwpfu''y knj kop"qpg"fc{"qh'enquwtg"qh'Qhhgt0"
y cp''UEUDu''y kj ''wug''qh''WRK'hqt'' rc{o gpv'' "Uqem'Gzej cpi g"uj cm'uj ctg"cr r necvkqp"f gvckuu'kpenwf kpi "yj g"WRK'KF "y kj '' Ur qpuqt"Dcpm'qp"c"eqpvkpwqwu"dcuku"yj tqwi j "CRK'kpvgi tcvkqp." vq"gpcdng' Ur qpuqt'Dcpm'vq'kpkkcvg''o cpf cvg'tgs wguv'qp'kpxguvqtu'hqt'dmemkpi "qh'hwpf u'' "Ur qpuqt''Dcpm'uj cm'kpkkcvg''tgs wguv'hqt''dmemkpi "qh'hwpf u''yj tqwi j "P REKvq'	Hqt'' crrnecvkqpu'' uwdo kwgf'' d{''	Chygt "ceegr vlpi "yj g"cr r nlecvlqp"hqto ."tgur gevlxx g"kpvgto gf kct { "uj cm'ecr wxt g"
" Uvqemi'Gzej cpi g"uj cm'uj ctg"cr r necvkqp"f gwknu"kpenwf kpi "yj g"WRK'KF "y kj ut qpuqt"Dcpmi'qp"c"eqpvkpwqwu"dcuku"yj tqwi j "CRK'kpvgi tcvkqp."vq"gpcdng' Ur qpuqt 'Dcpmi'q'kpkkcvg'o cpf cvg'tgs wguv'qp'kpxguvqtu'hqt'dmemkpi "qh'hwpf u'u" Ur qpuqt''Dcpmi'uj cm'kpkkcvg''tgs wguv'hqt''dmemkpi "qh'hwpf u'vj tqwi j "P REKvq'	kpxguvqtu''vq''kpvgtogfkctkgu''qvjgt''	cpf "wrnqcf "yig" tgngxcpv" crrnlecvlqp" f gvcknu." kpenwf kpi "WRK KF." kp" yig"
Uvqemi'Gzej cpi g"uj cmi'uj ctg"cr r necvkqp"f gvcku'ikpenvf kpi "vj g"WRKKF"y ky i Ur qpuqt"Dcpmi'qp"c"eqpvkpvqvu''dcuku''vj tqwi j "CRK'kpvgi tcvkqp."vq"gpcdrg Ur qpuqt 'Dcpmi'qi kpkkcvg''o cpf cvg'tgs wguv'qp'kpxguvqtu'hqt'dmqemkpi "qh'hwpf u0" " Ur qpuqt''Dcpmi'uj cmi'kpkkcvg''tgs wguv'hqt''dmqemkpi "qh'hwpf u''vj tqwi j "P REK'vq'	vj cp''UEUDu''y kyj ''wug''qh''WRK'hqt''	grgevtqple dlf f lpi 'u{ uvgo 'qh'uvqem'gzej cpi g*u+0'
Ur qpuqt "Dcpm'qp"c"eqpvlpvqvu"dcuku" yi tqwi j "CRK'kpvgi tcvkqp." vq "gpcdrg" Ur qpuqt 'Dcpm'q' kpkkcvg'o cpf cvg'tgs wguv'qp kpxguvqtu'hqt 'dmqemkpi 'qh'hwpf u' " Ur qpuqt 'Dcpm'uj cm'kpkkcvg''tgs wguv'hqt 'dmqemkpi 'qh'hwpf u' yi tqwi j 'P REKvq'	rc{o gpv''	"
Ur qpuqt 'Dcpm'\q' lpkkcvg''o cpf cvg'tgs wguv'qp' lpxguvqtu'hqt''dnqemlpi ''qh'hwpf u0 " Ur qpuqt 'Dcpm'\uj cm' lpkkcvg''tgs wguv'hqt''dnqemlpi ''qh' lwpf u''yj tqwi j ''P REK'vq'		Uqent'Gzej cpi g"uj cm'uj ctg"cr r nlecvkqp"f gvcknu"kpenvf kpi "vj g"WRKKF "y kj "
" Ur qpuqt "Dcpm'uj cm'lpkkcvg"tgs wguv'hqt "dnqemkpi "qh'hwpf u''yj tqwi j "P REK'vq'		Ur qpuqt"Dcpm'qp"c"eqpvkpwqwu"dcuku"yj tqwi j "CRK'kpvgi tcvkqp."vq"gpcdrg"
		Ur qpuqt 'Depni'vq 'kpkklevg'o epf evg'tgs wguv'qp 'kpxguvqtu'hqt'dnqemkpi 'qhi'hwpf u0' "
		Ur qpuqt "Depm'uj cm'kpkkevg'tgs wguv'hqt "dmjemkpi "qh'hwpf u'vj tqwi j "P REKvq"
pxguqtupxguqt'uj cmceegr vo cpf cyg tgs wguvnqt diqempi 'qnhwpf u 'qp' j kil		kpxguvqt0Kpxguvqt'uj cm'ceegr v'o cpf cvg't gs wguv'hqt'drqenkpi 'qh'hwpf u.'qp'j ku1''
j gt "o qdkrg"cr r rkeckqp."cuuqekcygf "y kij "WRKKF "rkpngf "dcpmlceeqwpv0"		

Y j q'Ecp'Crrn(A"

Gcej "Dkf f gt"uj qwrf "ej gently j gvj gt"kv'ku"grki kdrg"vq"cr r n{ "wpf gt"cr r nlecdrg"rcy ."twrgu."tgi wrcvkqpu."i wkf grkpgu"cpf "r qrkekgu0" Hwt vj gto qtg. "egtvckp"ecvgi qtkgu"qh"Dkf f gtu. "uwej "cu"P T Ku. "HRKi"cpf "HXE Ki"o c{ "pqv'dg"cmqy gf "vq"cr r n{ "kp"vj g"Kuwg"qt"vq" j qrf "Gs wkx{ "Uj ctgu."kp"gzeguu"qh"egtvckp"rko kuu"ur gekhkgf "wpf gt"cr r nlecdrg"rcy 0'Dkf f gtu"ctg"tgs wguvgf "vq"tghgt "vq"vj g"F tchv" Rtqur gewwi"hqt"o qtg"f gvcknu0'

"Uwdlgev'\q"\j g"cdqxg."cp"kmwntc\kxg"hkn\qh"Dkffgtu"ku"cu'hqmqy u<'0"

 $\label{thm:composition} \begin{tabular}{l}{l} Kpf kcp"pcvkqpcni'tgukf gpv'kp"kpf kc"y j q"ctg"pqv'kpeqo r gvgpv'vq"eqpvtcev'wpf gt"y g"Kpf kcp"Eqpvtcev'Cev."3: 94. "cu"co gpf gf ."kp" ukpi rg"qt"cu"c"lqkpv''cr r rkecvkqp"cpf "o kpqtu"j cxkpi "xcrkf "f go cv'ceeqwpv''cu"r gt"F go qi tcr j ke"F gvcknu"r tqxkf gf "d{"vj g"F gr qukqtkgu."qwt"Eqo r cp{"uj cm"j cxg"vj g"tki j v'vq" ceegr v'vj g"Cr r rkecvkqpu''dgmpi kpi "vq''cp''ceeqwpv'hqt"vj g"dgpghkv'qh'o kpqt'" wcff kcpuj kr <math>+=$ "

Eqo r cpkgu."eqtr qtcvg"dqf kgu"cpf "uqekgvkgu"tgi kuvgtgf "wpf gt"vj g"cr r nkecdng"ncy u"kp"Kpf kc"cpf "cwj qtkl gf "vq"kpxguv"kp"vj g" Gs wkv{ "Uj ctgu'wpf gt"vj gkt'tgur gevkxg"eqpuvkwwkqpcn'cpf "ej ctvgt"f qewo gpvu="

S KDu≓

O www.cn'Hwpf u'tgi kuvgtgf 'y kyj 'UGDK='

 $\label{thm:continuity:continuit$

Kpf kcp"Hopcpekcn" Kpurkwrkqpu." uej gf wrgf "eqo o gtekcn" dcpmu." tgi kqpcn" twtcn" dcpmu." eq/qr gtcrkxg" dcpmu" *uwdlgev" vq" TDK'r gto knukqp. "cpf "vj g"UGDKT gi wrcrkqpu" cpf "qvj gt "rcy u." cu" cr r necdrg⊭"

HKKu"cpf "uwd/ceeqwpu"qh"HKKu"tgi kngtgf "y kj "UGDK"qyi gt"yi cp"c"uwd/ceeqwpv'y j kej "ku"c"hqtgki p"eqtrqtcvg"qt"c"hqtgki p" kpf kxkf wcrl'wpf gt"yi g'S KD"Rqtvkqp="

No kgf "Nedktk{ "Retypgtuj kr u'*NNRu+tgi knygtgf "kp"kf ke "cpf "cwj qtk gf "vq"kpxguv'kp"gs wkx{ 'uj ctgu="

 $\label{thm:linear} Uwd/ceeqwpul"qh"HKKu"tgi~kuygtgf~y~kj~"UGDK"y~j~kej~"ctg"hqtgki~p"eqtr~qtcvg"qt"hqtgki~p"kpf~kxkf~wcnu"qpn{"wpf~gt"vj~g"pqp/kpuxkwxkqpcn"cr~r~nkecpvxu"ecvgi~qt{="$

 $Xgpwtg" \ Ecr \ kcn" \ Hwpf \ u" \ cpf " \ Cngtpc \ kg" \ Kpxguvo \ gpv'' \ Hwpf " \ *K+" \ tgi \ kuygtgf " \ y \ kj " \ UGDK-" \ Ucvg" \ Kpf \ wuxtkcn'' \ F \ gxguqr \ o \ gpv'' \ Eqtr \ qtc \ kqpu-"$

Hqtgki p'Xgpwtg'Ecr kcn'Kpxguvqtu'tgi knygtgf 'y kj ''y g'UGDK''

Vtwwwlnqekgvkgu'tgi knytgf "vpf gt"vj g"Uqekgvkgu'Tgi knytcvkqp'Cev."3: 82."cu"co gpf gf."qt"vpf gt"cp{"qvj gt"rcy 'tgrcvkpi "vq"Vtwwu" cpf "y j q"ctg"cwj qtk gf "vpf gt"vj gkt"eqpuvkwkqp"vq"j qrf "cpf "kpxguv"kp"gs wkv{"vj ctgu="



Uekgpvkhle"cpf lqt"Kpf wuxtlcn'T gugctej "Qti cpk| cvkqpu"cwj qtk| gf "vq"kpxguv"kp"gs wkx["uj ctgu="

Kpuwtcpeg'Eqo r cpkgu'tgi kungtgf 'y kij 'Kpuwtcpeg'Tgi wrcvqt { 'cpf 'F gxgrqr o gpv'Cwij qtk\{ .'Kpf kc=''

Rtqxkf gpvlHwpf u'y kij "o kpko wo "eqtr wu'qh" 47 "Etqtgu"cpf "y j q"ctg"cwj qtkl gf "wpf gt"\j gkt"eqpuvkwwkqp"\q"j qrf "cpf "kpxguv'kp" gs wkv{ "uj ctgu≓"

Rgpukqp"Hwpf u'y kij "o kpko wo "eqtr wu"qh" 47"Etqtgu"cpf "y j q"ctg"cwij qtk gf "wpf gt"vj gkt "eqpukkwkqp"vq"j qrf "cpf "kpxguv"kp" gs wkv{ "uj ctgu≓"

P cylapen'Kpxguvo gpv'Hwpf 'ugv'wr 'd{ "Tguqnwkqp'pq0H0P q04 15 H227/F F KKf cygf 'P qxgo dgt '45."4227'qh'I qxgtpo gpv'qh'Kpf kc" r wdrkuj gf "kp" ij g"I c| gwg"qh" kpf kc="

Kpuwtcpeg'hwpf u'ugv'wr "cpf "o cpci gf "d{"cto {."pcx{"qt "cht 'hqteg"qh'\y g"\Wpkqp"qh'\Kpf kc="

O wnkrevgten'epf 'dkrevgten'f gxgrqr o gpv'hkpepeken'kpurkwwkqp="

Grki kdrg'S HKu≓'

Kpuwtcpeg'hwpf u'ugv'wr "cpf "o cpci gf "d{"cto {."pcx{"qt "cht 'hqteg"qh'\y g"\Wpkqp"qh'\Kpf kc="

Kpuwtcpeg'hwpf u'ugv'wr 'cpf 'o cpci gf 'd { 'vj g'F gr ctvo gpv'qh'Rquvu. 'Kpf kc="

Cp{"qyigt"rgtuqp"grkikdrg"\q"crrn{kpi "kp"\yiku"Kuwg."wpfgt"\yig"rcyu."twrgu."tgi wrcvkqpu."i wkfgrkpgu"cpf"rqrkekgu"crrnkecdrg"\q" yj go 0'

Crrnlecvkqpu'pqv'vq'dg'o cfg'd{<

- Okpqtu'*gzegrv'wpf gt'i wctf kcpuj kr+"
- Rct vpgt uj kr 'lkt o u''qt ''vj gkt ''pqo kpggu''
- Hqtgki p'Pcvkqpcnu'*gzegrv'PTKu+'''
- Qxgtugcu'Eqtrqtcvg'Dqf kgu''

Vj g"Gs wks{"Uj ctgu"j cxg"pqv'dggp"cpf"y km'pqv'dg"tgi knygtgf."rknygf "qt"qyj gty kng"s wcrkhlegf "kp"cp{"qyj gt"lwtkuf kevkqp"qwulkf g" Kpf kc"cpf "o c{"pqv'dg"qhhgtgf "qt"uqrf "cpf "cr r rlecvkqpu"o c{"pqv'dg"o cf g"d{"r gtuqpu"kp"cp{"uwej "lwtkuf kevkqp."gzegr v'kp" eqo r nkcpeg'y kyj "yj g"cr r nkecdrg"ncy u"qh"uwej "Iwtkuf kevkqp0"

RCTVIE IRCVIOP"D["CUUOE ICVGU'1"CHHINICVGU'OH"NGCF"O CP CI GT."RTQO QVGT."RTQO QVGT" I TQWR'CPF'RGTUQPU'TGNCVGF'VQ'RTQOQVGT'I'RTQOQVGT'I TQWR''

Vjg"NO "ujcm"pqv"dg"cmqygf"vq"rwtejcug"Gswkx{"Ujctgu"kp"yjku"Kuuwg"kp"cp{"ocppgt."gzegrv"vqyctfu"hwrhkmkpi"yjgkt" wpf gty tkwpi "qdrki cwlqpu0J qy gxgt."cuuqekcvgu"cpf "chhkrkcvgu"qh"vj g"NO "o c{ "uwduetkdg"vq"qt"r wtej cug"Gs wkx{ "Uj ctgu"kp"vj g" Kuwg. "gkj gt 'kp '\j g 'S KD 'Rqt \kqp "qt 'kp 'P qp/Kpuvkwvkqpcn'Rqt \kqp "cu"o c { "dg "crrnkecdng" \q "twej "Crrnkecpvu0Uwej "Crrn (kpi "cpf " chhkkevgu"qh"NO. "uj cm'dg"vtgevgf "gs wenn('hqt 'vj g"r wtr qug"qh'emqeevkqp 'vq 'dg"o cf g"qp 'e 'r tqr qt vkqpevg'deuku0'

P gksj gt"*k+"/ij g"NO "qt"cp{"cuuqekcvgu"qh"/ij g"NO ."gzegr v"O wwcn"Hwpf u'ur qpuqtgf "d{"gpvkkgu"/y j kej "ctg"cuuqekcvgu"qh"/ij g"NO " qt"kpuwtcpeg"eqo r cpkgu"r tqo qvgf "d{"gpvkskgu"y j kej "ctg"cuuqekcvg"qh"NO "qt"CKHu"ur qpuqtgf "d{"vj g"gpvkskgu"y j kej "ctg" cuuqekcyg"qh"yi g"NO "qt"HRKit"*qyi gt"yi cp"kpf kxkf wcnu."eqtr qtcyg"dqf kgu"cpf "hco kn("qhhkegu+; 'ur qpuqtgf "d ("yi g"gpykxkgu"y j kej " ctg"cuuqekcvgu"qh'yi g"NO "pqt="*kk+"cp{"õr gtuqp"tgncvgf "vq"yi g"Rtqo qvgt"cpf "o go dgtu"qh'yi g"Rtqo qvgt"I tqwrö"uj cm'crrn{"kp" yj g'Knuwg'wpf gt''yj g'Cpej qt'Kpxguvqt''Rqtvkqp0'

 $Hqt''yj g''r wtr qugu''qh''yj ku''ugevkqp."c''S KD''y j q''j cu''cp \{''qh''yj g''hqmqy kpi ''tki j wu''uj cm''dg''f ggo gf ''vq''dg''c''õr gtuqp''tgncvgf ''vq''yj g'' ku''ugevkqp."c''S KD''y j q''j cu''cp \{''qh''yj g''hqmqy kpi ''tki j wu''uj cm''dg''f ggo gf ''vq''dg''c''\~or gtuqp''tgncvgf ''vq''yj g'' ku''ugevkqp."c''S KD''y j q''j cu''cp \{''qh''yj g''hqmqy kpi ''tki j wu''uj cm''dg''f ggo gf ''vq''dg''c''\~or gtuqp''tgncvgf ''vq''yj g''' ku''ugevkqp."c''S KD''y j q''j cu''cp \{''qh''yj g'' kq''yj g'' kq''yj g'' kq''yj g'' kq''yj g''' kq''yj kq''y kq''y$ Rtqo qygt"cpf "o go dgtu"qh"yj g"Rtqo qygt"I tqwr ö<"tc+"tki j vu"wpf gt"c"vij ctgj qrf gtuø'ci tggo gpv"qt"xqvkpi "ci tggo gpv"gpygtgf" kpvq'y kj ''y g'Rtqo qvgt'cpf 'o go dgtu'qh''y g'Rtqo qvgt'I tqwr = "d+'xgvq'tki j vu="qt' e+'tki j v'vq'crrqkpv'cp{ 'pqo kpgg'fktgevqt'qp'' qwt'Dqctf0'



CRRNIECVIQP'D['IPFICP'RWDNIE'IPENWFIPI 'GNN IONG'PTIU'CRRN[IPI 'QP'PQP/TGRCVTICVIQP''

Crrdeckqp"o ww'dg"o cf g"qpn("kp"y g"pco gu'qh"kpf kxkf wcn. "rko kxgf "eqo r cpkgu"qt "wcwwqt { "eqtr qtckqpu" l'kpukwwkqpu"cpf " pqv'kp"y g"pco gu'qh"o kpqtu"kqy gt "y cp"o kpqt" j cxkpi "xcnkf" f gr qukqt { "ceeqwpu"cu"r gt "f go qi tcr j ke"f gwkni"r tqxkf gf "d { "y g" f gr qukct { + "hqtgki p"pcvkqpcn. "vt www." wprguu"y g"vt ww'ku"tgi knygtgf "wpf gt "y g"Uqekgvkgu"T gi knytcykqp"Cev."3: 82"qt "cp { "qy gt " cr r rkecdrg" vt ww'ncy u"3: 6"cpf "ku"cwj qt k gf "wpf gt "ku"eqpuvkwwkqp" qn" qnf "uj ctgu"cpf "f gdgpwtgu"kp"c"eqo r cp { + "J kpf w' Wpf kxkf gf "Hco knkgu"*J WH+: "r ct vpgtuj kr "hkto u"qt "y gkt "pqo kpggu0"kp"ecug"qh"J WHu. "cr r rkecvkqp"uj cm'dg"o cf g"d { "y g"Mct wc" qh'y g"J WHD'

Grki kdrg"PTKi"crrn{kpi "qp"c"pqp/tgrcvtkcvkqp"dcuku"o c{"o cmg"rc{o gpwi"d{"kpy ctf "tgo kwcpeg"kp"hqtgki p"gzej cpi g"vj tqwi j "pqto cn"dcpmkpi "ej cppgnu"qt"d{"fgdku"vq"PTG"l"HEPT"ceeqwpwu"cu"y gm"cu"PTQ"ceeqwpwu"0"

Cp"crrrlecpvlkp"\dig g'P gv\Rwdrle"Ecvgi qt { "ecppqv\o cng"cp"crrrlecvkqp"\qt"\di cv\pwo dgt"\qh\Gs wkx\{ "Uj ctgu"\gzeggf kpi "\di g"pwo dgt" qh\Gs wkx\{ "Uj ctgu"\qthgtgf "\q"\di g"r wdrle"

CRRNIECVIQP'D['O WWCN'HWPFU'

 $Y \; kj \; "tgur gev' vq' Cr r r lec vkqpu'' d \{ "O \; wwcn' Hwpf \; u." c''egt vkhlef "eqr \{ "qh''y \; gkt'' UGDKtgi \; kuntc vkqp'' egt vkhlec vg''o \; wun'' dg''nqf i \; gf "cmpi " y \; kj "'y \; g'' Cr r r lec vkqp'' Hqto 0 Hckrlpi "'y \; ku. "qwt "Eqo r cp { "lp" eqpuwnc vkqp''y \; kj "Ngcf "O cpci gt. "tgugt xgu''y \; g''tki j v'vq'' ceegr v'qt'' tglgev'cp { "Cr r r lec vkqp'' lp''y j qrg''qt'' lp''r ctv. "kp''gknj gt "ecug. "y \; knj qw''cuuki pkpi "cp { "tgcuqp''y gtgqh0'Vj g''Cr r r lec vkqpu''o cf g''d { " y g''cuugv'o cpci go gpv'eqo r cpkgu'qt''ewunqf kcpu'qh'O wwcn' Hwpf u''n cm'ur gekhlecm { "uncvg''y g''pco gu'qh''y g''eqpegt pgf "hej go gu'' lnt''y j kej "'y g''Cr r r lec vkqpu''ctg''o cf g0''}$

Kp"ecug"qh"c'Owwcn"Hwpf."c"ugrctcvg"Crrnlecvkqp"ecp"dg"ocfg"kp"tgurgev"qh"gcej "uejgog"qh"yjg"Owwcn"Hwpf"tgikungtgf"ykjj" yjg"UGDKcpf"uwej"Crrnlecvkqpu"kp"tgurgev"qh"oqtg"yjcp"qpg"uejgog"qh"yjg"Owwcn"Hwpf"ykm"pqv"dg"vtgcvgf"cu"ownkrng" Crrnlecvkqpu"rtqxkfgf"yjcv"uwej"Crrnlecvkqpu"engctn("kpfkecvg"yjg"uejgog"eqpegtpgf"hqt"yjkej"yjg"Crrnlecvkqp"ku"uwdokwgf0"

 $Pq'O\ wwcn'l Hwpf'' uej\ go\ g'uj\ cm'l pxguv'o\ qtg''yj\ cp''32' \quad ''qh'l ku'pgv'cuugv'xcnwg'' kp''yj\ g'' Gs\ wkw{ ''Uj\ ctgu''qt'' gs\ wkw{ ''tgncvgf'' kpunt wo\ gpwu'' qh''cp{ ''Eqo\ r\ cp{ ''r\ tqxkf\ gf''yj\ cv'yj\ g'' ho\ kw'qh''32' \quad ''uj\ cm''pqv''dg'' cr\ r\ n'ecdng'' hqt'' kpxguvo\ gpwu'' kp'' kpf\ gz'' hwpf\ u''qt'' ugevqt''qt'' kpf\ wwnt{ ''uj\ ctg''ecr\ kxcn'' evtt{ 'kp'' y wwcn'' hwpf gt''cm'' ku'' uej\ go\ gu''uj\ qwnf'' qy\ p''o\ qtg''yj\ cp''32' \quad ''qh''cp{ ''Eqo\ r\ cp{ ''gu''r\ ckf/wr'' uj\ ctg''ecr\ kxcn'' ectt{ kpi ''xqvkpi ''tki j\ w0''}}$

CRRNÆCVKQP'D['J WHu''

Crrnkecvkqpu"d{"J WHu"J kpf w"Wpf kxkf gf "Hoo knkgu"qt"J WHu."kp"yj g"kpf kxkf won"poo g"qh"yj g"Motvo"Vj g"Crrnkecvv'uj qwnf "urgekh{"yj cv'yj g"Crrnkecvkqp"ku"dgkpi "o of g"kp"yj g"poo g"qh"yj g"J WH"kp"yj g"Crrnkecvkqp"Hqto "cu"hqmqy u<"õP oo g"qh"uqng"qt" hktuv'Crrnkecvv<"Z[\"J kpf w"Wpf kxkf gf "Hoo kn{"crrn{kpi "yj tqwi j "Z[\."yj gtg"Z[\"ku"yj g"poo g"qh"yj g"Motvoö0Crrnkecvkqpu" d{"J WHu"o o{"dg"eqpukf gtgf"cv'rct"y kyj "Crrnkecvkqpu"htqo "kpf kxkf won0"

CRRNKECVKOP'D['GNK KONG'PTKi'

 $Grki kdrg"P T Ki"o c {"qdvckp"eqr kgu"qh"Crr rhecvkqp"Hqto "htqo "yi g"F guki pcvgf "Kpygto gf kctkgu0'Qpn("Dkf u"ceeqo r cpkgf "d{" }r c {o gpv'kp"Kpf kcp"T wr ggu"qt "htggn("eqpxgt kdrg"hqtski p"gzej cpi g"y knidg"eqpukf gtgf "hqt"Cmqvo gpv0Grki kdrg"P T KCrr rhecpv" crr n{kpi "qp"c"tgr cvt kcvkqp"dcuku"d{"wukpi "yi g"P qp/T gukf gpv"Hqto u"uj qwrf "cwj qtk{ g"yj gkt"UEUD"qt"uj qwrf "eqphkto "I"ceegr v" yi g"WRKO cpf cvg"T gs wguv"*kp"ecug"qh"T Kfu"wukpi "yi g"WRKO gej cpkuo +"vq"dmqem"yi gkt"P qp/T gukf gpv"Gz vgtpcri"*\ddot P T G\dot + ceeqwpvu. "qt"Hqtgki p"Ewttgpe{"P qp/T gukf gpv"\ddot HEP T \dot + CUDC "Ceeqwpvu. "cpf "grki kdrg"P T KCrr rhecpv"crr n{kpi "qp"c"pqp/tgrcvkcvkqp"dcuku"d{"wukpi "T gukf gpv"\ddot Hqto u"uj qwrf "cwj qtk{ g"yj gkt"UEUD"qt"uj qwrf "eqphkto "I"ceegr v"yj g"WRKO cpf cvg" T gs wguv\ddot kgp"dcuku"d{"wukpi "Yi g"WRKO gej cpkuo +"vq"dmqem'yj gkt"P qp/T gukf gpv'Qtf kpct{"\ddot P T Q\dot + Ceeqwpvu"hqt" yi g"hwnl'Crr rhecvkqp"Co qwpv."cv"yj g"ko g"qh'yj g"uwdo kuukqp"qh"yj g"Crr rhecvkqp"Hqto 0'Rctvkekr cvkqp"qh'Grki kdrg"P T Ku"kp"yj g" Kuwg"yj cm'dg"uwdlgev'vq"yj g"HGO C"tgi wrcvkqpu0'P T Ku"crr n{kpi "kp"yj g"Kuwg"yj tqwi j "yj g"WRKO gej cpkuo "ctg"cf xkugf"vq" gps wktg"y kyj "yj g'tgrgxcpv'dcpm'yj gyj gt"yj gkt"dcpm'ceeqwpv'ku"WRKrkpngf"r tkqt"vq"o cmkpi "uwej "Crr rhecvkqp0'$

 $Grki \ kdng"P\ TKu"crrn (kpi\ "qp"c"tgrcvtkcvkqp"dcuku"ctg"cfxkugf\ "vq"wug"vj\ g"Crrnkecvkqp"Hqto\ "o\ gcpv'hqt"P\ qp/Tgukf\ gpwu"*dnwg"kp"eqnqwt+0'$

Grki kdng'P TKi'crrn(kpi "qp"pqp/tgrcvtkcvkqp"dcuku'ctg"cfxkugf"vq'vug'vjg'Crrnkecvkqp"Hqto 'hqt'tgukfgpvu'*yjkg'kp''eqnqwt+0''

Hqt'f gvcku'qh'lpxguvo gpv'd{ 'PTKı.'ugg''õ*Tgust keskqp u'dp'Hqt gki p'Qy pgt uj kr'qh'Kpf kcp'Ugewt kskguö* 'dgi kppkpi ''qp''r ci g''439'' qh''y ku'Ftchv'Rtqur gewul0Rct kekr cskqp''qh'grki kdrg'PTKı'uj cm'dg'uwdlgev'\q'PFKTwgu''

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CRRNIECVIQP'D['IPFICP'RWDNIE'IPENWFIPI 'GNN HONG'PTHJ'CRRN[IPI 'QP'PQP/TGRCVTICVIQP''

Crrnecvkqp"o wuv'dg"o cf g"qpn("kp"yi g"pco gu'qh"kpf kxkf wcn. "nko kxgf "eqo r cpkgu"qt "uvcwwqt { "eqtrqtcvkqpu" I"kpukwwkqpu"cpf" pqv'kp"yi g"pco gu'qh"o kpqtu"*qyi gt"yi cp"o kpqt"j cxkpi "xcnkf"f grqukxqt { "ceeqwpu"cu"r gt"f go qi tcrj ke"f gwknu"r tqxkf gf "d{ "yi g" f grqukxct { + "hqtgki p"pcvkqpcn."pqp/tgukf gpwu"*gzegr v'hqt" yi qug"crrn { kpi "qp"pqp/tgrcvkcvkqp+."vtw.nu."*wprguu" yi g"vtw.nv'ku" tgi kuytgf "wpf gt" yi g" Uqekgvkgu" Tgi kuvtcvkqp" Cev." 3: 82" qt" cp { "qyi gt"crrnecdrg" vtw.nv'rcy u"cpf "ku"cwyi qtk| gf "wpf gt" ku" eqpuxkwwkqp"vq" j qnf "uj ctgu"cpf "f gdgpwtgu"kp"c"eqo rcp { + "J kpf w"Wpf kxkf gf "Hco knkgu"*J WH±"rctvpgtuj kr "hkto u"qt" yi gkt" pqo kpggu0%p"cug"qh"J WHu. "crrnecvkqp"uj cm'dg"o cf g"d{ "yi g"Mctvc"qh'yi g"J WHU'

Grki kdrg"PTKi"crrn(kpi "qp"c"pqp/tgrcvtkcvkqp"dcuku"o c{"o cmg"rc{o gpwi"d{"kpy ctf "tgo kwcpeg"kp"hqtgki p"gzej cpi g"vj tqwi j "pqto cn'dcpmkpi "ej cppgnu"qt"d{"fgdkwu"q"PTG"l"HEPT"ceeqwpwu"cu"y gm"cu"PTQ"ceeqwpwu"0"

Cp"crrnlecpvlkp" i g"P gvRwdnle" Ecvgi qt { "ecppqv"o cng"cp"crrnlecvkqp" hqt "i cv"pwo dgt "qh"Gs wkx{ "Uj ctgu"gzeggf kpi "i g"pwo dgt" qh"Gs wkx{ "Uj ctgu"qlhgtgf "vq" i g"r wdnle0"

CRRNIE CVIQP'D['HRKcpf 'HIKi''

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Kp"ecug"qh"Crrnecvkqpu"o cf g"d{"HRKu."c"egtvkhkgf"eqr{"qh"yi g"egtvkhkecvg"qh"tgi kuntcvkqp"kunvgf"wpf gt"yi g"UGDKHRK Tgi wrcvkqpu'ku'tgs wktgf ''vq'dg''cwcej gf ''vq''yi g''Crrnecvkqp"Hqto .'hckhpi ''y j kej ''qwt'Eqorcp{''tgugtxgu''yi g'tki j v'vq'tglgev'cp{"Crrnecvkqp"y kej qwv'cuuki pkpi ''cp{'tgcuqp0HRKu'y j q'y kuj ''vq'rctvkekrcvg'kp''yi g''Kunvg''ctg''cfxkugf ''vq''wug''yi g''Crrnecvkqp''Hqto "hqt"Pqp/Tgukfgpvu'*dnwg''kp''eqnqwt+0'

Ko"ecug"yi g"vqvcni'j qnf kpi "qhi'cp"HRKlpetgcugu"dg{qpf "32' "qhi'yi g"vqvcni'r ckf /wr "Cs wkx{"Uj ctg"ecr kxcn"qp"c'hwm{"f knwgf "dcuku" qt"32' "qt"o qtg"qhi'yi g"r ckf /wr "xcnwg"qhi'cp{"ugtkgu"qhi'f gdgpwxtgu"qt"r tghgtgpeg"uj ctgu"qt"uj ctg"y cttcpwi"knuwgf "yi cv'o c{"dg" knuwgf "d{"qwt"Eqo r cp{."yi g"vqvcni'kpxguvo gpv"o cf g"d{"yi g"HRK'y kni'dg"tg/encunkhkgf "cu"HF K'uwdlgev"vq"yi g"eqpf kkqpu"cu" ur gekhkgf "d{"UGDKcpf "yi g"TDKlp"yi ku'tgi ctf "cpf "qwt"Eqo r cp{"cpf" yi g"kpxguvqt"y kni'dg"tgs wktgf "vq"eqo r n{"y kyi "cr r nlecdng" tgr qtvkpi "tgs wktgo gpvn0"

Cu"ur gekhkgf "kp"668664"*d±k±"cpf "668664"*e±kx±"qh"yi g"I gpgtcn"Kphqto cvkqp"F qewo gpv."kv"ku"j gtgd{"emtkhgf "yi cv"dkf u" tgegkxgf "htqo "HRKu"dgctkpi "yi g"uco g"RCP "uj cm"dg"vtgcygf "cu"o wnkr ng"Dkf u"cpf "ctg"ncdng"vq"dg"tglgevgf."gzegr v"hqt" Cr r necvkqpu" htqo "HRKu"yi cv" wkrkţ g" yi g" o wnkr ng" kpxguvo gpv"o cpci gt" uvtwewtg" kp" ceeqtf cpeg" y kyj " yi g" Qr gtcvkqpcn" I wkf grlpgu"hqt "Hqtgki p"Rqt vhqhq "Kpxguvqtu"cpf "F guki pcvgf "F gr qukxqt {"Rct vkekr cpwi"kuwyf "vq"hcektxcvg"ko r ngo gpvcvkqp"qh" UGDKHRKT gi wrcvkqpu"%60 KO "Uvtwewtgö+"r tqxkf gf "uwej "Cr r necvkqpu"j cxg"dggp"o cf g'y kyj "f khtgtgpv'dgpghkekct {"ceeqwpv" pwo dgtu."Enkgpv"kF u"cpf "F R"kF u0Ceeqtf kpi n{. "kv"uj qwrf "dg"pqvgf "yi cv"o wnkr ng"Cr r necvkqpu"tgegkxgf "htqo "HRKu"y j q"f q" pqv'wkrkţ g"yi g"O KO "Uvtwewtg."cpf "dgct"yi g"uco g"RCP."ctg"hcdng"vq"dg"tglgevgf 0'Kp"qtf gt "vq"gpuwtg"xcnkf "Cr r necvkqpu."HRKu" o cnkpi "o wnkr ng"Cr r necvkqpu"wukpi "yi g"uco g"RCP."ctpf "y kyj "f kthgtgpv'dgpghkekct {"ceeqwpv"pwo dgtu."Enkgpv"kF u"cpf "F R" kF u."ctg"tgs wktgf "vq"r tqxkf g"c"eqphkto cvkqp"cnpi "y kyj "gcej "qh"yi gkt"Cr r necvkqp"Hqto u"yi cv"yi g"tgngxcpv"HRKu"o cnkpi "o wnkr ng"Cr r necvkqpu"wkrkţ g"yi g"O KO "Uvtwewtg"cpf "kpf kecvg"yi g"pco g"qh"yi gkt"tgur gevkxg"kpxguvo gpv"o cpci gtu"kp"uwej "eqphkto cvkqp0"Kp"yi g"cdugpeg"qh"uwej "eqphkto cvkqp"htqo "yi g"tgngxcpv"HRKu."uwej "o wnkr ng"Cr r necvkqpu"ctg"nkcdng"vq"dg" tglgevgf 0"

Hwt j gt. "lip" j g'hqmqy kpi "ecugu." j g'Cr r necvkqpu'd {"HRKi" j km'pqv'dg" eqpukf gtgf "cu" o wmkr ng'Cr r necvkqpu
lipxqnxkpi "" "j g" O KO "Uttwewtg" cpf "kpf kecvkpi " j g" pco g" qh' j gkt "tgur gevkxg" kpxguvo gpv'o cpci gtu' kp" uwej "eqphkto cvkqp="qhhuj qtg" f gtkxcvkxg" kputtwo gpvu" * δ QF Ko+" y j kej " j cxg" qdvckpgf " ugr ctcvg" HRK' tgi kmtcvkqp" hqt" QF K' cpf " r tqr tkgvct { " f gtkxcvkxg" kpxguvo gpvu="uwd" hwpf u'qt "ugr ctcvg" ercuu" qh'kpxguvqtu" y kj "ugi tgi cvgf "r qtvhqnkq" y j q"qdvckp" ugr ctcvg" HRK'tgi kmtcvkqp=""

HRK'tgi kıntcıkqpu"i tcpvgf "cv"kpxguvo gpv'untcvgi {"ngxgn'I'uwd"hwpf "ngxgn'y j gtg"c"eqnngevkxg"kpxguvo gpv'uej go g"qt"hwpf "j cu" o wnkr ng"kpxguvo gpv'utcvgi kgu"I"uwd/hwpf u"y kj "kf gpvkhcdng"f khtgtgpegu"cpf "o cpci gf "d{"c"ukpi ng"kpxguvo gpv'o cpci gt="o wnkr ng"dtcpej gu"kp"f khtgtgpv'lwtkuf kevkqpu"qh"hqtgki p"dcpm'tgi knygtgf "cu"HRKı="I qxgtpo gpv'cpf "I qxgtpo gpv'tgncygf" kpxguvqtu"tgi knygtgf "cu"Ecvgi qt{"3"HRKı="cpf"Gpvkkgu"tgi knygtgf "cu"Eqnngevkxg"kpxguvo gpv'Uej go g"j cxkpi "o wnkr ng"uj ctg" encuugu0"

Y kij "ghhgev'htqo "y g"Cr tkri3."4242."y g"ci i tgi cvg"rho ki'uj cmi'dg"y g"ugevqtcni'ecr u"cr r necdrg"vq"y g"Kof kcp"eqo r cp{"cu" r tguetkdgf "kp"y g"HGO C"Twrgu'y kij 'tgur gev'vq 'kwi'r ckf /wr "gs wkv{"ecr kcni'qp"c'hwm{ "f knwgf "dcuku0'Y j krg"y g"ci i tgi cvg'rho ki' cui'r tqxkf gf "cdqxg'eqwrf" j cxg'dggp"f getgcugf "d{"y g"eqpegtpgf "Kof kcp"eqo r cpkgu'vq"c'nqy gt "y tguj qrf 'rho ki'qh'46' "qt"96' "cu"f ggo gf "hkv."y kij "y g"cr r tqxcn'qh"ku"dqctf "qh'f ktgevqtu"cpf "kwu'uj ctgj qrf gtu"y tqwi j "c"tguqnwkqp"cpf "c"ur gekcn"



 $tguqnwkqp."tgur\ gevkxgn("dgkqtg"O\ ctej\ "53."4242."qwt"Eqo\ r\ cp\{"j\ cu"pqv"f\ getgcugf\ "uwej\ "kho\ kk"cpf\ "ceeqtf\ kpi\ n("vj\ g"cr\ r\ nkecdng"), which is the sum of the sum of$ nko kv'y kij "tgur gev'vq"qwt "Eqo r cp { 'ku'322' 0'

HRKi"ctg"r gto kwgf "va"r ctykekr cvg"kp"vj g"Kiuwg"uwdlgev"vq"eqo r nkcpeg"y ky "eqpf kskqpu"cpf "tguvtkevkqpu"y j kej "o c{"dg"ur gekhkgf" d{"yj g"I qxgtpo gpv'htqo "vko g"vq"vko g0"

Uwdlgev'\q"eqornkepeg"y ky "cm'errnkeedng"Kpf kep"ney u."twngu."tgi wneklqpu."i wkf gnkpgu"epf "errt qxeni'kp" \gto u"qh'Tgi wneklqp" 43qh"yj g"UGDKHRKTgi wrcvkqpu."cp"HRK"o c{"kuuwg."uwduetkdg"vq"qt"qyj gty kug"f gcn"kp"qhhuj qtg"f gtkxcvkxg"kpuvtwo gpvu"*cu" f ghkpgf "wpf gt" y j g"UGDKHRKT gi wrc kqpu" cu" cp { "kpurt wo gpv." d { "y j c vgxgt "pco g" ecngf . "y j kej "ku" kuuwgf "qxgt ugcu" d { "c"HRK ci ckpuv'ugewtkkgu'j grf ''d{ ''kv'kp''Kpf kc. "cu'lku'wpf gtn{ kpi +"f ktgevn{ "qt "kpf ktgevn{ ."qpn{ "kp" y g "gxgpv'*k+"uwej "qhhuj qtg"f gtkxc vkxg" kpurtwo gpvu"ctg"knuwgf "qpn("d{"r gtuqpu"tgi knygtgf"cu"Ecvgi qt{"KHRKu="*kk+"uwej "qhhuj qtg"f gtkxcvkxg"kpurtwo gpvu"ctg"knuwgf" qpn{"vq"rgtuqpu"gnkikdng"hqt"tgikuntcvkqp"cu"Ecvgiqt{"KHRKi="*kkke"uwej"qhhujqtg"fgtkxcvkxg"kpuntwogpvu"ctg"kuuwgf"chwgt" eqo r n'cpeg'y kij "-inpqy "{qwt 'enlgpvø'pqto u="cpf "*kx+'uwej "qvj gt "eqpf kklqpu"cu"o c{ "dg"ur gekhlgf "d{ "UGDKItqo "\ko g"\q '\ko g0"

Cp'HRKkuuwkpi 'qhhuj qtg'f gtkxcvkxg'kpuvtwo gpvu'ku'cnuq'tgs wktgf 'vq'gpuwtg'vj cv'cp{ '\tcpuhgt'qh'qhhuj qtg'f gtkxcvkxg'kpuvtwo gpvu' kuwgf "d{ "qt "qp "ku"dgj crh "ku"ecttkgf "qw"uwdlgev"\q "kpvgt "crkc "yj g"hqmqy kpi "eqpf kkqpu<"

uwej "qhhuj qtg"f gtkxcvkxg"kpuntwo gpvu"ctg"vtcpuhgttgf "qpn["vq"r gtuqpu"kp"ceeqtf cpeg"y ksj "Tgi wrcvkqp"44*3+"qh"vj g"UGDKHRK" Tgi wrcwkqpu="cpf"

rtkqt"eqpugpv'qh'vj g'HRKku'qdvckpgf 'hqt'uwej '\tcpuhgt."gzegrv'y j gp'\j g'r gtuqpu'\q'y j qo 'vj g'qhhuj qtg'f gtkxcvkxg'kpuvtwo gpvu" ctg"\q"dg"\tcpuhgttgf"\q"ctg"rtg/crrtqxgf "d{"\j g"HRKO"

Rct vkekr cvkqp"qh"HRKi"kp"yj g"Kuuwg"uj cm'dg"uwdlgev'\q"yj g"HGO C"T wrgu"

CRRNÆCVKQP'D['UGDKTGI KUVGTGF'CNVGTPCVKXG'KPXGUVOGPV'HWPF'*CKH+,'XGPVWTG'ECRKVCN' HWPFU*XEH+'CPF'HOTGM P'XGPVWTG'ECRWCN'HPXGUVOTU*HXEK''

Vj g"UGDKXEHTgi wrcvkqpu." Vj g"UGDKHXEKTgi wrcvkqpu" cpf "vj g"UGDKCKHTgi wrcvkqpu" kpvgt/cnkc" r tguetkdg" vj g"kpxguvo gpv" tgurtkevkqpu"qp"vjg"XEHu."HXEKi"cpf"CKHu"tgi kuvgtgf"y kvj"UGDK/Hwtvjgt."vjg"UGDK/CKH"Tgi wrcvkqpu"rtguetkdg."co qpi" qyi gtu. ''yi g''l
pxguvo gpv''t guvt levlqpu''qp''C \mbox{KH}_{10}

Vj g"j qrf kpi "d{"cp{"kpf kxkf wcrl'XEH'qt"HXEKtgi kuvgtgf"y kjj "UGDKkp"qpg"xgpwtg"ecr kxcrl'wpf gt vcmkpi "uj qwrf "pqv"gzeggf" 47' "qhi'yi g'eqtr wu'qhi'yi g''XEH'qt''HXEKO'Hwtyi gt. "XEHu'cpf 'HXEKi'ecp'kpxguv'qpn('wr 'vq'55055' "qhi'yi g'kpxguvkdrg'hwpf u'd { " y c { "qh'uwduet kr vkqp" \q"cp" kpkskcn'r wdnke "qhhgt kpi 0"

Vj g"ecvgi qt { "KCCK-lu"ecppqv"kpxguv"o qtg"vj cp"47' "qh"vj gkt "kpxguvkdrg"hwpf u"kp"qpg"kpxguvgg"eqo r cp { 0°C "ecvgi qt { "KKC" CKH'ecppqv'lpxguv'o qtg''yi cp''32' "qh''yi gkt'lpxguvkdrg'hwpf u'lp''qpg'lpxguvgg''eqo r cp{0C''xgpwxtg''ecr kcrilhwpf 'tgi kuvgtgf ''cu''c'' $ecvgi\ qt\{''KCKH''cu''f\ ghlpgf\ ''kp''j\ g''UGDKCKH'Tgi\ wrcvlqpu.''ecppqv'kpxguv'o\ qtg''j\ cp''3\ 15tf\ ''qh''j\ gkt''kpxguvkdrg''hwpf\ u''d\{''y\ c\{''qh''\ prediction of the prediction of$ uwduetkr vkqp"vq"cp"kpkkcn"r wdnke"qhhgtkpi "qh"c"xgpwtg"ecr kscn"vpf gtvcmkpi 0'Cff kkkqpcm(."vj g"XEHu"y j kej "j cxg"pqv"tg/ tgi knygtgf "cu'cp'CKH"vpf gt"\j g'UGDKCKHTgi wrc\kqpu"\ij cmleqp\kpvg"\q"dg"tgi wrc\ygf "d{"\j g"XEHTgi wrc\kqp"\vp\kn\yj g"gzkn\kpi " hwpf "qt "uej go g"o cpci gf "d{ "'yj g'hwpf "ku''y qwpf "wr "cpf "uwej "hwpf u'uj cm'pqv'hcwpej "cpf "pgy "uej go g"chwgt "yj g"pqvkhlecvkqp "qh" yj g'UGDKCKHTgi wrcvkqpu0'

Rct wkelr cwlap "qh'C kHu. "XE Hu"cpf "HXE ki'y cu'uwdl gev'vq'yj g"HGO C "Twrgu"

Cm'pqp/tgukf gpv'kpxguvqtu''uj qwrf "pqvg" vj cv'tghwpf u. "f kxkf gpf u"cpf "qvj gt "f kvxtkdwkqpu. "kh'cp{. "y km'dg"r c{cdng"kp"kpf kcp" Twr ggu'qpn('cpf 'pgv'qh'Dcpm'ej cti gu'cpf 'eqo o kuukqp0'

Qwt"Eqorcp{"qt"yjg"Ngcf"Ocpcigt"ykm"pqv'dg"tgurqpukdrg"hqt"rquu."kh"cp{."kpewttgf"d{"yjg"Crrrkecpv'qp"ceeqwpv'qh" eqpxgtukqp'qh'hqtgki p'ewttgpe{0'

Vj gtg"ku"pq"tgugtxcvkqp"hqt"Grki kdrg"P TKu."HRKi"cpf "HXEKi"cpf "cml"Crrnkecpvu"y kmldg"vtgcvgf "qp"vj g"uco g"dcuku"y ksj "qvj gt" ecvgi qtkgu'hqt''y g'r wtr qug''qh''cmqecvkqp0'

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Kp"ecug"qh"crrnkecvkqpu"o cfg"d{"nko ksgf"nkcdkrks{"rctvpgtuj kru"tgi kusgtgf"vpfgt"yjg"Nko ksgf"Nkcdkrks{"Rctvpgtuj kr"Cev."422: ." c"egt \khkgf "eqr { "qh"egt \khkecvg"qh"t gi kuntc\kqp"kunwgf "wpf gt"\j g"Nko kxgf "Nkcdktk\{ "Rct \vpgt uj kr "Cev."422: ."o wuv'dg"cwcej gf "\q" vjg"Crrnkecvkqp"Hqto 0'Hoknkpi "yjkej."Vjg"Eqorcp{"kp"eqpuwnxcvkqp"ykyj"Vjg"NO."tgugtxgu"Vjg"tkijv"Vq"tglgev"cp{"crrnkecvkqp." y ky qw'cuuki pkpi 'cp{ 'tgcuqp''y gtgqh0'



CRRNÆCVKOPUDI 'KPUWT CPEG'EQO RCPKGU''

Kp'ecug'qh'Crrnkecvkqpu'o cf g'd{ 'kpuwtcpeg'eqorcpkgu'tgi kugtgf 'y knj '\ij g'KTFC.'c'egt\khkgf 'eqr { 'qh'egt\khkecvg'qh'tgi kuvtcvkqp'' kunwgf "d{ "KTFC"o wuv'dg "cwcej gf "vq"yj g'Crrntecvkqp"Hqto 0Hckrkpi "vj ku "qwt "Eqorcp{ "kp"eqpuwncvkqp"y kyj "vj g"Ngcf "O cpci gt" tgugtxgu''y g'tki j v''q'tglgev'cp{'Crrnkecvkqp''y ksj qwv'cuuki pkpi "cp{'tgcuqp''y gtgqh0'

Vj g"gzr quwtg"pqto u"hqt"kpuwtgtu"r tguetkdgf "kp"Tgi wrcwlqp"; "qh"vj g"Kpuwtcpeg"Tgi wrcvqt{"cpf "F gxgrqr o gpv'Cwvj qtkx{"qh" Kpfkc"*Kpxguvo gpv+"Tgi wrcvkqpu."4238"*õKTFCKKpxguvo gpv'Tgi wrcvkqpuö+"ctg"ugv'hqtyj "dgrqy <"

- Gs wkx{ "uj ctgu"qh"c"eqo r cp{<"y g"ny gt"qh"32' ""3+"qh"y g"kpxguvgg"eqo r cp{øu"qwuvcpf kpi "gs wkx{ "uj ctgu"*hceg"xcnvg+"qt" c+32' "qh"vj g"t gur gevkxg"hwpf "kp"ecug"qh"c"nkhg"kpuwtgt "qt"32' "qh"kpxguvo gpv"cuugwu"kp"ecug"qh"c"i gpgtcn"kpuwtgt "qt"c" tgkpuwtgt="
- Vj g"gpvktg"i tqwr "qhi'yj g"kpxguvgg"eqo r cp{<"pqv'o qtg"yj cp"37' "qhi'yj g"tgur gevkxg"hwpf "kp"ecug"qhi'c "nkhg"kpuwtgt"qt"37' " d+ $qh'' lpxguvo gpv'' cuugvu'' lp''' ecug'' qh''c''i gpgtcn'' lpuwtgt'' qt'''c''t glepuwtgt'' qt''' 37' \quad ''qh''y g'' lpxguvo gpv'' cuugvu'' lp''' cm'' eqo r cpl gu''' lpxguvo gpv'' cuugvu'' lp''' cm'' eqo r cpl gu''' lpxguvo gpv'' cuugvu'' lp''' cm'' eqo r cpl gu''' lpxguvo gpv'' cuugvu'' lp''' cm'' eqo r cpl gu''' lpxguvo gpv'' cuugvu'' lp''' cm'' eqo r cpl gu''' lpxguvo gpv'' cuugvu'' lp''' cm'' eqo r cpl gu''' lpxguvo gpv'' cuugvu'' lp''' cm'' eqo r cpl gu''' lpxguvo gpv'' cuugvu'' lp''' cm'' eqo r cpl gu''' lpxguvo gpv'' cuugvu'' lp''' cm'' eqo r cpl gu''' lpxguvo gpv'' cuugvu'' lp''' lpxguvo gpv'' lp$ dgmpi kpi "\q"\j g"i tqwr."y j kej gxgt "ku"my gt="cpf"
- $Vj \; g' l p f \; wunt \{ \; l' uge vqt' l p' y \; j \; kej \; l' y \; g' l p x g u v g l' eqo \; r \; cp \{ \; l' q \; g t c v g u l' p q l' o \; q t g' l' j \; cp' 37' \; \; l' q l' y \; g' t g u r \; g e v l x g' l' n w f \; l' q l' c' l' l l g' l' q u v t g t' l' g' l' g u v g e v l' x g' l' n w f l' q l' c' l' l l g' l' q l' c' l' l' g' l' g u v g l' g l' g u v g u v g l' g u v g u v g l' g u v g$ e+ qt"c"tgkpuwtgt"qt"j gcnj "kpuwtgt"qt"i gpgtcn'kpuwtcpeg"qt"37' "qh'\j g'kpxguvo gpv'cuugvu."y j kej gxgt 'ku'nqy gt0'

Vj g"o czko wo "gzr quwtg"tko kv. "kp" vj g"ecug"qh"cp" kpxguvo gpv kp" gs wkx{ "uj ctgu. "ecppqv"gzeggf "vj g"nqy gt "qh"cp" co qwpv"qh" 32' " qh'iy g'lipxguvo gpv'cuuguu'qh'c'hlig'lipuwtgt''qt'i gpgtcn'lipuwtgt''cpf 'iy g''co qwpv'ecnewncygf 'wpf gt'r qlipvu''*kk.'''*kke''qt'''klike''cdqxg.''cu' yj g'ecug'o c{ 'dg0'

, "Vj g"cdqxg"tho k/'qti32' "tij cntiwcpf "twduktwxgf" cu"37' "qti'qwwcpf kpi "gs wkyf" tij ct gu"floeg"xcnwg+tqt "kpuwt cpeg"eqo r cpkgu" y ky "kpxguo gpv'cuugu"qh" "4.722.222"o knkqp"qt"o qt g"cpf "34" "qh'qwuucpf kpi "gs wky "ty ct gu"\reg"xcnwg+'hqt "kpuwt gt u'y kj " kpxguxo gpv'cuugwi'qh' '722.222'o knkqp'qt'o qtg'dwv'nguu'\j cp'' '4.722.222'o knkqp0'

Kpuwtgt "eqor cpkgu"r ct klekr ckhpi "kp" kj ku"Khuwg" uj cm" eqor n("y kj "cm" crr nkecdng" tgi wnckqpu. "i wkf gnkpgu" cpf "ektewnctu" knuwgf" d{"yj g"KTFC"htqo "vko g"vq"vko g"kpenxfkpi "yj g"Kpuxtcpeg"Tgi wrcvqt{"cpf "F gxgrqr o gpv'Cwj qtkx{"*Kpxguvo gpv+" Tgi wrcvkqpu."4238"∜õKTFC"Kpxguvo gpv'Tgi wrcvkqpuö+0'

CRRNIECVIOP'D['RTQXIFGPV'HWPFU'I'RGPUIQP'HWPFU'

Kp"ecug"qh"crrnkecvkqpu"o cfg"d{"rtqxkfgpv"hwpfu"I'rgpukqp"hwpfu."uvdlgev'vq"crrnkecdng"ncyu."y kxj "o kpko wo "eqtrwu"qh" "47" Etqtgu. "c"egt \khlgf"eqr { "qh"egt \khlecvg"htqo "c"ej ctvgtgf "ceeqwpvcpv'egt \kh\{ kpi "\j g"eqtr wu"qh"\j g"rtqxkf gpv'hwpf "I"r gpulqp"hwpf " o wuv'dg"cwcej gf "vq"vj g"Crrnkecvkqp"Hqto 0'Hcknkpi "vj ku "vj g"Eqorcp{"tgugtxgu"vj g"tki j v'vq"tglgev'cp{"crrnkecvkqp."y kvj qwv" cuuki pkpi "cp{"tgcuqp"yj gtgqh0"

CRRNÆCVKQPUD['DCPMIPI 'EQORCPKGU''

Kp'ecug'qh'Crrnkecvkqpu'o cfg'd{'dcpmkpi 'eqorcpkgu'tgi kuvgtgf'y knj "TDK'egtvkhkgf'eqrkgu'qh\™k+'nj g'egtvkhkecvg'qh'tgi kuvtcvkqp" kuuwgf "d{"TDK"cpf" "*kk+"'y g"crrtqxcn'qh'uwej "dcpmkpi "eqorcp{øu'kpxguvo gpv'eqoo kwgg"ctg''tgs wktgf "vq"dg"cwcej gf "vq"y g" Crrnlecvkqp"Hqto."hckhlpi "y j kej "qwt"Eqorcp{"kp"eqpuwncvkqp"y kaj "vj g"NO."tgugtxg"vj g"tki j v'vq"tglgev'cp{"Crrnlecvkqp" y ky qwłcuuki pkpi "cp{"tgcuqp0""

Vj g"kpxguvo gpv'iko kv'hqt "dcpnikpi "eqo r cpkgu"kp"pqp/hkpcpekcn'lugtxkegu"eqo r cpkgu"cu'r gt "vj g"Dcpnikpi "Tgi wrcvkqp"Cev."3; 6; ." cu"co gpf gf "*\$Dcpmkpi "Tgi wxvkqp"Cev\$+."cpf "vj g"Tgugtxg"Dcpm'qh' kpf kc"*\$Hlpcpekcn' Ugtxkegu"r tqxkf gf "d{"Dcpms\$+" $Fktgevkqpu." 4238." cu" co gpf gf" ku" 32' "qh" vj g" rckf/vr" uj ctg" ecr kcn" qh" vj g" kpxguvgg" eqo rcp{"pqv' dgkpi" ku" su" ctg" ecr kcn" ec$ uwdukf kct { *kgu+gpi ci gf "kp"pqp/hkpcpekcn'ugtxkegu"qt "32' "qh"vj g"dcpmu"qy p"r ckf /wr "uj ctg"ecr kscn'cpf "tgugtxgu."y j kej gxgt "ku"

J qy gxgt."c"dcpmkpi "eqo r cp{"y qwrf "dg"r gto kwgf "vq"kpxguv"kp"gzeguu"qh"32' "dww"pqv"gzeggf kpi "52' "qh"vj g"r ckf /wr "vj ctg" ecr kcn'qh'uwej 'kpxguvgg'eqo r cp{ 'kh'''

- 30 yj g'kpxguvgg'eqo r cp{ 'ku'gpi ci gf 'kp'pqp/hkpcpekcn'cevkxkkkgu'r gto kvgf 'hqt'dcpmu'kp'vgto u'qh'Ugevkqp'8*3+'qh'yj g'Dcpmkpi " Tgi wrcwkqp'Cev."qt""
- 40 yi g"cff kklaponices wkukklap"ku"yi tawi j "tgurtwewtkpi "qhif gdv"Teqtr qtovg"f gdv'tgurtwewtkpi "Turtovgi ke"f gdv'tgurtwewtkpi "qt" vq"rtqvgev"vjg"dcpmu":#pvgtguv"qp"hqcpu"Thpxguvogpvu"ocfg"vq"c"eqorcp{0""



Vj g"dcpmlku"tgs wktgf "vq"uwdo kv"c" wo g"dqwpf "cewlqp"r ncp" hqt "f kur qucn"qh"uwej "uj ctgu"y kvj kp"c" ur gekhkgf "r gtkqf "vq" TDKVC" dcpmlpi 'eqo r cp{ 'y qwrf 'tgs wltg''c'r tlqt''crr tqxcn'qh'TDK'\q'o cng'''

30 kpxguvo gpv'kp''gzeguu''qh''52' ''qh''y g'r ckf/wr ''uj ctg''ecr kxcn'qh'y g'kpxguvgg''eqo r cp{.'''

40 kpxguvo gpv'kp"c"uwdukf kct { *kgu+"cpf "c"hkpcpekcn"ugt xkegu"eqo r cp { "vj cv"ku"pqv"c"uwdukf kct { *kgu+"*y ksj "egt vckp"gzegr vkqp" $r\,tguetkdgf\,+\!."cpf\,'"'$

50 kpxguvo gpv'kp''c'pqp/hkpcpekcn'ugtxkegu'eqorcp{"kp"gzeguu'qh'32' "qh'uwej "kpxguvgg"eqorcp{@i'r ckf/wr "uj ctg"ecr kscn'cu" $uvc y f "lp" 7 "c + "x + "e + "k + "qh" y g "T gugt x g "Dcpm" qh" K p f lc" "H pcpelcn" Ugt x kegu" r t q x k f g f "d { "Dcpm + "F k t ge kqp u "4238." c u " t q x k f g f "d { "Dcpm + "F k t ge kqp u "4238." c u " t q x k f g f "d { "Dcpm + "F k t ge kqp u "4238." c u " t q x k f g f "d { "Dcpm + "F k t ge kqp u "4238." c u " t q x k f g f "d { "Dcpm + "F k t ge kqp u "4238." c u " t q x k f g f "d { "Dcpm + "F k t ge kqp u "4238." c u " t q x k f g f "d { "Dcpm + "F k t ge kqp u "4238." c u " t q x k f g f "d { "Dcpm + "F k t ge kqp u "4238." c u " t q x k f g f "d { "Dcpm + "F k t ge kqp u "4238." c u " t q x k f g f "d { "Dcpm + "F k t ge kqp u "4238." c u " t q x k f g f "d { "Dcpm + "F k t ge kqp u "4238." c u " t q x k f g f "d { "Dcpm + "F k t ge kqp u "4238." c u " t q x k f g f "d { "Dcpm + "F k t ge kqp u "4238." c u " t q x k f g f "d { "Dcpm + "F k t ge kqp u "4238." c u " t q x k f g f u q f q f g f u q f g f u q f g f u q f g f u q f g f u q f g f u q f g f u q f g f u q f g f u q f g f u q f g f u q f g f u q f g f u q f g f u q f$ $co gpf gf 0'Hwtyi gt."vj g"ci i tgi cvg"kpxguvo gpv'd \{"c"dcpmkpi "eqo r cp \{"kp"uwdukf kct \{*kgu+"cpf "qvj gt"gpvkkgu"gpi ci gf "kp"uwdukf kct \{*kgu+"cpf "qvj gt"gpvkkgu"gpi ci gf "kp"uwdukf kct (*kgu+"cpf "qvj gt"gpvkkgu"gpi ci gf "kp"gpi ci gf"gpvkkgu"gpi ci gf "kp"uwdukf kct (*kgu+"cpf "qvj gt"gpvkkgu"gpi ci gf "kp"gpi ci gf"gpvkkgu"gpi ci gf "kp"gpi ci gf"gpvkgu"gpi ci gf"gpvkgu"gpi ci gf "kp"gpi ci gf"gpvkgu"gpi ci gf"gpvkgu"gpi ci gf"gpvkgu"gpi ci gf"gpvkgu"gpi ci gf"gpvkg$ hkpcpekcn'cpf "pqp/hkpcpekcn'ugtxkegu'eqo r cp{"ecppqv'gzeggf"42' "qh'vj g"kpxguvgg"eqo r cp{øu'r ckf/wr "uj ctg"ecr kxcn'cpf" tgugtxgu0'

CRRNIE CVIQP 'D['U UVGO IE CNN['IO RQTVCP V'P QP/DCP MIP I 'HIP CPE ICN'E QO RCP IGU'

Kp"ecug"qh"Crrnkecvkqpu"ocfg"d{"u{uvgokecm("korqtvcpv"pqp/dcpmkpi"hkpcpekcn"eqorcpkgu"tgikungtgf"yknj"TDK"c"egtvkhkgf" eqr {"qh"yj g"egt \hhecvg"qh"tgi kutcvlqp"kuuwgf "d{"yj g"TDK"c"egt \hhgf "eqr {"qh"ku"ncuv"cwf kgf "hhpcpekcn"uvcvgo gpvu"qp"c" uvcpf crqpg"dcuku"cpf "c"pgv'y qtyj "egtvkhlecvgu"ltqo "kuu"uvcwvqt{"cwf kqt*u+"cpf "uwej "qvj gt"crrtqxcn'cu"o c{"dg"tgs wktgf "d{" $\label{thm:conditional} yig "U \{uvgo kecm ("Korqtvcpv" PDHE u"o wuv" dg" cwcej gf "vq" yig "Crrnlecvkqp" Hqto 0 Hcknlpi "yiku." qwt "Eqorcp { "kp" eqpuwncvkqp" length with the conditional width of the conditional length with the conditional length with$ y kj "yj g"NO ."tgugtxgu"yj g"tki j v"vq"tglgev"cp{"Crrnlecvkqp."y kj qwv"cuuki pkpi "cp{"tgcuqp"yj gtgqh0"U{uvgo kecm("Korqtvcpv" Pqp/Dcpmkpi "Hkpcpekcn'Eqorcpkgu'rctkkekrckkpi "kp" vjg"Knuwg" ujcm'eqorn ("ykyj" cm'crrnkecdng" tgiwnckkqpu. "iwkfgnkpgu" cpf" ektewrctu'kuuwgf ''d{ ''TDKhtqo ''vko g''vq''vko g0'

CRRNÆCVKOPUD['UEUDU'

UEUDu'r ctvkekr cvkpi "kp"kj g"Kunwg"ctg"tgs wktgf "kq"eqorn{"y kxj" y g"vgtou"qh"kj g"UGDK'ektewnctu"f cvgf "Ugr vgodgt"35."4234"cpf" Icpwct {"4."4235"kuwgf "d{"UGDKO'Uwej "UEUDu"ctg"tgs wktgf "vq"gpuwtg"vj cv"hqt"o cmlpi "crrnlecvkqpu"qp"vj gkt"qy p"ceeqwpv" wukpi 'CUDC.''yj g{ 'uj qwrf 'j cxg'c'ugr ctcvg'ceeqwpv'kp''yj gkt''qy p''pco g''y kyj "cp{ "qyj gt''UGDKtgi kuvgtgf "UEUDu0Hwtyj gt.''uwej " ceeqwpv'uj cm'dg"wugf "uqrgn("hqt "vj g"r wtr qug"qh'o cmlpi "cr r rlecvlqp"lp"r wdrle "kuuwgu"cpf "engct "f go ctecvgf "hwpf u'uj qwrf "dg" cxckrcdrg'kp'uwej 'ceeqwpv'hqt'uwej 'crr nkecvkqpu0'

Vj g'kphqto cvkqp'tgv'qw'cdqxg'kı'i kxgp'hqt'\j g'dgpghk'\qht\j g'Crrnecpw0Qwt'Eqo rcp{'cpf '\j g'NO 'ctg'pqv'hcdrg'' hqt 'cp{ 'co gpf o gpw'qt 'b qf lthecvkqp'qt 'ej cpi gw'q'crrnecdng'hcy w'qt 't gi wncvkqpu.'y j lej 'b c{ 'qeewt 'chwgt 'vj g'f cwg'' qh'vj ku'Ftch/Rtqurgevwu0Crrnecpwi'ctg'cfxkugf 'vq'o cng'vj gkt 'kpf grgpf gpv'kpxguski cvkqpu'cpf 'gpusstg'vj cv'cp{ 'ukpi rg'' crriecvkąp'li go 'tj go 'f ggu'pqv'gzeggf 'tj g'erriecdig'kpxguso gpv'iko ksu'qt'o czko wo 'pwo dgt'qh'tj g'Gs wks ('Uj etgu' vj cv'ecp'dg'j grf 'd{ 'vj go 'wpf gt'crrnecdng'ncy 'qt't gi wncwlqpu'qt'cu'urgekhlgf'hp'vj ku'Ftchv'Rtqurgewwi'cpf'vj g'' Rt qur gevwu0'

CRRNIECVKOP'WPFGT'ROY GT'OH'CVVOTPGI "

Kp"ecug"qhl'Crrnkeckqpu"ocfg"rwtuwcpv'vq"c"rqygt"qhl'cwqtpg{"d{"thokogf"eqorcpkgu."eqtrqtcvg"dqfkgu."tgikuvgtgf"uqekgvkgu." grki kdrg'HRKi. 'CKHı. 'O wwcriHwpf u. 'kpuwtcpeg'eqo r cpkgu. 'kpuwtcpeg'hwpf u'ugv'wr 'd{ ''yj g''cto { . 'pcx{ ''qt ''ckt ''hqteg'qh'yj g''Wpkqp'' qh"Kpf kc."kpuwtcpeg"hwpf u"ugv"wr "d{" "y g"F gr ctvo gpv"qh"Rquvu."Kpf kc"qt" "y g"P cvkqpcn"Kpxguvo gpv"Hwpf "cpf "r tqxkf gpv"hwpf u" y ky "c"o kpko wo "eqtr wu"qh" "472"o kmlqp" "wwdlgev"\q"crr rlecdig"ncy u+"cpf "r gpulqp" hwpf u"y ky "c"o kpko wo "eqtr wu"qh" "472" o kntqp"%wdlgev"vq"crrnkecdng"ncy u+:"c"egt \ktkgf"eqr { "qh"vj g"r qy gt "qh"cwqtpg { "qt"vj g"tgngxcpv"tguqnwkqp"qt"cwyj qtkx{ ."cu"vj g" ecug"o c{"dg,"cmpi "y kij "c"egt.vkhkgf"eqr{"qh"yj g"o go qtcpf wo "qh"cuuqekcvkqp"cpf "ct.vkengu"qh"cuuqekcvkqp"cpf "T'qt"d{g"ncy u. "cu" crrnecdig."o ww'dg"mf i gf "cmpi "y kj "y g"Crrnecdiqp"Hqto 0'Hchlpi "y kı."qwt"Eqorcp{"kp"eqpuwncdqp"y kj "y g"NO." tgugtxgu'iy g'tki j v''q'ceegr v'qt'tglgev'cp { 'Crrnlecvkqp'lp'y j qng'qt'lp'rctv.'lp'gksj gt'ecug.'y ksj qwv'cuuki plspi 'cp { 'tgcuqp''y gtgqh')' Qwt"Eqorcp{"lp"eqpuwncvlqp"y ky "'y g"NO."lp"y gtt"cduqnwg"f luetgylqp."tgugtxgu''y g"tki j v'vq"tgrcz"yj g"cdqxg"eqpf kklqp"qh" $uko \ wncpgqwu''nqf \ i \ kpi \ "qh''y \ g'r \ qy \ gt \ "qh''cwqtpg \{ \ "cmpi \ "y \ kj \ "y \ g'Crrnkecvlqp" \ Hqto . "uwdlgev'vq" uwej \ "vgto u''cpf \ "eqpf kklqpu''y \ cv'' \ necvlqp" \ Hqto . \ "uwdlgev'vq" uwej \ "vgto u''cpf \ "eqpf kklqpu''y \ cv'' \ necvlqp" \ Hqto . \ "uwdlgev'vq" uwej \ "vgto u''cpf \ "eqpf kklqpu''y \ cv'' \ necvlqp" \ Hqto . \ "uwdlgev'vq'' uwej \ "vgto u''cpf \ "eqpf kklqpu''y \ cv'' \ necvlqp" \ Hqto . \ "uwdlgev'vq'' uwej \ "vgto u''cpf \ "eqpf kklqpu''y \ cv'' \ necvlqp" \ Hqto . \ "uwdlgev'vq'' uwej \ "vgto u''cpf \ "eqpf kklqpu''y \ cv'' \ necvlqp" \ Hqto . \ "uwdlgev'vq'' uwej \ "vgto u''cpf \ "eqpf kklqpu''y \ cv'' \ necvlqp" \ Hqto . \ "uwdlgev'vq'' uwej \ "vgto u''cpf \ "eqpf kklqpu''y \ cv'' \ necvlqp" \ Hqto . \ "uwdlgev'vq'' uwej \ "vgto u''cpf \ "eqpf kklqpu''y \ cv'' \ necvlqp" \ Hqto . \ "uwdlgev'vq'' uwej \ "vgto u''cpf \ "eqpf kklqpu''y \ necvlqp" \ Hqto . \ "uwdlgev'vq'' uwej \ "vgto u''cpf \ "eqpf kklqpu''y \ necvlqp" \ necvlqp" \ Hqto . \ "uwdlgev'vq'' uwej \ "vgto u''cpf \ "eqpf kklqpu''y \ necvlqp" \ necvl$ qwt 'Eqo r cp{ 'kp'eqpuwnc\kqp'y ky ''y g'NO .''o c{ ''f ggo ''hk θ '

Vj g'ċdqxg'lphqto cwlqp'lui' lxgp'lqt 'tj g'dgpghla'qhltj g'Crrnlecpwt/Qwt 'Eqo rcp{ 'cpf 'tj g'Ngcf 'O cpci gt 'ctg'pqv'flcdng'' hqt 'cp{ 'co gpf o gpw'qt 'b qf ltlecvkqp'qt 'ej cpi gw'b'crrnecdug'icy w'qt 't gi wuckqpu'y j lej 'b c{ 'qeewt 'chygt 'vj g'f cvg'' qh'yj ku'Ftchv'RtqurgewuuUCrrnecpwu'ctg'cfxkugf'\q'ocng'yj gkt'kpfgrgpfgpv'kpxguwki cwkqpu'cpf'gpuwtg'cp{'bkpi gy' Crrdecvkqp'lt qoʻti goʻf qguʻþqv'gzeggfʻti gʻcrrdecdigʻlpxguvo gpv'iko ku'qt'o czko woʻpwo dgt'qliti gʻGs wks{'Uj ctgu' vj cv'ecp'dg'j grf 'd{ 'vj go 'vpf gt 'crrnecdig'rcy 'qt 't gi wurvlqp'qt 'cu'ur geltligf 'lip'vj lu'F t ch/Rt qur gevwu'qt 'vj g'Rt qur gevwu'

Kp"ceeqtf cpeg"y kij "TDKtgi wrcvkqpu. "QEDu"ecppqv'r ctvkekr cvg"kp"yj g"Kurwg0"



IP FIE CVKYG'RT QE GUU'HNQY 'HQT'CRRNIE CVKQP U'IP 'RWDNIE 'KUWG''

CUDC'RTQEGUU'

Ko"ceeqtf cpeg"y kj "vj g"UGDK'ektewrt "pq0'EKT IEHF IRQNKE [EGNN13314237"f cvgf "Pqxgo dgt "32."4237"cmlvj g" Crrdecpw'j cxg'vq'eqo rwuqtk('crrd 'vj tqwi j 'vj g'CUDC'RtqegudQwt'Eqo rcp{ 'cpf 'vj g'Ngcf 'O cpci gt 'ctg'pqv' rkcdrg'hqt 'cp{ 'co gpf o gpvu'b qf kkecvkqpu'qt 'ej cpi gu'kp'crrkecdrg'hcy u'qt 't gi wrxkqpu'y j kej 'b c{ 'qeewt 'chygt 'vj g'' f cyg'qhl'yj g'Rt qur gevwu0CUDC'Cr r n'ecpwa'ct g'cf xlugf ''wq'b cng'yj glt 'lpf grgpf gpy'lpxgulli cylqpu'cpf ''wq'gpullt g'yj cy'' vj g'CUDC'Crrnecvkqp'Hqto 'kı'eqttgev('hkngf 'wr.'cu'f guetklgf 'kp'vj kı'igevkqp0'

Nkwu"qh"dcpmu"yj cv"j cxg"dggp"pqvkhlgf "d{ "UGDK'vq"cev"cu"UEUD"*Ugrh"Egrvkhlgf "U{ pf kecvg"Dcpmu+"hqt"yj g"CUDC "Rtqeguu"ctg" rtqxkf gf "qp"y y y (tigdkf) qx(bp0'Hqt"f gvckru"qp"f guki pcvgf "dtcpej gu"qh"UEUD"eqmgevkpi "vj g"Crrnkecvkqp"Hqto ."r ngcug"tghgt" yj g'dgnqy 'o gpvkqpgf 'UGDK'nkpn0'

j wrudly y y Ougdkû qxOp lugdky gd lqvj gt IQvj gt CevlqpOf qAf qTgeqi pkugf Hrk? {gu(kpvo kf?57" j wru⊲lly y y 0ugdk0 qx0op lugdky gd lqvj gt lQvj gt Cevkqp0f qAf qTgeqi pkugf Hrk? { gu(kpvo Kf?56"

C"Tgukf gpv"Tgvckri'Kpf kxkf wcni'Kpxguvqt"uj cmi'uwdo kv"j ku"Crrnkecvkqp"vj tqwi j "cp"Crrnkecvkqp"Hqto ."gkvj gt"kp"rj {ukecni'qt" grgevtqple"o qf g. "\q"\j g"UEUD'y kij "y j qo "\j g"dcpm'ceeqwpv'qh"\j g"CUDC"Crr nlecpv'qt"dcpm'ceeqwpv'wknkj gf "d{"\j g"CUDC" Crrnlecpyl*6CUDC 'Ceeqwpvö+'ku'o ckpvckpgf 0Vj g'UEUD'uj cmidmemicp'co qwpv'gs wcn'uq'yj g'Crrnlecykqp'Co qwpv'kp'yj g'dcpm' ceeqwpviur geldigf 'kp''y g'CUDC'Cr r nlecvkqp'Hqto .'r j {ulecn'qt 'grgevtqple.'qp''y g'dcuku'qh'cp''cwj qtk cvkqp''q''y ku'ghhgevi kxgp'' d{"vj g"ceeqwpv"j qrf gt"cv"vj g"vko g"qh"uwdo kwkpi "vj g"Crrrkecvkqp0"

Vj g'Crr rhecktop 'Co qwpv'uj cm'tgo clp''drqengf 'kp''yj g''chqtguclf 'CUDC''Ceeqwpv'wpvkrihlpcnkl cvkqp ''qh''yj g''Dcului'qh''Cmqvo gpv'' kp" y g"Kuwg"cpf "eqpugs wgpv" vcpuhgt "qh" y g"Crr nec vkqp" Co qwpv" ci ckpuv" y g"cmqec vgf "ui ctgu" vq" y g"CUDC "Rwd nhe" Kuwg" Ceeqwpv."qt"wpvkri'y ky f tcy cnlhckrwtg"qh''y g"Kuwg"qt"wpvkri'y ky f tcy cnltglgevkqp"qh''y g"CUDC"Cr r nlecvkqp."cu"y g"ecug"o c{" dg0'

Vj g"CUDC"f cvc"uj cm'yj gtgchygt"dg"wr mcf gf "d{"yj g"UEUD"lp"yj g"grgevtqple"IRQ"u{urgo "qh'yj g"Uqem'Gzej cpi g0'Qpeg"yj g" Deuku'qh'Cmqvo gpv'ku'hkperk gf. "vj g"Tgi kuxtet"vq"vj g"Kuwg"uj em'ugpf "ep"er r tqr tkevg'tgs wguv'vq"vj g"Eqpvtqmkpi "Dtepej "qh'vj g" UEUD"hqt"wpdmemlpi "vj g"tgrgxcpv'dcpm'ceeqwpvu"cpf "hqt"vtcpuhgttlpi "vj g"co qwpv'cmqecdrg"vq"vj g"uweeguuhwrl'CUDC" Crrnlecpu"vq"yi g"CUDC"Rwdnle"Kuwg"Ceeqwpv0'Kp"ecug"qh"yi kji f tcy cnllbckwtg"qh"yi g"Kuwg."yi g"dmengf "co qwpv"uj cm'dg" wpdmengf "qp"tgegkr v'qh'uwej "kphqto cwqp"htqo "vj g"Ngcf "O cpci gt0"

CUDC "Crrnkecpvu"ctg"tgs wktgf "vq"uwdo kv"yj gkt "Crrnkecvkqpu. "gkvj gt "kp"rj {ukecn'qt "grgevtqpke"o qf g0"fp"ecug"qh"crrnkecvkqp"kp" rj {ulecn'o qf g. "vj g"CUDC"Crrnlecpv'uj cm'uwdo kv'yj g"CUDC"Crrnlecvkqp"Hqto "cv'vj g"F guki pcvgf "Dtcpej "qh'vj g"UEUD"qt" Tgi knytgf "Dtqnytu"qt "Tgi knytgf "TVC) u"qt "FRu"tgi knytgf "y knj "UGDKOK "ecug"qh"cr r necvkqp "kp"gnyevtqpke "hqto . "vi g"CUDC" Crrnlecpy'uj cm'uwdo ki'vj g''Crrnlecylqp''Hqto "gkij gt''vj tqwi j "vj g''kpygtpgy'dcpmkpi 'hcekrks("cxckredng"y kij "vj g''UEUD. "qt''uwej ' qvj gt "grgevtqpkecm{ "gpcdrgf" o gej cpkno "hqt"crrn{kpi "cpf" drqenkpi "hwpfu"kp"vj g"CUDC" ceeqwpv"j grf" y kyj "UEUD." cpf" ceeqtf kpi n('tgi kuvgtkpi 'tuwej 'Crrnkecvkqpu0'

EJ CPPGNUQH'UWDO KUKQP'QH'CRRNKE CVKQP'HQTO U''

Htqo "Lwn("3."423; "kp"Rj cug"KK"T Kku'uj cm'wug"qpn("Ej cppgn'KK'Ej cppgn'KK'cpf "Ej cppgn'KX'"*cu'f guetkdgf "dgrqy +'hqt"o cmkpi " cr r nlecvkqpu'kp'c'r wdnke'kuuwg<

Ecvgi qt { "qh" Koxguvqt"	Ej cppgd 'K '	Ej cppgd 'KK'	Ej cppgn' KK	Ej cppgd'KX"
Tgvckn' Kpf kxkf wcn'	Kpxguvqt"oc{"uwdokv"	Kpxguvqt"oc{"uwdokv"	Pqv'Crrnlecdng''	TKKu"oc{"uwdokv"
Kpxguvqt'**TKK+"	yjg'Crrnkecvkqp'Hqto"	yjg'Crrnkecvkqp'Hqto"		yig" Crrnkecvkqp"
	y ký " CUDC" cu" ý g"	qpnkpg" wukpi" yig"		Hqto "y kyj "cp{"qh"
	uqng" o gej cpkuo "hqt"	hcekrkv{" qh" nkpmgf"		yj g'F guki pcvgf "
	ocmkpi" rc{ogpv"	qprkpg"tcfkpi."fgocv"		Kpvgto gf kctkgu'cpf "
	gkvjgt"rj{ukecm{"*cv"	cpf "dcpm'ceeqwpv"*5/		wug'j kulj gt''WRKKF''
	yj g" dtcpej " qh' yj g"	kp/3" v{rg" ceeqwpwu+"		hqt"yj g"r wtr qug"qh"
	UEUD+'qt'qpnkpg0'	rtqxkfgf" d{"		drqemkpi "qh"hwpf u"
P qp/'Kpurkwwkqpcn'	"	Tgi kuvgtgf 'Dtqmgtu0'	Kpxguvqt"oc{"uwdokv"	Pqv'Crrnlecdng"
Kpxguvqt'**PKK+"	"		yjg'Crrnkecvkqp"Hqto"	
kpenwf kpi 'S workhkgf"	Hqt"uwej "crrnkecvkqpu"		ykyj" cp{" qh" yjg"	
Kpurkwakqpen'Dw{ gt"	yj g" gzkuvkpi "rtqeguu"		F guki pcvgf "	
*S KD+"	qh" wrnqcfkpi" yig"		Kpvgto gf kctkgu."cmpi "	
	Crrnkecvkqp" cpf"		y kyj 'f gvcknu'qh'j kulj gt"	
	drqenkpi "qh"hkpf u"kp"		CUDC'Ceeqwpv'hqt"	



y g"TKu" ceeqwp	''d{" dqenlipi "qh'hwpf u0'
yg" UEUD" yo	
eqpvkpwg0'	Hqt 'uwej 'cr r necvkqpu'
	yj g'F guki pcvgf "
	Kpvgto gfkct{'ykm'
	wr mcf 'vj g"
	Crrnlecvkqp'lp'\jg"
	uvqemˈgzej cpi g"
	dkffkpi "r nevhqto "cpf"
	hqty ctf 'vj g''
	crrnkecvkqp"hqto" \q"
	F guki pcvgf 'Dtcpej 'qh'
	у́ g"eqpegtpgf "UEUD"
	hqt "drqemlpi "qh'hwpf u"

Wrqp"tgegkrv'qh'y jg"Crrnkecvkqp"Hqto."uwdo kwgf"y jgyjgt"kp"rj {ukecn'qt"gngevtqpke"oqfg."yjg"Fgukipcvgf"Dtcpej"qh'yjg"UEUD'ujcm'xgtkh('kh'uwhhkekgpv'hwpfu'gs wcn'vq'yjg'Crrnkecvkqp'Coqwpv'ctg'cxckncdng'kp'yjg'CUDC'Ceeqwpv."cu'ogpvkqpgf'kp" yjg'Crrnkecvkqp"Hqto."rtkqt'vq'wrnqcfkpi 'uwej'Crrnkecvkqpu'y kyj"yjg'Uvqem'Gzejcpig0'

Kliwhhkelgpvhwpf u'ctg'hqv'cxckrcdrg'kp''tj g'CUDC'Ceeqwpv.''tj g'F guki pcvgf 'Dtcpej 'qh''tj g'UEUD''tij cm'tglgev'twej 'Crrnkecvkqpu'' cpf 'uj cm'pqv'wrmcf 'twej 'Crrnkecvkqpu''y kij ''tj g'Uvqem'Gzej cpi g0'

Kt'uwhhelgpv'hwpf u''ctg''cxckrcdng''kp''yi g''CUDC''Ceeqwpv.''yi g''UEUD''uj cm''dnqem''cp''co qwpv''gs wkxcngpv''vq''yi g''Crrnlecvkqp'' Co qwpv'o gpvkqpgf 'kp'yi g''Crrnlecvkqp''Hqto ''cpf 'y km'gpvgt''gcej ''Crrnlecvkqp''kpvq''yi g''gngevtqpke''dkffkpi ''u{uygo ''cu''c'ugrctcvg'' Crrnlecvkqp''cpf ''i gpgtcvg''c''VTU'hqt''gcej ''rtkeg''cpf ''f go cpf ''qrvkqp0'Vj g''VTU'uj cm'dg'hwtpkuj gf ''vq''yi g''CUDC''Crrnlecpv''qp'' tgs wguv0''

Vj g'Crrnkeckqp'Co qwpv'uj cm'tgo ckp''dmengf 'kp''yj g''chqtguckf 'CUDC'Ceeqwpv'wpvkrihkpcnkuckqp''qh''yj g''Dcuku'qh'Cmqvo gpv' cpf 'eqpugs wgpv'\tcpuhgt''qh'yj g''Crrnkeckqp''Co qwpv''ci ckpuv'yj g''Cmqwgf 'Gs wkx{ 'Uj ctgu''vq''yj g''Rwdnke''Kuwg'Ceeqwpv.''qt''wpvkri' y kyj f tcy cnltglgevkqp''qh''yj g''Crrnkeckqp''Hqto .''cu''yj g''ecug''o c{ 'dg0''

Qpeg"yi g"Dcuku"qh"Cmqvo gpv"ku"hkpcnk gf ."vj g"Tgi kuxtct"vq"yi g"Kuwg"uj cmlugpf "cp"crrtqrtkcvg"tgs wguv"vq"yi g"UEUD"hqt" wpdmqenkpi "vj g'tgrgxcpv'CUDC"Ceeqwpwl'cpf 'hqt"tcpuhgttkpi "vj g'co qwpv'cmqecdrg"vq'vj g'uweeguuhwrlCrrnkecpwl'q'vj g'Rwdrke" Kuwg"Ceeqwpv'l'Kp"ecug"qh"y kyi f tcy cnhckuxtg"qh"yi g"Qhhgt."vj g"dmqengf "co qwpv'uj cm'dg"wpdmqengf "qp"tgegkrv'qh"uwej " kphqto cvkqp"htqo "vj g'Tgi kuxtct"vq'vj g'Qhhgt0"

RTQEGUU'HNQY "HQT"CRRNÆCVKQPU'KP"RWDNÆ"KUWG"UWDOKVVGF"D["TGVCKN"KPFKXKFWCN"KPXGUVQT"

 $\label{thm:condition} \begin{tabular}{l} $K_p'' = K_p'' = K_$

Vj g'f gvckrgf 'r tqeguu'kp''vj ku'tgi ctf 'ku'cu'f gvckrgf 'j gtgwpf gt<'

Crrnecvkqp'cpf 'xcnkf cvkqp'rt qeguu''

*c+0'uwdokuukqp"qh" yig"crrnkecvkqp" y kaj "yig" kpvgtogfkct{."vjg"TKK yqwnf" dg" tgswktgf" vq" jcxg" l"etgcvg" c"WRK" KF." y kaj "c" oczkowo" ngpivj" qh' 67" ejctcevgtu" kpenwfkpi" yig" jcpfng" *Czcorng<" Kpxguvqt KFBdcpmpcog+0"

*d+0TKKy knihknihp'ij g'Crrnkecvkqp'f gvckni'kp'ij g'crrnkecvkqp'hqto 'cnqpi 'y kıj 'j kul'j gt'dcpm'ceeqwpv'hkpngf 'WRKKF 'cpf 'uwdo kı' yi g'crrnkecvkqp'y kıj 'cp $\{$ 'qh'ij g'kpvgto gf kct $\{0'$

*e+0"Vjg"kpvgtogfkct{"wrqp"tgegkrv"qh"hqto"ykm"wrnqcf"vjg"Crrnkecvkqp"fgvcknu"cnqpi"ykvj"WRKKF"kp"vjg"uvqem"gzejcpig" dkffkpi"rncvhqto0"

*f+0/Qpeg"vjg"Crrnkecvkqp"jcu"dggp"gpvgtgf"kp"vjg"dkffkpi"rncvhqto."vjg"gzejcpig"vkm"vpfgtvcmg"xcnkfcvkqp"qh"vjg"RCP"cpf" Fgocv"Ceeqwpv"fgvcknu"qh"TKKykyj"vjg"fgrqukvqt{0'

*g+0'F gr qukqt{"y km'xcnkf cvg"vj g"chqtguckf "Crrnkecvkqp"f gvcknu"qp"c"tgcn'vko g"dcuku"cpf "ugpf "tgur qpug"vq"uvqem'gzej cpi g" y j kej "y qwnf "dg"uj ctgf "d{"uvqem'gzej cpi g"y kej "kpvgto gf kct{"vj tqwi j "kku'r ncvhqto ."hqt"eqttgevkqpu."kh'cp{0'

-



*thOUO U'trqo "gzej cpi g''q'TKK'nqt"crrn(kpi <'Qpeg''y g'Crrnkeckqp"f gvcknu"ctg''wrnqcf gf "qp"'y g''uvqem'gzej cpi g''r ncknqto ."'y g'' uvqem'gzej cpi g''u cm''ugpf "cp"UO U''q"'y g''TKK'tgi ctf kpi "uwdo kuukqp"qh"j ku"T"j gt "crrnkeckqp."f ckn("cv''y g"gpf "qh''f c{"dcuku." f wtkpi "dkf f kpi "r gtkqf 0'Hqt''y g''ncuv'f c{"qh''crrn(kpi ."'y g''UO U'o c{"dg''ugpv'qww'y g''pgzv'y qtmkpi "f c{0'

Vj g'DrqeniRt qeguu''

*c+0'Rquv'wpf gtvcmlpi "xcnlf cvlqp"y kj "f gr qulxqt { ."vj g"uvqem'gzej cpi g"y km "qp"c"eqpvlpvqvu"dculxu."grgevtqplecm{"uj ctg"vj g" Crrnlecvlqp"f gvcknu"cmpi "y kj "TKKu"WRKKF ."y kj "vj g"Ur qpuqt"Dcpm'crrqlpvgf "d{"vj g"knuwgt0"

*d+0Vj g'Ur qpuqt'Dcpniy knikpkkcvg'c'o cpf cvg'tgs wguv'qp'ij g'TKKQ0tgs wguv'ij g'TKKQc'cwj qtk g'dmenkpi 'qh'hwpf u'gs wkxcrgpv' vq"cr r necvkqp"co qwpv'cpf "Uwdugs wgpv'f gdkv'qh'hwpf u'lp'ecug"qh'cmqvo gpv0'Hqt"cmi'r gpf kpi "WRKO cpf cvg"Tgs wguvu."vj g" Ur qpuqt'Dcpniy knikpkkcvg'tgs wguvu'hqt'dmenkpi 'qh'hwpf u'lp'bj g'CUDC'Ceeqwpvu'qh'tggxcpv'kpxguvqtu'y kji "c'eqphkto cvkqp" ewvqhh'vko g'qhi'34-22"r o "qp"vj g'hktuv'Y qtnkpi "F c{"chygt"vj g'Dkf IKuwg"Emylopi "F cvg"*6Ewv/Qhh'Vko gö+0'Ceeqtf kpi nf. "T KKu" wukpi "vj g"WRKO gej cpkuo "pggf" vq"ceegr v'WRKO cpf cvg'Tgs wguvu'hqt'dmqenkpi "qhh'hwpf u'r tkqt "vq"vj g"Ewv/Qhh'Vko g'cpf "cm' r gpf kpi "WRKO cpf cvg'Tgs wguvu'chygt"vj g'Ewv/Qhh'Vko g'y knihrr ug0'

*e+0Vj g"tgs wguv'tckugf "d{" 'y g"Ur qpuqt "Dcpm" y qwrf "dg" 'grgevtqpkecm{ "tgegkxgf "d{" 'y g"T KKcu"c" UO U"I 'kpvko cvkqp" qp" j ku" I' j gt" o qdkrg" pq0'I'O qdkrg" cr r . "cuuqekcvgf "y ky "WRKKF" 'rkpngf "dcpm'ceeqwpv0'

*f +0Vj g'TKKy qwf 'dg'cdrg'\q'xkgy ''j g'co qwpv\q'dg'drqengf 'cu'r gt'j ku'l'j gt'Crrrhec\kqp'kp'twej 'kp\ko c\kqp0Vj g'TKKy qwf '' cniq'dg''cdrg'\q'xkgy ''cp''cwcej o gpv\'y j gtgkp'\j g''KQ''Crrrhec\kqp''f gvcknu''uwdo kwgf ''d{ ''TKKy kni'dg''xkukdrg0'Chxgt''tgxkgy kpi '' y g''f gvcknu''rtqr gtn{. ''TKKy qwf ''dg''tgx wktgf ''q''rtqeggf ''q''cwj qtk g''y g''o cpf cvg0'Uwej ''o cpf cvg''tckugf ''d{ ''ur qpuqt''dcpmi' y qwf ''dg''c'qpg\ko g''o cpf cvg''hqt''gcej ''crrrhec\kqp''kp'\j g''KQ0'

*g+0Wr qp'uweeguulmrixcnkf cvkqp''qhi'drqemitgs wguv'd { ''ij g'TKK'cu'cdqxg.''ij g'uckf 'lxphqto cvkqp''y qwrf ''dg''grgevtqpkecm('tgegkxgf ''d { ''ij g''TKK'ø'dcpm''y j gtg'' ij g''hwpf u.''gs wkxcrgpv''vq''cr r nkecvkqp''co qwpv.''y qwrf ''i gv''drqemgf ''lxp''TKK'i'ceeqwpv''y qwrf ''cnuq''dg''tgegkxgf ''d { ''ij g''TKK'o''}tgi ctf kpi ''eqphkto cvkqp''qh'uwej ''drqem'qh'hwpf u''kp''TKK'i'ceeqwpv''y qwrf ''cnuq''dg''tgegkxgf ''d { ''ij g''TKK'o''}

*h+0'Vj g'lkphqto cvkqp"eqpvckpkpi "uvcwu"qh'dmeni'tgs wguv'*g0 0'ó"ceegr vgf "I'f genkpg"I'r gpf kpi +'y qwf "cnuq"dg"uj ctgf "y kj "vg g" Ur qpuqt"Dcpm"y j kej "kp"wtp"y qwf "dg"uj ctgf "y kj "uvqeni'gzej cpi g0'Vj g"dmeni'tgs wguv'uvcwu'y qwf "cnuq"dg"f kur nc{gf "qp" uvqeni'gzej cpi g'r ncvlqto 'hqt kphqto cvkqp"qh'vj g'kpvgto gf kct{0'

*1 ±0'Vj g"kphqto cvkqp"tgegkxgf 'htqo "Ur qpuqt"Dcpm"y qwrf "dg"uj ctgf "d{ "uvqem'gzej cpi g'y kij "TVC"kp"vj g"hqto "qh'c"hkrg"hqt" vj g'r wtr qug"qh'tgeqpekrkcvkqp0'

*j +0 TKKu'y qwrf "eqpwlpwg"vq"j cxg"vj g"qr vkqp"vq"o qf kh{ "qt"y kej ftcy "vj g"Crrnkecvkqp"vkm'vj g"emuwtg"qh'vj g"Kuuwg"r gtkqf 0 Hqt" gcej "uwej "o qf khkecvkqp"qh"Crrnkecvkqp."TKKy km'uwdo kv'c"tgxkugf "Crrnkecvkqp"cpf "uj cm'tgegkxg"c"o cpf cvg"tgs wguv'htqo "urqpuqt"dcpm'vq"dg"xcnkf cvgf "cu'rgt"vj g"rtqeguu'kpf kecvgf "cdqxg0"

Rquv'erquwtg"qh'vj g"Qhhgt."vj g"uvqendgzej cpi g"y km'uj ctg"vj g"Cr r nlecvkqp"f gvcku"y ky "vj g"Tgi kuvtct"crqpi "y ky "vj g"hlpcn'hlkg" tgegkxgf "htqo "vj g"Ur qpuqt "Dcpm'eqpvckpkpi "uvcwu"qh'dmengf "hwpf u"qt "qvj gty kug."crqpi "y ky "vj g"CUDC"Ceeqwpv'f gvckru" y ky "tgur gev'vq"cr r nlecvkqpu'o cf g"d{"TKKu"wukpi "WRKKF 0"

J QY 'VQ'CRRN[A"

Ko"ceeqtf cpeg"y kj "ý g"UGDKektewrt"pq0'EKT IEHF IRQNKE[EGNN13314237"f cvgf "P qxgo dgt"32."4237"cm'ý g"Crrnłecpu" j cu" vq" eqorwnqtkn(" crrn(" y tqwi j " y g" CUDC" Rtqeguu0' Hwty gt." rwtuwcpv' vq" UGDK Ektewrt" Pq0' UGDKII Q IEHF IF KN4 IEKT IR423: 135: "f cvgf "P qxgo dgt"23."423: ."T gvckn'Kpf kxkf wcn'Kpxguvqtu"crrn(kpi "kp"rwdnke"Kuwy"o c{" wug"gkyj gt"Crrnłecvkqp"Uwrrqtvgf"d{"Dnqengf"Co qwpv'*CUDC+"hceknk/"nqt"o cnkpi "crrnłecvkqp"qt"cnnq"ecp"wug"WRK'cu"c" rc{o gpv'o gej cpkuo "y kyj 'Crrnłecvkqp"Uwrrqtvgf"d{"Dnqengf"Co qwpv'hqt"o cnkpi "crrnłecvkqp0'

O QF G'QH'RC[OGP V"

Wr qp"uwdo kuulqp"qh"cp"Cr r rlecvlqp"Hqto "y kj "'y g"UEUD."y j gyi gt "lp"r j {ulecn'qt "grgevtqple"o qf g. "gcej "CUDC"Cr r rlecvlqp uj cm'dg"f ggo gf "\q'j cxg"ci tggf "\q"dmem'y g"gp\ktg"Cr r rlecvlqp"Co qwpv"cpf "cwj qtkl gf "y g"F guki pcvgf "Dtcpej "qh'y g"UEUD" q"dmem'y g"Cr r rlecvlqp"Co qwpv"lp"y g"dcpm'ceeqwpv"o ckpvckpgf "y kj "y g"UEUD0"

Crrnlecpwi'o ww'ur gelkh "vj g"Dopmi'Ceeqwpv'pwo dgt."qt"vj g"WRKKF."cu'crrnlecdng."kp"vj g"Crrnlecvkqp"Hqto 0'Vj g"Crrnlecvkqp"Hqto 0'Vj g"Crrnlecvkqp"Hqto 0'Vj g"Crrnlecvkqp"Hqto 0'Vj g"Crrnlecvkqp"Hqto 0'Vj g"Crrnlecvkqp" df "ecuj."f go cpf "f tchv."ej gs wg. "o qpg "qtf gt."r quvcn'qtf gt "qt "cp {"o qf g"qh'rc {o gpv'qvj gt "vj cp"dmengf "co qwpw"kp"vj g"CUDC"Ceeqwpv."o c {"pqv'dg"ceegr vgf 0'Vj g"UEUD"qt"Ur qpuqt"Dopm"uj cmi'nggr "vj g"Crrnlecvkqp"Co qwpv'kp"vj g"tgngxcpv'dcpmi'ceeqwpv'dmengf "wpvkn'y kvj f tcy cnl"tglgevkqp"qh'vj g"crrnlecvkqp"qt"tgegkr v'qh'kpuvtwevkqpu'htqo "vj g"Tgi kuvtct"vq"wpdmeni'vj g"Crrnlecvkqp"Co qwpv0'

...



J qy gxgt."Pqp/Tgvckh"Crrnkecpvu"uj cm"pgkvj gt"y kvj ftcy "pqt"myy gt"vj g"ukl g"qh"vj gkt"crrnkecvkqpu"cv"cp{"uvci g0"Kp"vj g"gxgpv" qh'y kaj ftcy cn'qt'tglgevkqp"qh'yj g"Crrnkecvkqp"Hqto "qt"hqt"wpuweeguuhwn'Crrnkecvkqp"Hqto u."yj g"Tgi kuntct"vq"yj g"Kuuwg"uj cm' i kzg"kpuvt wevkqpu" 'q" 'y g"UEUDu" 'q" wpdrqem' y g"crrnecvkqp" o qpg{"kp" y g"tgrgxcpv'dcpm'ceeqwpv'y ky kp "qpg" fc{"qh" tgegkrv'qh" uwej "kpuntweskqp0"Vj g"Crrnecskqp"Co qwpv'uj cm'tgo ckp"dmengf "kp"vj g"CUDC"Ceeqwpv'wpskn'hkpcnkucskqp"qh'vj g"Dcuku"qh" Cmqvo gpvkp'yj g'Knuwg'cpf 'eqpugs wgpvktcpuhgt'qh'yj g'Crrnkecklqp'Co qwpvkq'yj g'Rwdnke'Knuwg'Ceeqwpv'qt'wpkn'y kyj f tcy cnl'' hckuxtg"qh"yi g"Kuuwg"qt "wpxkritglgevkqp"qh"yi g"crrrkecvkqp"d{ "yi g"CUDC"Crrrkecpv."cu"yi g"ecug"o c{"dg0"

Rrgcug'pqvg'vj cv.'kp'vgto u'qh'UGDKEktewrct'Pq0EKT1EHF1RQNKE[EGNN13314237'fcvgf'Pqxgodgt'32.'4237'cpf'vjg'UGDK *Kuwg"qh'Ecr kcn'cpf "F kuenquwtg"Tgs wktgo gpvu+"Tgi wrcvkqpu."423: ."cml'yj g"kpxguvqtu'*gzegr v'Cpej qt"Kpxguvqtu+"cr r n(kpi "kp" $c'r\ wdr le'' \textit{Kuuwg''uj}\ cm' wug'' qpn ('Crr r lec vlqp'' Uwr r\ qt vgf'' d \{''Drqengf'' Co\ qwpv''' CUDC + 'r tqeguu' l'qt'' crr r lec vlqp''r tqx lf lopi 'f gvc lnu'' l'qt'' crr r lec vlqp''r tqx lq lopi 'f gvc lnu'' l'qt'' l'qt''' l'qt'' l'qt'' l'qt'' l'qt'' l'qt'' l'qt'' l'qt'' l'qt'' l'qt'''$ qh'y g'dcpm'ceeqwpv'y j kej ''y km'dg'dmengf ''d{ ''y g''Ugrh'Egt khkgf ''U{ pf kecvg''Dcpmu'**UEUDu+''hqt ''y g''uco g0'Hwtyj gt.''r wtuwcpv'' vq"UGDKEktewrct"Pq0'UGDKI Q1EHF1FKN41EKT1R423: 135: "f cvgf"Pqxgodgt"23."423: "cpf"cm'tgrcvgf"ektewrctu"kuuwgf" yjgtgchgt."Tgvckn'Kpfkxkfwcn'Kpxguvqtu''crrn kpi "kp''rwdnke"Knuwg"oc{"wug"gkyjgt"Crrnkecvkqp"Uwrrqtygf"d{"Dnqengf"Coqwpv" *CUDC+"hoekrkx{"hqt"o cmkpi "crrnkecvkqp"qt"cnuq"ecp"wug"WRK'cu"c"rc{o gpv"o gej cpkuo "y kij "Crrnkecvkqp"Uvrrqtvgf"d{" Drqengf 'Co qwpv'hqt'o cmkpi 'cr r nkecvkqp0'

Qp''y g'F guki pcvgf 'F cvg.''y g'UEUDu'uj cm'tcpuhgt''y g'co qwpwi'cmqecdrg''q''y g'CUDC''Crrnkecpvu'htqo ''y g'tgur gevkxg'CUDC'' Ceeqwpv."lp"\gto u"qh"\j g"UGDKTgi wrc\lqpu."lpvq"\j g"CUDC"Rwdrle"Kuwg"Ceeqwpv0"Vj g"dcrcpeg"co qwpv."lh"cp{"ci clpuv"\j g" ucki "Crrnecvkqp"kp" ij g"CUDC "Ceeqwpuu" ij cmi'y gp"dg" wpdmengf "d{" 'y g"UEUDu"qp" ij g"dcuku"qh''y g"kpunt wevkqpu'knuwgf "kp" ij ku" tgi ctf 'd{ ''y g'Tgi kıxtct '\q'\y g'Kıuwg0'

Kp"ecug"qh"cr r necvkqpu"o cf g"d { "wukpi "cp { "qh"ej cppgnu"wpf gt "WRKRc { o gpwu"O gej cpkuo ."r quv"enquwt g"qh"yj g"Qhhgt ."vj g"uvqent" gzej cpi g"y km'uj ctg" y g"Crrnecvkqp" f gyckm" y kyj "y g"Tgi kuytct" cmpi "y kyj "y g"hkpcn'hkrg" tgegkxgf "htqo "y g"Ur qpuqt" Dcpm' eqpvclplpi "uvcwu"qh"dnqengf "hwpf u"qt "qyj gty lug. "cnppi "y kıj "yj g"CUDC "Ceeqwpvl"f gvckuu"y kıj "tgur gevl'vq"cr r nlecvlqpu"o cf g" d{'TKKu'wukpi 'WRKKF0'

Vjg"TVC." dcugf "qp" kphqto cwlqp" qh"Crrnkecwlqpu"cpf"dnqenkpi"tgegkxgf"htqo"uvqeni'gzejcpig."yqwrf"wpfgtvcng" $tgeqpe \textit{krlcvkqp"qh'vj} \ g''Crr \textit{rkecvkqpu''f} \ cvc''cpf \ ''drqem'eqph \textit{kto} \ cvkqp"eqtt gur qpf \textit{kpi} \ ''vq''vj \ g''Crr \textit{rkecvkqpu''d} \{ \ ''cm'' \textit{kpxguvqt''ecvgi} \ qt \{ \ ''cm'' \textit{kpxguvqt''ecvgi} \ qt \} \ ''cm'' \textit{kpxguvqt''ecvgi} \ qt \} \ ''vq''vj \ g''Crr \textit{rkecvkqpu''d} \{ \ ''cm'' \textit{kpxguvqt''ecvgi} \ qt \} \ ''cm'' \textit{kpxguvqt''ecvgi} \ ''cm'' \ ''cm'$ cr r n'ecvkqpu'*y kij "cpf 'y kij qwi'ij g''wug''qh''WRK4"cpf 'r tgr ctg''yj g''dcuku''qh''cmqvo gpv0'

Wr qp'crrtqxcn'qh'dcuku'qh'cmqvo gpv."TVC'y km'uj ctg''y g'f gdkv'hkrg'y kaj 'Ur qpuqt'dcpm'*y tqwi j 'Uvqem'gzej cpi g+'cpf 'UEUDu." cu'cr r necdng. 'hqt 'etgf kv'qh'hwpf u'kp''j g't wdne 'kuuwg''ceeqwpv'cpf 'wpdnqenkpi 'qh'gzeguu'hwpf u'kp''j g'T KKi'ceeqwpv'0Vj g'Ur qpuqt'' dcpm'dcugf "qp" y g"o cpf cvg" crrtqxgf "d{" y g"TKCv' y g" ko g"qh'dqenkpi "qh'hwpf u." y kn'tckug" y g"f gdky'' l'eqngev'tgs wguv'htqo " $T \textit{KK} \textit{'d} \textit{cpm'c} \textit{ceqwpv'v} \textit{j} \textit{ gtgwr} \textit{qp''v} \textit{j} \textit{ g'hwpf u''y km'dg''v} \textit{cpuhgttgf''htqo''} \textit{TKK} \textit{'ceeqwpv'vq''r wdrke''kuwg''ceeqwpv'cpf''tgo''ckpkpi''hwpf u'''} \textit{left} \textit{change''ceeqwpv'vq''r wdrke''kuwg''ceeqwpv'cpf''tgo''ckpkpi''hwpf u'''' \textit{left} \textit{$ kh'cp{."y km'dg'\wpdmengf 'y kj qw\'cp{"o cp\wcn'kp\ytxgp\kqp"d{ "TKKqt"j ki"I'j gt''dcpn0'

Wr qp"eqphkto cvkqp"qhi't gegkr v'qhi'hwpf u'kp"vj g'r wdrke kuuwg"ceeqwpv."uj ctgu'y qwrf "dg"etgf kxgf "vq"vj g'T KKxu'ceeqwpv0'T KKy kmi' $\label{thm:continuous} dg"pq\mbox{\sc who} f"\mbox{\sc h} f''\mbox{\sc h} f'$ o cpf cvg'y qwrf "dg"tgxqmgf "cpf "cr r necvkqp"co qwpv'y qwrf "dg"wpdmengf "hqt"vj g"T KKO"

WPDNQEMIPI 'QH'CUDC'CEEQWPV''

 $Qp"ij\ g"dcuku"qh"kpuntwenkqpu"ltqo\ "ij\ g"Tgi\ kuntct"vq"ij\ g"Kunwg."ij\ g"UEUDu"uj\ cm''ntcpuhgt"ij\ g"tgs\ wkukwg"co\ qwpv''ci\ ckpun''gcej\ "interval of the control of the contro$ uweeguuhwiCUDC "Crrnlecpv'\q"\j g"CUDC "Rwdnle"Kuwg"Ceeqwpv'cu'r gt "ugevlqp"62*5+"qh'\j g"Eqorcpkgu"Cev."4235"cpf "uj cm" wpdrqem'gzeguu'co qwpv.'kh'cp{'kp''yj g'CUDC''Ceeqwpv0'

Kp"ecug"qh"crrnkecvkqpu"ocfg"d{"wukpi "cp{"qh"ejcppgnu"wpfgt"WRKRc{ogpvu"Ogejcpkno."Tgikuvtct"vq"vjg"Kuuvg"ykn"vjctg" yj g'f gdk/hkrg'y kjj "Ur qpuqt"dcpml*vj tqwi j "Uvqemlgzej cpi g+"cpf "UEUDu. "cu"cr r nlecdrg. 'hqt "etgf k/'qhl'hwpf u'kp''vj g'r wdnle 'kuuwg" ceeqwpvl'cpf 'wpdrqemlpi ''qh'gzeguu'hwpf u'lp'\j g'TKKi'ceeqwpvl'Vj g''Ur qpuqt''dcpml'dcugf ''qp''\j g''o cpf cyg''crrtqxgf ''d{ ''\j g''TKK' cv'ij g''No g''qh''drqemkpi "qh'hwpf u.'y km'tckug''j g'f gdkv''l'eqmgev'tgs wguv'htqo 'TKKi''dcpm'ceeqwpv.''y j gtgwr qp''j g''hwpf u''y km'dg'' vtcpułgttgf "htqo "TKKi"ceeqwpv'\q"r wdrke "kuuwg"ceeqwpv'cpf "tgo clpkpi "hwpf u. "kh'cp{. "y km'dg 'wpdrqengf 'y kj qwv'cp{ "o cpwcri" kpvgtxgpvkqp"d{"TKKqt"j ku"l"j gt"dcpm0"

J qy gxgt."yj g'Crrnkecvkqp'Co qwpv'o c{"dg'wpdnqengf"kp"yj g'CUDC'Ceeqwpv'qt"Dcpm'Ceeqwpv'hpmkp"WRKO gej cpkuo "rtkqt" vq'tgegkr v'qh'kpvko cvkqp'htqo "vj g'Tgi kuxtct''vq''vj g'Kuwg'd{"vj g'Eqpvtqnrkpi "Dtcpej "qh'vj g''UEUD'tgi ctf kpi 'hkpcnk cvkqp''qh'vj g'' Dcuku"qh"Cmqvo gpv"kp"vj g"Kuwg."kp"vj g"gxgpv'qh"y ky f tcy cnllockwtg"qh"vj g"Kuwg"qt"tglgevkqp"qh"vj g"CUDC"Crrnlecvkqp"qt" Crrnlecvkqp"o cf g"vj tqwi j "WRKO gej cpkuo ."cu'vj g"ecug"o c{ "dg0"

O CZKO WO 'CPF'O KPKO WO 'CRRNKE CVKOP'UK G''

Vjg"crrnkecvkqpu"kp"vjku"Knuwg."dgkpi"c"hkzgf"rtkeg"knuwg."ykm'dg"ecvgiqtk|gf"kpvq"wq="



30 Hqt "Tgyckri Kpf kxkf wcri 'Crrrkecpuu"

Vi al'Canda alamba unalidalla tilaba unalidalida la la unalida la unalida la la la unalida la la la unalida la la la unalida la la la unalida l

Vj g'Crrnlecvkqp"o wuv'dg'hqt'c"o kpko wo "qhi"] _'Gs wkx{ "Uj ctgu'uq"cu'vq"gpuwtg"vj cv'vj g'Crrnlecvkqp"co qwpv'rc{cdng'd{"" yj g'Crrnlecpv'f qgu'pqv'gzeggf " 4.22.2220'

40Hqt'Qvjgt'Crrnkecpvu'™Pqp/Kpuvkwvkqpcn'Crnnkecpvu'cpf'SKOu-K''

Vj g'Crrnkeckqp'o wuv'dg'hqt'c'o kpko wo ''qh'] _'Gs wkw{ 'Uj ctgu'luq'cu'luq'gpuwtg'\j cv\'j g'Crrnkeckqp'Co qwpv\'gzeggf u'' 4.22.222'' cpf ''kp''o wnkrngu''qh'Gs wkw{ ''Uj ctgu'\j gtgchygt0'

C'r gtuqp''uj cni'pqv'o cng''cp''cr r necvlqp''lp''yj g''pgv''Kuwg''ecvgi qt { 'hqt''c''pwo dgt''qh''ur gekhkgt ''ugewtkkgu''yj cv'gzeggf u''yj g''vqvcn'' pwo dgt''qh''ugewtkkgu''qhhgtgf ''vq''yj g''r wdneOHwtyj gt.''yj g''o czko wo ''cr r necvkqp''d { ''pqp/kpunkwwkqpcn'hpxguvqtu''uj cni'pqv'gzeggf ''vqvn''pwo dgt''qh''ur gekhkgf ''ugewtkkgu''qhhgtgf ''kp''yj g''kuuwg''nguu''vqvcn''pwo dgt''qh''ur gekhkgf ''ugewtkkgu''qhhgtgf ''kp''yj g''kuuwg''nguu''vqvcn''pwo dgt''qh''ur gekhkgf ''ugewtkkgu''qhhgtgf ''kp''yj g''kuuwg''vq'' s wcnkhkgf ''kpunkwwkqpcn'dw{ gtuO'

Hwt yi gt." yi g"o czko wo "Crrnkecklap" d{"c"S KD"kpxgunqt" uj qwrf "pqv"gzeggf "yi g"kpxguno gpv"nko kuu"rtguetklagf "hqt" yi go "d{"crrnkecdrg" by u0Wpf gt "gzkunkpi "UGDKT gi wcvkqpu." c'S KD'Crrnkecpv'ecppqv'y kyi f tcy "kuu'Crrnkecvkqp" chngt "yi g"Kuuwg" Empukpi "F cvg" cpf "ku'tgs wktgf "vq'r c{"322' "S KD'O cti kp"wrqp" uwdo kuukqp" qh'Crrnkecvkqp0'

 $\label{thm:condition} \begin{tabular}{l} $\begin{tabular}{l} \b

QRVKQP'VQ'TGEGKXG'GS WKV['UJ CTGU'KP'FGO CVGTKCNK, GF'HQTO''

Kpxguvqtu'uj qwrf "pqvg'vj cv'Cmqvo gpv'qh'Gs wkx{ "Uj ctgu'vq''cm'uweeguuhwrl'Cr r nlecpvu'y km'qpn("dg'kp'vj g'f go cvgtkcnk| gf 'lnqto " kp''eqo r nlcpeg''qh'vj g'Eqo r cpkgu''Cev."42350'

Vj g'Gs wkx{ "Uj ctgu'qp"Cmqvo gpv'uj cm'dg'\tcf gf "qpn('kp''yj g'f go cvgtkcnk| gf ''ugi o gpv'qh''yj g'Uqem'Gzej cpi gu0'''

Crrnecpwi'y km'pqv'j cxg"vj g"qrvkqp"qh'i gwkpi "Cmqvo gpv'qh'vj g"Gs wkv{ "Uj ctgu'lkp"rj {ukecn'hqto 0'Cmqwggu'uj cm'j cxg"vj g" qrvkqp"vq'tg/o cvgtkcnk| g"vj g'Gs wkv{ "Uj ctgu. 'kh'vj g{ 'uq'f guktg. "cu'r gt 'vj g'r tqxkukqp"qh'vj g"Eqor cpkgu'Cev'cpf 'vj g'F grqukxqtkgu" Cev0'

IPHQTO CVKQP'HQT'VJ G'CRRNÆCPVU'

c0+"Vjg"Eqorcp{"ykmlhkng"yjg"Rtqurgewu"ykyj"yjg"TqE"cv"ngcuv"5"%jtgg+"yqtmkpi"fc{u"dghqtg"yjg"Knuwg"Qrgpkpi"Fcvg0"

 $e0 + Cp{ "kpxguvqt." dgkpi "grki kdırg" vq" kpxguv' kp" vj g"Gs wkv{ "Uj ctgu" qlhgtgf." vj q"y qwrf "hkng" vq" qdvckp" vj g"Rtqur gewwu" cpf I"qt" vj g" Crr nlecvkqp" Hqto "ecp" qdvckp" vj g"wco g"htqo "vj g"Eqo rcp{øu" Tgi kuvgtgf "Qlhkeg" qt" htqo "vj g"Tgi kuvgtgf "Qlhkeg" qh" vj g"Ngcf" O cpci gt0'$

 $f \ 0 \ ''Crrnlecpu''y j \ q''ctg''lpvgtguvgf ''lp''luwduetldlipi ''vq''y g''Gs wkw{ ''Uj ctgu''uj qwnf ''crrtqcej ''y g'Ngcf ''O cpci gt''qt''y gkt''cwyj qtkl gf'' ci gpv*'u+''vq''tgi kuvgt''y gkt''Crrnlecvkqpu0''$

g0+"Crrnkecvkqpu"o cfg"kp"\j g'pcog'qh'O kpqtu"cpf lqt"\j gkt"pqo kpggu"\uj cm'pqv'dg"ceegr \gf 0' "

PWO DGT'QH'CRRNÆ CVKQPU'RGT'DCPM'CEEQWPV''

Cp"lpxguvqt"o cnlpi "crrnlecvlqp"wulpi "cp{"qhl'ej cppgnu"wpf gt"WRKRc{o gpwl'O gej cpkwo."uj cml'wug"qpn("j ku"l"j gt"qy p"dcpml'ceeqwpv'lqt"qpn("j ku"l"j gt"qy p"dcpml'ceeqwpv'lqt"qpn("j ku"l"j gt"qy p"dcpml'ceeqwpv'lqt"wulpi "wRKKF" "q"o cng"cp"crrnlecvlqp"lp"r wdrke kuuwgu0Crrnlecvlqpu'o cf g"wulpi "y ktf"rctv("dcpml'ceeqwpv'qt"wulpi "y ktf"rctv("ldcpml'ceeqwpv'WRKKF"ctg"lkcdrg"lqt"tglgevlqp0Urqpuqt"Dcpmlij cmlrtqxlfg" y g"lpxguvqtu"WRKhlpngf"dcpml'ceeqwpv'f gvckur'vq"TVC"lqt"rwtrqug"qhltgeqpekkcvlqp0TVC"uj cmlwpfgtwcng"yej plecnltglgevlqp"qhl'cml'crrnlecvlqpu"vq"tglgev'crrnlecvlqpu"o cf g"wulpi "y ktf"rctv("dcpml'ceeqwpv0"

"



IPHQTO CVIQP'HQT'VJ G'CRRNIE CP VU'

Kp"cffkkqp"vq"yjg"kpuvtwevkqpu"rtqxkfgf"vq"yjg"Crrnlecpwu"kp"yjg"Igpgtcn"Kphqtocvkqp"Fqewogpv"hqt"Kpxguvkpi"kp"Rwdnle" Kuwgu."Crrnlecpwu"ctg"tgswguvgf "vq"pqvg"yjg"hqmqykpi"cffkkkqpcn"kphqtocvkqp"kp"tgncvkqp"vq"yjg"Kuwg0"

- c0 Vj g'Knuwg'Rgtkqf "uj cm'dg'hqt'c'o kpko wo "qh'vj tgg"Y qtmkpi "Fc{u'cpf "uj cm'pqv'gzeggf "vgp"y qtmkpi "fc{u0Vj g"Knuwg'Rgtkqf" o c{"dg"gzvgpf gf."kh'tgs wktgf."d{"cp"cff kkqpcn'vj tgg"y qtmkpi "fc{u."uwdlgev'vq"vj g"vqvcn'Knuwg'Rgtkqf "pqv'gzeggf kpi "vgp" y qtmkpi "fc{u"
- d0 Vj g"tgrgxcpv"F guki pcvgf "Køvgto gf kct {"y km"gpvgt"gcej "Crrnkecvkqp"kyvq" yj g"grgevtqpke"dkf f kpi "u{uvgo "cu"c"ugr ctcvg" Crrnkecvkqp"cpf "i gpgtcvg"cp"cempqy rgf i go gpv"uhr "%oCempqy rgf i go gpv"Uhr ö+. "hqt"gcej "r tkeg"cpf "f go cpf "qrvkqp"cpf" i kxg" yj g"uco g"vq" yj g"Crrnkecvvo" Vj gtghqtg." cp"Crrnkecpv"ecp" tgegkxg" wr "vq" yj tgg"Cempqy rgf i go gpv"Uhr u"hqt"gcej "Crrnkecvkqp"Hqto 0Ki'ku' yj g"Crrnkecpvai' tgur qpuklktx{"vq"qdvckp" yj g"VTU'htqo "yj g'tgrgxcpv'F guki pcvgf "Kpvgto gf kct {0Vj g" tgi kutcvkqp"qh" y g"Crrnkecvkqp"d{"yj g"F guki pcvgf "Kpvgto gf kct {"f qgu"pqv"i wctcpvgg" yi cv" yj g"Gs wkx{"Uj ctgu" uj cm"dg" cmqecvgf "T'cmqvgf 0'Uwej "Cempqy rgf i go gpv'y km"dg"pqp/pgi qvkcdrg"cpf "d{"kugrh"y km"pqv'etgcvg"cp{"qdrki cvkqp"qh"cp{" mkpf 0'Y j gp"cp"Crrnkecpv'tgxkugu"j ku"qt" j gt"Crrnkecvkqp" "kp"ecug"qh"tgxkukqp"kp" yj g"Rtkeg+:"j g"Tuj g"uj cm"uwttgpf gt" yj g" gctnkgt"Cempqy rgf i go gpv'Uhr"cpf" o c{"tgs wguv'hqt"c"tgxkugf "VTU'htqo "yj g"tgrgxcpv'F guki pcvgf "Kpvgto gf kct {"cu"rtqqh" qh"j ku"qt" j gt" j cxkpi "tgxkukq" "yj g"rtgxkqwu"Crrnkecvkqp0""
- e0 Kp'tgrcvkqp"vq"grgevtqpke"tgi kntcvkqp"qh'Crrnkecvkqpu."vj g"r gto knukqp"i kxgp"d{"vj g"Uvqem'Gzej cpi gu"vq"wug"vj gkt"pgwy qtm' cpf "uqhwy ctg"qh'vj g"grgevtqpke"dkf f kpi "u{uvgo "ij qwf"pqv'kp"cp{"y c{"dg"f ggo gf"qt"eqpuvtwgf"vq"o gcp"vj cv'vj g"eqo rnkcpeg" y kyj "xctkqwu"uvcwwqt{"cpf"qvj gt"tgs wktgo gpwu"d{"qwt"Eqo rcp{."cpf"T'qt"vj g"Ngcf"O cpci gt"ctg"engctgf"qt"crrtqxgf"d{" y g"Uvqem'Gzej cpi gu="pqt"f qgu"kv"kp"cp{"o cppgt"y cttcpv."egtvkh{"qt"gpf qtug"vj g"eqttgevpguu"qt"eqo rngvgpguu"qh"eqo rnkcpeg"y kyj "vj g"uvcwwqt{"cpf"qvj gt"tgs wktgo gpwu."pqt"f qgu"kv"vcng"cp{"tgur qpukdknk{"hqt"yj g"hkpcpekcn"qt"qvj gt"uqwpf pguu"qh"qwt"Eqo rcp{."vj g"o cpci go gpv"qt"cp{"uej go g"qt"rtqlgev"qh"qwt"Eqo rcp{="pqt"f qgu"kv"kp"cp{"o cppgt"y cttcpv."egtvkh{"qt"gpf qtug"vj g"eqttgevpguu"qt"cp{"uej go g"qt"rtqlgev"qh"qwt"Eqo rcp{="pqt"f qgu"kv"kp"cp{"o cppgt"y cttcpv."egtvkh{"qt"gpf qtug"vj g"eqttgevpguu"qt"cp{"vj g"eqpvgpvu"qh"vj ku"Ftchv"Rtqur gewuu"qt"vj g"Rtqur gewu="pqt"f qgu"kv"y cttcpv'vj cv'vj g"Gs wkv{"Uj ctgu'y knildg"hknvgf"qt"y knileqpvkpwg"q"dg"hknvgf"qp"vj g"Uvqem'Gzej cpi gu0"
- f0 Kp"ij g"gxgpv'qh"cp"wr y ctf "tgxkukqp"kp"ij g"Rtkeg."Tgwkhlfkpf kxlf wcn'Crrnecpwl"eqwrf "gkj gt"%k"tgxkug"ij gkt'Crrnecvkqp"qt" %kk"uj cm'o cmg"cff kklqpcn'rc{o gpv'dcugf "qp"ij g"tgxkugf "Rtkeg"*twej "ij cv'ij g"vqvcn'co qwpv'kQ0"qtki kpcn'Crrnecvkqp" Co qwpv'r nwu"cff kklqpcn'rc{o gpv'f qgu'pqv'gzeggf " "4"Ncnj u0'Vj g"tgxkugf 'Crrnecvkqpu'o ww'dg"uwdo kwgf "vq"ij g"uco g" F guki pcvgf "Kpvgto gf kct{"vq"y j qo "vj g"qtki kpcn'Crrnecvkqp"y cu"uwdo kwgf 0'Ki"vj g"vqvn'co qwpv' *kQ0"vj g"qtki kpcn' Crrnecvkqp"Co qwpv'r nwu"cff kklqpcn'rc{o gpv+"gzeggf u" "4"Ncnj u."vj g'Crrnecpv'y kni'dg"eqpulf gtgf "hqt"cmqecvkqp"wpf gt" y g'P qp/Kpukwwkqpcn'Rqtvkqp0Ko'j qy gxgt."vj g"T gvcklfkpf kxlf wcn'Crrnecpv'f qgu'pqv'gkj gt 'tgxkug'vj g'Crrnecvkqp"qt 'o cmg" cff kklqpcn'rc{o gpv'ij g'pwo dgt "qh'Cs wkx["Uj ctgu'crrnkgf 'hqt"uj cmi'dg"cf lwwgf 'f qy py ctf u'hqt 'vj g'r wtrqug"qh'cmqecvkqp." uwej "vj cv'pq"cff kklqpcn'rc{o gpv'y qwf "dg"tgs wktgf "htqo "vj g"T gvcklfkpf kxlf wcn'Crrnecpv'cpf "vj g"T gvcklfkpf kxlf wcn'Crrnecpv'kpf kxlf wcn'Crrnecpv'cpf "vj g"T gvcklfkpf kxlf wcn'Crrnecpv'kpf kxlf wcn'Crrnecpv'cpf "vj g"T gvcklfkpf kxlf wcn'Crrnecpv'kpf kxlf wcn'Crrnecpv'kpf "vj g"T gvcklfkpf kxlf wcn'Crrnecpv'kpf "vj g"T gvcklfkpf kxlf wcn'Crrnecpv'kpf "vj g"T gvcklfkpf kxlf wcn'Crrnecpv'kpf"
- g0 Kp"vj g"gxgpv'qh"c"f qy py ctf "tgxkukqp"kp"vj g"Rtkeg."TgvckrlKpf kxkf wcrlCrrrkecpv'o c{"tgxkug"vj gkt"crrrkecvkqp="qvj gty kug." vj g"gzeguu"co qwpv'r ckf "cv'vj g"vko g"qh'Crrrkecvkqp"y qwrf "dg"wpdrqengf "chvgt"Cmqvo gpv'ku'hkpcrkugf 0"
- 10 Cp{'tgxkukqp'qh'vj g'Crrnkecvkqp'vj cm'dg'ceeqorcpkgf'd{'kpuntwevkqpu'vq'dmem'vj g'kpetgo gpvcn'coqwpv.'kh'cp{.'vq'dg'rckf''qp''ceeqwpv'qh'vj g'wryctf'tgxkukqp'qh'vj g'Crrnkecvkqp0'

Vj g'Crrnecpun'uj qwf "pqvg"vj cv'kp"ecug"vj g'RCP."vj g'FR"KF"cpf "Enkgpv'KF" o gpvkqpgf "kp"vj g''Crrnecvkqp"Hqto "cpf "gpvgtgf" kpvq"vj g"grgevtqpke"u{ uvgo "qhl"vj g"Uvqem'Gzej cpi gu"f qgu"pqv'o cvej "y kvj "vj g"RCP."FR"KF"cpf "Enkgpv'KF" cxckrcdrg"kp"vj g" f cvcdcug"qh'Fgrqukvqtkgu."vj g"Crrnecvkqp"Hqto "ku"nkcdrg"vq"dg"tglgevgf0"

RTG/'NUWG'CFXGTVNGO GPV"

Uwdlgev'\q"Ugevkqp"52"qh'\j g"Eqo r cpkgu"Cev."qwt"Eqo r cp{"\ij cm"chngt"tgi kungtkpi "\j g"Rtqur gewu"y kj "\j g"TqE."r wdrkuj "c" r tg/Kuwg"cf xgtvkugo gpv."kp"\j g"hqto "t tguetkdgf "d{"\j g"UGDKT gi wrcvkqpu."kp"qpg"Gpi rkuj "rcpi wci g"pcvkqpcrif ckn{"pgy ur cr gt." qpg"J kpf k'rcpi wci g"pcvkqpcrif ckn{"pgy ur cr gt."qpg"tgi kqpcrifrcpi wci g"f ckn{"pgy ur cr gt."gcej "y kj "y kf g"ektewrcvkqp0"Kp" y g"r tg/"Kuwg"cf xgtvkugo gpv."y g"uj cm'lvcvg"\j g"Kuwg"Qr gpkpi "F cvg"cpf "\j g"Kuwg"Erqukpi "F cvg0"Vj ku"cf xgtvkugo gpv."uwdlgev" q"\j g"r tqxkukqpu"qh"Ugevkqp"52"qh'\j g"Eqo r cpkgu"Cev."4235."uj cm'dg"kp"\j g'hqto cv'r tguetkdgf "kp"Rctv'C"qh'Uej gf wrg'Z KKKqh" yj g"UGDKT gi wrcvkqpu0'

UN PRPI 'QH'VJ G'WPFGTY TRYRPI 'CI TGGO GPV'CPF'VJ G'TQE'HKNRPI "

Qwt"Eqorcp{."vjg"Ngcf"Ocpcigt"cpf"vjg"Octmgv'Ocngt"jcxg"gpvgtgf"lpvq"cp"Wpfgtytkkpi"Citggogpv'qp"Fgegodgt"45." 42450"



Hqt"vgto u"qh"vj g"Wpf gty tkkpi "Ci tggo gpv"r rgcug"ugg"ej cr vgt"vkrgf "öI gpgtcnllphqto cvlqpö"dgi kppkpi "qp"r ci g"6: "qh"vj ku" Ftchv'Rtqurgewu0'

Y g"y kni'hkrg"c"eqr { "qh" yi g"Rtqur gewu"y kyi "yi g"TqE"kp" vgto u"qh"Ugevkqp"48"cpf "cmi'qyi gt"r tqxkukqp"cr r rkecdrg"cu"r gt" Eqo r cpkgu'Cev0'

EOO RNGVKOP 'OHHOTO CNK/KGUHOT 'NKUVKPI '('EOO O GPEGO GP V'OHVTCFKPI "

Vj g'Eqorcp{"ujcm'wug'dguv'ghhqtvu'vq"gpuwtg'vjcv'cm'uvgru'hqt'eqorgvkqp"qh'vjg'pgeguuct{"hqtocrkkkgu'hqt'rkuvkpi"cpf' y ký kp'8'*Ukz+'y qtmkpi "f c{u'htqo 'Kuwg'Enqukpi "F cvg0I kxkpi "qh'Kpuxtwevkqpu'hqt'tghwpf "d{ 'wpdmemkpi "qh'co gwpv'xkc'CUDC'' pqv"ncvgt" vj cp"6*hqwt+"y qtmkpi "f c{u"qh" vj g"Knuwg"Enqukpi "F cvg." y qwrf "dg"gpuwtgf 0'Kh"uwej "o qpg{"ku"pqv"tgr ckf "y ksj kp" rtguetkdgf "\ko g'htqo "\j g'f cvg'qwt'Eqo r cp{ "dgeqo gu'hkcdrg"\q'tgrc{ 'kv."\j gp"qwt'Eqo r cp{ "cpf "gxgt{ "qhhkegt 'kp"f ghcwn\'\j cm" qp"cpf"htqo "gzrkt{"qhi'rtguetkdgf"\kog."dg"hkcdng"\q"tgrc{"uwej "crrnkecvkqp"oqpg{."ykyj "kpvgtguv'cu'rtguetkdgf"\wpfgt"UGDK *MEFT+"Tgiwncvkqpu."\jg"Eqorcpkgu"Cev."4235"cpf"crrnkecdng"ncy0Hwtvjgt."kp"ceeqtfcpeg"ykvj"Ugevkqp"62"qh"\jg"Eqorcpkgu" Cev."4235."vj g"Eqorcp{"cpf "gcej "qhhlegt"kp"f ghcwn"oc{"dg"r wpkuj cdrg"y kj "hkpg"cpf lqt"kortkuqpogpv"kp"uwej "c"ecug0"

POP/TGEGKRV'OH'NKUVKPI 'RGTO KUKOP''

Cp"Kuwgt"o cngu"cp"Crrnecvkqp"vq"vj g"Uvqem'Gzej cpi g*tu+'hqt"r gto kuukqp"vq"f gcn'kp lnkuv'cpf 'hqt"cp"qhhkekcn's wqvcvkqp"qh'vj g" Gswkw{"Ujctgu0Cm"vjg"Uvqem"Gzejcpigu"Intqo"yjgtg"uwej"rgtokuukqp"ku"uqwijv'ctg"fkuenqugf"kp"Rtqurgewuu0Vjg"fgukipcvgf" UqeniGzej cpi g'o c{ "dg"cu"f kıenqugf "kp"yj g"Rtqur gewu'y kıj "y j kej "yj g"Dcuku"qh"Cmqvo gpv'o c{ "dg"hkpcnkugf 0"

Ki'y g'r gto kuukqp"vq"f gcnlkp"cpf "qlhkekcn's wqvcvkqp"qh'y g"Gs wks("Uj ctgu'ctg"pqv'i tcpvgf "d{"cp{"qh'yi g"UvqemlGzej cpi g*i++"yj g" Kuwgt "o c{ "hqtyi y kij "tgr c{."y kij qw/"kpvgtguv."cm"o qpg{ "tgegkxgf "htqo "vj g"Crr nlecpvu"kp"r wtuwcpeg"qh"vj g"Rtqur gewuu0"

Kp"ecug."qwt"Eqorcp{"hckut"vq"qdvckp"nkukpi "qt"vtcfkpi "rgtokuukqp"htqo"vjg"uvqem'gzejcpigut"yjgtg"vjg"urgekhkgt"ugewtkkgu" $y\ gtg"vq"dg"rkuvgf."qwt"Eqo\ r\ cp\{"uj\ cm'tghwpf\ "vj\ tqwi\ j\ "xgtkhcdug"o\ gcpu"vj\ g"gpvktg"o\ qpkgu"tgegkxgf\ "y\ kvj\ kp"ugxgp"f\ c\{u"qh"ug'vq"dg"rkuvgf\ p'vg'vq"dg"rkuvgf\ p'vg'vq'vq"dg"rkuvgf\ p'vg'vq"dg"rkuvgf\ p'vg'vq"dg"rkuvgf\ p'vg'vq'vq'vq"dg"rkuvgf\ p'vg'vq'vq"$ tgegkr v'qh'llpvko cvkqp"htqo "uvqem'gzej cpi gu'tglgevkpi "vj g"crrnkecvkqp"hqt"rkuvkpi "qh'ur gekhkgf "ugewtkvkgu0"Vj g"Ngcf "O cpci gt" cpf "Tgi kıxtct"vq"yi g"Kıxwg"uj cmlpvko cvg"Rwdrle"Kıxwg"dcpmlDcpngtu"vq"yi g"Kıxwg"cpf "Rwdrle"Kıxwg"DcpmlDcpngtu"vq"yi g"Kıxwg" $\label{thm:conditional} \begin{tabular}{ll} uj cm'tcpuhgt" ij g'hwpf u'htqo "Rwdrke" Knuwg" ceeqwpv'vq" Tghwpf 'Ceeqwpv'cu'r gt'ij g'y tkwgp'k puvtwevkqp'htqo "ngcf 'O cpci gt'cpf'' and the conditional condit$ yj g'Tgi kıxtct'hqt'hwtyj gt'rc{o gpv'vq''yj g''dgpghkekct{''Crrnkecpw0'

"Kd"cp{"uwej "oqpg{"ku"pqv"tgrckf"y kyj kp"gkij v"fc{u"chgt"vjg"kuuwgt"dgeqogu"nkcdng"vq"tgrc{"kv"vjg"kuuwgt"cpf"gxgt{"fktgevqt" qh'y g'eqorcp{"y j q"ku'cp"qhhkegt"kp"f ghcwn'uj cm "qp"cpf "htqo" y g"gzrkt{"qh'y g"gki j y "f c{."dg"|qkpw("cpf "ugxgtcm("nkcdng" vq'tgrc{''yi cv'o qpg{''y kji 'kpvgtguv'cv'yi g'tcvg''qh'hkhrggp''r gt''egpv0'r gt''cppwo 0'

O RP KO WO 'UWDUET KRVKQP''

Vjku"Knuwg"ku"pqv'tguvtkevgf"vq"cp{"okpkowo"uwduetkrvkqp"rgxgn0"Vjku"Knuwg"ku"322' "wpfgtytkwgp0"Cu"rgt"ugevkqp"5;"qh"vjg" Eqorcpkgu'Cev."4235."kh'\j g"öUkcvgf"Okpko wo "Coqwpvö'j cu'pqv'dggp"uwduetkdgf "cpf" \j g"uwo "rc{cdrg"qp"crrrkecvkqp"ku'pqv" tgegkxgf"y kyikp"c"rgtkqf"qh"yiktv{"fc{u"htqo"yig"fcvg"qh"kuuwg"qh"yig"Rtqurgewuu."qt"uwej"qyigt"rgtkqf"cu"oc{"dg"urgekhkgf"d{" yj g"Ugewtkkgu"cpf "Gzej cpi g"Dqctf."yj g"co qwpv'tgegkxgf "wpf gt"uwd/ugevkqp"*3+"uj cm'dg"tgwtpgf "y kyj kp"uwej "vko g"cpf" o cppgt "cu"o c{"dg"r tguetkdgf "wpf gt"yj cvlugeskqp0Kn"yj g"Kunwgt"f qgu"pqvtgegkxgf "yj g"uwduetkr skqp"qh"322' "qh"yj g"Kunwg"yj tqwi j " yj ku'Ftchv'Rtqur gewu''kpenwfkpi "fgxqnxgo gpv'qh''wpfgty tkwgtu''y kyj kp''Ukzv{"Fc{u''htqo "'yjg"fcvg"qh'enquwtg"qh''yjg"Kuuwg."'yjg" Kuwst"uj cm'hqtyj y koj "tghwpf"vj g"gpvktg"uwduetkrvkqp"co qwpv'tgegkxgf0Kii'vj gtg"ku'c"fgrc{"dg{qpf"gki j v'fc{u'chyst"vj g"Kuwst" dgeqo gʻhkcdngʻ\q'r c{ "yj gʻco qwpv."yj gʻ'Kuuwgt 'uj cmi'r c{ "kpvgtguv'r tguetkdgf "wpf gt'ugevkqp"5; "qh'yj g'Eqo r cpkgu'Cev."42350'

O IP IO WO 'P WO DGT'QH'CNNQVVGGU''

Vj g"Kuwgt"o c{"gpuwtg"\j cv\'\j g'pwo dgt"qh'r tqr qugf "Cmqwggu'\q"\y j qo "Gs wkx{"Uj ctgu'o c{"dg"cmqwgf '\ij cm'pqv'dg"rguu'\j cp" 72" *Hkhv(+: "hckrkpi "y j kej "yj g"gpvktg"crrrkecvkqp"o qpkgu"o c{ "dg"tghwpf gf 'hqtyj y kyj 0'

O QF G'QHTGHWPF"

Y kj kp'ukz'Y qtmkpi 'F c{u'qh'vj g'Kuwg'Emqukpi 'F cvg.'vj g'Tgi kuvtct'vq'vj g'Kuwg'o c{'i kxg'kpuvtwevkqpu'vq'UEUDu'qt'kp'ecug'qh' Crrnlecvkqpu'd { "TKKu'crrn(kpi ''j tqwi j ''j g'WRKo gej cpkuo ''vq''j g''Urqpuqt 'Dcpm''vq'tgxqng''j g'o cpf cvg'cpf 'hqt''wpdnqemkpi " yj g"co qwpv'kp"CUDC'Ceeqwpwi'qh'wpuweeguuhwiCrrnkecpwi'cpf "cnuq"hqt"cp{ "gzeguu"co qwpv'diqengf "qp"Crrnkecwkqpu0"



Vj g"Tgi kıxtct"vq"yj g"Kuwg"o c{"kpuxtwev'yj g"eqpxtqmkpi "dtcpej "qh'yj g"UEUD'vq"wpdmqem'yj g"hwpf u"kp"yj g"tgrgxcpv'CUDC" Ceeqwpvlhqt"cp{"y kij ftcy p."tglgevgf"qt"wpuweeguuhwrlCUDC"Crrnlecvlqpu"qt"lip"ij g"gxgpvlqh"y kij ftcy cn'qt"hchwtg"qh"ij g"

NGVVGTUQH'CNNQVO GPV'QT'TGHWPF'QTFGTUQT'IPUVTWEVIQPU'VQ'VJ G'UEUDU'

 $Vj \; g'Tgi \; \textit{kurtct''vq''vj} \; g''\textit{Kuuwg''uj} \; cml'i \; kxg''\textit{kpurtwevkqpu''hqt''etgf} \; kv''vq''vj \; g''dgpghkekct \{ \; ''ceeqwpv''y \; kvj \; 'f \; gr \; qukvqt \{ \; 'r \; ct vkekr \; cpvu''y \; kvj \; kp''8'' \; kv''vq''vj \; g'''dgpghkekct \} \; (''ceeqwpv''y \; kvj \; 'f \; gr \; qukvqt \{ \; 'r \; ct vkekr \; cpvu''y \; kvj \; kp''8'' \; kv''vq''vj \; g'''dgpghkekct \} \; (''ceeqwpv''y \; kvj \; 'f \; gr \; qukvqt \} \; (''r \; ct vkekr \; cpvu''y \; kvj \; kvj \; kv''vq''vj \; g'''dgpghkekct \} \; (''ceeqwpv''y \; kvj \; 'f \; gr \; qukvqt \} \; (''r \; ct vkekr \; cpvu''y \; kvj \; k$ Y qtmlpi "Fc{u"htqo "yj g"Kuwg"Enqulpi "Fcvg0'Vj g"Tgi kntct"uj cm"lpurtwev'\j g"Ur qpuqt"Dcpm'qt"tgrgxcpv\"UEUDu"\q."qp"\j g" tgegkr v'qh'uwej "kpunt werkqpu"htqo "vj g'Tgi kuntct."tgxqng"vj g''o cpf cvg"cpf "hqt "wpdnqemkpi "vj g''co qwpv'kp"CUDC "Ceeqwpuu"vq" yj g'gzvgpv'qh'vj g'Crrnkecvkqp'Co qwpv'ur gekhkgf 'kp'vj g'Crrnkecvkqp'Hqto ''qt'vj g't grgxcpv'r ctv'vj gtgqh 'hqt'y kvj f tcy p.'tglgevgf'' qt"wpuweeguuhwn"qt"r ctvlcm("uweeguuhwn"CUDC"Cr r nlecvlqpu"y kij kp"8"Y qtmkpi "F c{u"qh"vj g"Kuuwg"Enqukpi "F cvg0"

IPVGTGUV'IP'ECUG'QHFGNC['IP'CNNQVOGPV'QT'TGHWPF<'

Vj g"kuwgt"uj cml'cmqv'ugewtkkgu"qhhgtgf "vq"vj g"r wdnke"uj cml'dg"o cf g"y kij kp"vj g"r gtkqf "r tguetkdgf "d{ "vj g"Dqctf 0'Vj g"kuwgt" uj cm'cmq"rc{"kpygtguv'cv'yj g"tcvg"qh"hkhggp"rgt"egpv0'rgt"cppwo "kh"yj g"cmqvo gpv'ngvvgtu"qt"tghwpf "qtf gtu"j cxg"pqv'dggp" $f \ gur \ cvej \ gf \ "vq" \ iy \ g"crr \ rhecpvu" \ qt \ "kp" \ c"ecug" \ y \ j \ gtg" \ y \ g"tghwpf \ "qt" \ r \ qt \ kqp" \ 'y \ gtgqh" \ ku" o \ cf \ g"kp" \ grgevtqpke" o \ cppgt. \ "y \ g"tghwpf" \ "grgevtqpke" o \ cppgt. \ "y \ g"tghwpf" \ "grgevtqpke" o \ cppgt. \ "y \ g"tghwpf" \ "grgevtqpke" o \ cppgt. \ "y \ g"tghwpf" \ "grgevtqpke" o \ cppgt. \ "y \ g"tghwpf" \ "grgevtqpke" o \ cppgt. \ "y \ g"tghwpf" \ "grgevtqpke" o \ cppgt. \ "y \ g"tghwpf" \ "grgevtqpke" o \ cppgt. \ "y \ g"tghwpf" \ "grgevtqpke" o \ cppgt. \ "y \ g"tghwpf" \ "grgevtqpke" o \ cppgt. \ "y \ g"tghwpf" \ "grgevtqpke" o \ cppgt. \ "y \ g"tghwpf" \ "grgevtqpke" o \ cppgt. \ "y \ g"tghwpf" \ "grgevtqpke" o \ cppgt. \ "y \ g"tghwpf" \ "grgevtqpke" o \ cppgt. \ "y \ g"tghwpf" \ "grgevtqpke" o \ cppgt. \ "y \ g"tghwpf" \ "grgevtqpke" o \ cppgt. \ "y \ g"tghwpf" \ "grgevtqpke" o \ cppgt. \ "y \ g"tghwpf" \ "grgevtqpke" o \ cppgt. \ "y \ g"tghwpf" \ "grgevtqpke" o \ cppgt. \ "y \ grgevtqpke" o \ cppgt. \ "y$ kpurtwevkqpu"j cxg"pqv"dggp"i kxgp"vq"yj g"ergctkpi "u{uvgo "kp"yj g"f kuerqugf "o cppgt"y kyj kp"gki j v'f c{u"htqo "yj g"f cvg"qh"yj g" enquwtg"qh"yj g"kuuwg0J qy gxgt."crrnkecvkqpu"tgegkxgf "chwgt"yj g"enquwtg"qh"kuuwg"kp"hwnhkro gpv'qh"wpf gty tkklpi "qdnki cvkqpu"vq" o ggv'yj g"o kpko wo 'uwduetkr ukqp'tgs wktgo gpv.''uj cmlpqv'dg"gpvkurgf 'hqt''yj g'uckf 'kpvgtguv0'

30 Kuwepeg"qh"Cmqvo gpv"Cf xleg<"Wrqp"crrtqxcn"qh"yj g"Dcuku"qh"Cmqvo gpv"d{"vj g"F guki pcvgf" "Uqem"Gzej cpi g."vj g"Ngcf" $O\;cpci\;gt\;'qt\;'y\;g\;'Tgi\;knvtct\;'vq\;'y\;g\;'Knvvg\;'u\;j\;cm'ugpf\;'vq\;'y\;g\;'Dcpngtu\;'vq\;'y\;g\;'Knvvg\;'c\;'nkvv'qh'y\;gkt\;'Cr\;r\;nkecpvu'y\;j\;q\;'j\;cxg\;'dggp\;''$ cmqecvgf 1Cmqwgf 'Gs wkv{ "Uj ctgu'lkp''vj ku''Kuuwg0'

40/Rwtuwcpv'\q"eqphktocvkqp"qh"eqtrqtcvg"cevkqpu"ykyj"tgurgev'\q"Cmqvogpv'qh"Gsvkx("Ujctgu."vjg"Tgikuxtct"\q"vjg"Kuwy"ykm" f kur cvej "Cmqvo gpv"Cf xkeg"\q"\j g"Cr r nkecpvu"y j q"j cxg"dggp"Cmqwgf "Gs wkx{ "Uj ctgu"kp"\j g"Kuwg0"

50'Crrtqxcn'qh''yj g''Dcuku''qh''Cmqvo gpv''d{ "yj g''F guki pcvgf "'Uqem'Gzej cpi g0''Cu''f guetkdgf "cdqxg''uj cm''dg''f ggo gf "c"xcnkf"." dkpf kpi "cpf "kttgxqecdrg"eqpvtcev"hqt"vj g"Crrrkecpv0"

HKNIPI 'QH'VJ G'RTQURGEVWU'Y KVJ 'VJ G'TQE''

Vj g'Eqorcp{ 'y kmihkrg'c'eqr{ "qhi'yj g'Rtqurgewu'y kyj "yj g'TqE'kp''vgtou''qh''Ugevkqp''48"qh'Eqorcpkgu''Cev.''42350'

- F guki pevgf 'F cvg'cpf 'Cmqvo gpv'qh'Gs wkv("Uj ctgu'F guki pevgf 'F cvg-'Qp''vj g'F guki pevgf 'F cvg.''vj g'UEUDu'uj cm'vtcpuhgtu" yj g'hwpf u'tgrtgugpvgf 'd{ "cmqecvkqpu'qh'vj g'Gs wkv{ "Uj ctgu'kpvq'Rwdrke"Kuuwg'Ceeqwpv'y ksj "vj g'Dcpmgtu'vq'vj g'Kuuwg0'
- d+ Kuwcpeg"qh"Cmqvo gpv'Cf xkeg<"Wr qp"crrtqxcn"qh"y g"Dcuku"qh"Cmqvo gpv'd{"vj g"f guki pcvgf "uvqem"gzej cpi g."vj g" Tgi kuxtct"uj cm'wr nqcf "qp"ku"y gdukg0'Qp"yj g"dcuku"qh"cr r tqxgf "dcuku"qh"cmqvo gpv."yj g"Kuwgt"uj cm'r cuu"pgeguuct { " eqtrqtcvg"cevkqp"vq"hceknkcvg"vjg"cmqvogpv"cpf"etgfk/"qh"gs wkv{"ujctgu0'Crrnkecpvu"ctg"cfxkugf"vq"kpuntwev"vjgkt" F gr qukqt { "Rct vkekr cpvu" vq" ceegr v" yj g" Gs wkv{ "Uj ctgu" yj cv" o c { "dg" cmqwgf" vq" yj go "r wtuwcpv" vq" yj g" Knuwg0"
- Rwtuwcpv'vq"eqphkto cwkqp"qh'uwej "eqtrqtcvg"cevkqpu."vj g"Tgi kuxtct"y kni'f kurcvej "Cmqvo gpv'Cf xleg"vq"vj g'Crrnkecpvu" y j q"j cxg"dggp"cmqwgf "Gs wkx{ "Uj ctgu"kp"vj g"Kuwg0Vj g"f kur cvej "qh"cmqvo gpv"cf xkeg"uj cm'dg"f ggo gf "c"xcnkf ."dkpf kpi " cpf 'ktgxqecdrg'eqpvtcev0'
- Kuwgt 'y kni'o cng'\j g''cmqvo gpv'qh'\j g''gs wkx{ "tij ctgu''cpf "kpkkcvg"eqtr qtcvg''cevkqp"hqt"etgf kv'qh'\ij ctgu''vq''yj g''uweeguuhwri $cr\,r\,\text{rleccpul'}F\,gr\,qukqt\,\{\,\text{'Ceeqwpv'y k,j kp''v,j}\,g''\text{ko}\,g''r\,tguetkdgf\,'\text{'wpf}\,gt\,'\text{'cr}\,r\,\text{rlecdrg''ncy}\,0'\text{Vj}\,g''\text{Kuwgt}\,'\text{'cnuq''gpuwt}\,gu''\text{'y}\,g''\text{et}\,gf\,kv''qh''\}$ uj ctgu" vq" vj g"uweeguuhwn''Crrnkecpvu" Fgrqukvqt {"Ceeqwpv'ku" eqorngvgf" y kyj kp" qpg" y qtmkpi "Fc {"Intqo" vj g" fcvg" qh" cmqvo gpv."chxgt"yj g'hwpf u'ctg"vtcpuhgttgf 'htqo 'CUDC'Rwdrke 'Kuwy'Ceeqwpv'vq'Rwdrke 'Kuwy'ceeqwpv'qh'vj g'huuwgt0'

FGUN PCVGF'FCVG<"

Qp"yj g"F guki pcvgf "f cvg."yj g"UEUDu"uj cm"vtcpuhgtu"yj g"hwpf u"tgr tgugpvgf "d{"cmqecvkqpu"qh"yj g"Gs wkx{"Uj ctgu"kpvq"Rwdrhe" Kuwg'Ceeqwpv'y ky ''y g'Dcpmgtu'\q''y g'Kuwg0'

Vj g'Eqo r cp{ 'y kmikuwg''cpf 'f kur cvej 'rgwgtu''qh''cmqvo gpv'T'qt 'rgwgtu''qh'tgi tgv'cmpi 'y kij 'tghwpf ''qtf gt ''qt ''etgf ki'yj g''cmqwgf '' ugewtkskgu"vq"vj g"tgur gevkxg"dgpghkekct {"ceeqwpvu."kh"cp{"y ky kp"c"r gtkqf "qh"8"y qtmkpi "f c{u"qh"vj g"Kuwg"Emukpi "F cvg0"Vj g" Eqorcp{"y kni'kpvkocvg"vj g"f gvcknu''qh''cmqvogpv''qh''ugewtkkgu''vq"F gr qukxqt{"koogf kcvgn("qp"cmqvogpv''qh''ugewtkkgu''vpf gt" Ugevkqp'78'qh'\'y g'Eqorcpkgu'Cev.''4235''qt''qvj gt''crrnkecdng'rtqxkukqpu.''kh''cp{0'



CXCKNCDKNK/J 'OH'VJ G'RTQURGEVWU'CPF'VJ G'CRRNÆCVKQP'HQTQU<'

Eqr kgu"qh"y g"Crr rkeckqp"Hqto "cpf "y g"cdtkf i gf "r tqur gewu"y kni'dg"cxckrcdrg"cv'y g"qlhkegu"qh"y g"Ngcf "O cpci gt."y g" F guki pcvgf "Kovgto gf kctkgu."cpf "Tgi kuvgtgf "Qhhkeg"qh"qwt"Eqo r cp{0'Cp"grgevtqpke"eqr {"qh"yi g"Crrrkecvkqp"Hqto "y kni'cnuq" dg"exekredrg"hqt"f qy prqef "qp"\j g"y gduksgu"qh"\j g"DUG"\sqrt y y Qdugkpf keQeqo +:"\j g"UEUDu."\j g"Tgi knxgtgf "Dtqngtu."\j g"TVCu" cpf 'y g'EF Ru'cv'ngcuv'qpg'f c{ 'r tkqt 'vq'y g'Knuwg'Qr gpkpi 'F cvg0'

I GPGTCN'KPUVTWEVKQPU'

Rrgcug"pqvg"vj cv"S KDu"cpf "P qp/Kpuvkwwkqpcn"Kpxguvqtu"ctg"pqv"r gto kwgf "vq"y kaj f tcy "vj gkt"cr r nlecvkqp*u+"qt"nqy gt"vj g"ukt g" qh'yj gkt 'cr r n'ecvkqp*u+'*kp' vgto u'qh's wcpvkx{ "qh'Gs wkx{ "Uj ctgu'qt 'yj g'Dkf 'Co qwpv+'cv'cp{ 'uvci g0T gvckri kpf kxkf wcn'Cr r n'ecpwi' ecp't gxkug''y gkt "crrnlecvkqp*u+"f wtkpi "'y g'Kuwg''Rgt kqf "cpf "y kyi f tcy "'y gkt "crrnlecvkqp*u+" wpkti'Kuwg' Enqulpi "F cvg0'

Fqøu'

- c0Ej gemikh"{ qw'ctg"grki kdng"\q"crrn{"cu'r gt"\j g"\gto u'qh'\j ku'F tch\'Rtqur gewu'cpf "wpf gt"crrn\ecdng'hcy."twgu."tgi wcwkqpu." i wkfgrkpgu'cpf "crrtqxcn.≓Cm'Crrnkecpvu'uj qwnf "uwdo kv'yjgkt "dkfu'vjtqwij" "yjg'CUDC"rtqeguu'qpn(≕'
- d0Gpuwtg''y cv''{ qw'j cxg''crrnkgf 'y ky kp''y g''Kuwg''Rtkeg="
- e0Tgcf "cm'y g'kpuxtwevkqpu"ectghwn("cpf "eqo r ngvg"y g'Crrnkecvkqp"Hqto "kp"y g''r tguetkdgf "hqto ="
- f0Gpuwtg"yi cvi'{qw'j cxg"o gpwlqpgf "yi g"eqttgevl'CUDC"Ceeqwpv'pwo dgt"kh"{qw''ctg"pqv''cp"TKK'dkf f kpi "wukpi "yi g"WRK O gej cpkuo "kp" i g'Crrnkecvkqp" Hqto "cpf "kh" {qw'ctg" cp" TKKwukpi "i g"WRKO gej cpkuo "gpuwtg" i cv" {qw' j cxg" o gpvkqpgf" yj g'eqttgev'WRKKF 'kp''yj g'Crrnkecvkqp''Hqto ="
- Gpuwtg"yj cv"{qwt"Crrnkecvkqp"Hqto "dgetkpi "vj g"uvco r "qh"c"F guki pevgf "Kpvgto gf ket{"ku"uvdo kvgf "vq"vj g"F guki pevgf " g0Kpvgto gf kct{"cv"yj g"Dkf f kpi "Egpvtg"*gzegr v"kp"ecug"qh"grgevtqpke"Dkf u+"y ksj kp"yj g"r tguetkdgf "vko g0Tgvckrl"Kpf kxkf wcrl Crrkecpu'wukpi 'WRKO gej cpkuo.'o c{'uwdo k/'\j gkt'CUDC'Hqto u'y kj 'U{ pf kecvg'O go dgtu.'Tgi kungtgf 'Dtqmgtu.'TVC'' qt 'F gr qukxqt { 'Rct vke kr cp vu='
- Ю TKKi'Crrn(kpi "kp"yj g"Kuwg"uj cm'gpuwtg"yj cv'yj g{"wug"qpn("yj gkt"qy p'CUDC"Ceeqwpv'qt"qpn("yj gkt"qy p'dcpm'ceeqwpv' rlyngf "WRKKF" "qpn("hqt "T KKi" wulyi "'y g"WRKO gej cpkuo +"vq"o cng"cp"cr r rlecvlqp "lyp"y g"Kuwg"cpf "pqv'CUDC"Ceeqwpv" qt "dcpm'ceeqwpv'nkpngf "WRKKF" qh'cp{ "yj ktf "r ctv{ ="
- i 0 Gpuwtg''y cv''{ qw'j cxg'hwpf u'gs wcn'\q'\y g'Crrnkec\lqp'Co qwpv'kp''y g'CUDC'Ceeqwpv'o ckpvckpgf 'y ky ''y g'UEUD'dghqtg'' uwdo kwkpi "vj g'CUDC"Hqto "vq"cp{"qh'vj g'F guki pcvgf "Kpvgto gf kctkgu=""
- j 0 Kp"ecug"qh"lqkpv"Crr rkecvkqpu. "gpuwtg"vj cv"hktuv"crr rkecpv"ku"vj g"CUDC"Ceeqwpv"j qrf gt "%qt"vj g"WRK/rkpngf "dcpm"ceeqwpv" j qnfgt."cu"vjg"ecug"oc{"dg+"cpf"vjg"ukipcwstg"qh"vjg"hktuv"Dkffgt"kn"kpenwfgf"kp"vjg"Crrnkecvkqp"Hqto="
- $Gpuwtg''yj\ cv'yj\ g''uki\ pcwtg''qh''yj\ g''Hktuv''Cr\ r\ n'eccylqp''lqkpv''Cr\ r\ n'eccylqpu.''ku''kpenwf\ gf\ ''kp''yj\ g''Cr\ r\ n'eccylqp''Hqto\ u=''$ 10
- 10 Gpuwtg"vj cv"{qw"tgs wguv'hqt"cpf "tgegkxg"c"uvco r gf "cenpqy ngf i go gpv"qh"vj g"Crrnlecvkqp"Hqto ="
- Gpuwtg''y cv'y g'pco g*u+'i kxgp'kp''y g'Crrnkeckqp'Hqto 'ku''l'ctg'gzcevn(''y g'bco g'cu''y g'pco g*u+'kp''y j kej ''y g'dgpghkekct{" ceeqwpv"ku"j grif "y kyj "vj g"F gr qukqt { "Rct vkekr cpv0"Kp"ecug"qh"lqkpv"Cr r nkecvkqpu..."vj g"Cr r nkecvkqp"Hqto "uj qwrf "eqpvckp" qpn("ij g'pco g'qh'ij g'Hktuv'Crrnkecpv'y j qug'pco g'uj qwf "cnuq'crrgct "cu'ij g'hktuv'j qnf gt "qh'ij g'dgpghkekct { "ceeqwpv'j gnf " kp'lqkpv'pco gu0Gpuwtg''vj cv'vj g''uki pcwxtg''qh''vj g''Hktuv''Crrnkecpv'ku'kpenwfgf''kp''y g'Crrnkecvkqp''Hqto u0RCP''qh''vj g''Hktuv' Crrnlecpv'ku'tgs wktgf ''vq''dg''ur gekhkgf ''kp''ecug''qh''lqkpv'Crrnlecvkqpu="
- n0Gpuwtg" y cv" {qw'uwdo k/' y g"tgxkugf "Crrnlecvkqpu" vq" y g"uco g"F guki pcvgf "Kpvgto gf kct {." y tqwi j "y j qo " y g"qtki kpcn" Crrnlecvkqp"y cu"r reegf "cpf "qdvckp"c"t gxkugf "cempqy rgf i o gpv="
- Tgyckn''Nof kxkf wcn''Noxguvqtu''pqv'wukpi "vj g"WRKO gej cpkuo."uj qwnf "uwdo kv''yj gkt''Crrnkecvkqp"Hqto "fktgevn("y kyj "UEUDu" cpf "pqv'y kyj "cp{"qyj gt"F guki pcvgf "Kovgto gf kct{="
- Gzegr v'hqt 'Crr necvkqpu'*k+"qp"dgj cnh"qh"vj g"Egpvtcn"qt "Uvcyg"I qxgtpo gpvu"cpf "vj g"qhhlekcnu"crr qkpvgf "d{ "vj g"eqwtvu." y j q. "kp" 'gto u"qh"c"UGDK ektewrct "f cvgf" Lwpg" 52. "422:.."o c{ "dg" gzgor v htqo "ur gekh{ kpi "yj gkt" RCP 'hqt "\tcpuce kpi "kp" yj g" ugewtkukgu'o ctmgv.'**kk-tuwdo kwgf "d{ 'kpxguvqtu'y j q'ctg"gzgo r v'htqo "yj g'tgs wktgo gpv'qh'qdvckpkpi "T'ur gekh{kpi 'yj gkt'RCP" hqt"vtcpucevkpi "kp" y g"ugewtkskgu"o ctmgv'kpenwf kpi "y kyj qwv'nko kscvkqp."o wnkrcvgtcn' l'dkrcvgtcn' kpurkswkqpu."cpf "*kkk+" Crrkeckqpu'd {"r gtuqpu't gukf gpv'kp"yj g"uvcvg"qh"Ukmko."y j q."kp"vgto u'qh"c"UGDKektewct"f cvgf "Lvxl("42."4228."o c {"dg"



gzgo r vgf 'htqo ''ur gelh{ kpi ''yi gkt 'RCP 'hqt''tcpucevkpi ''kp''yi g''ugewtkkgu''o ctngv.''cmi'Cr r necpwu''uj qwf ''o gpvkqp''yi gkt 'RCP'' cmqwgf 'wpf gt''yi g''KV''Cev0Vj g''gzgo r vkqp'hqt''yi g'Egpvtcniqt''yi g''Ucvg'I qxgtpo gpv'cpf 'qhhkekcnu''cr r qkpvgf ''d{ ''yi g''eqwtwu'' cpf 'hqt'lpxguvqtu'tgukf kpi 'lp''yi g''Ucvg'qh'Ukmnko 'ku'uwdlgev'vq''*c+'yi g'F go qi tcr j ke'F gvcknu'tgegkxgf 'htqo ''yi g'tgur gevkxg'' f gr qukxqtkgu''eqphkto kpi ''yi g''gzgo r vkqp''i tcpvgf ''vq''yi g''dgpghkekct { ''cy pgt''d{ ''c'uvkxcdng''f guetkr vkqp''kp''yi g''RCP 'hkgrf ''cpf'' yi g''dgpghkekct { ''ceeqwpv'tgo ckpkpi ''kp''ŏcevkxg'uvcwwö='cpf' '*d+'kp''yi g''ecug''qh'tgukf gpwu'qh''Ukmnko .''yi g''cf f tguu'cu'r gt''yi g'' F go qi tcr j ke'F gvcknu'gxkf gpekpi ''yi g''uco g0Cmi'qyi gt''cr r necvkqpu'kp'y j kej ''RCP ''ku'pqv'o gpvkqpgf ''y kni'dg''tglgevgf=''

- q0 Gpuwtg" y cv" yi wo d"ko r tguukqpu" cpf "uki pcwtgu" qyi gt" yi cp"kp" yi g"rcpi wci gu"ur gekhkgf "kp" yi g"Gki j yi "Uej gf wrg" q" yi g" Eqpuvkwwkqp" qh"kfof kc"ctg" cwgungf "d{"c"O ci kuntcvg" qt" c"P qvct{"Rwdrke" qt" c"Ur gekcn" Gz gewkxg" O ci kuntcvg" wpf gt" qhhkekcn" ugcn="
- s0 Gpuwtg"vj cv"kp"ecug"qh"Crrnkecvkqpu"wpf gt"r qy gt"qh"cwqtpg{"qt"d{"nko ksgf "eqorcpkgu."eqtrqtcvgu."vtwuv"gve0"tgrgxcpv" f qewo gpvu"ctg"uvdo ksgf ="
- t0 Gpuwtg" vj cv"Cr r nlecvkqpu" uwdo kwgf "d{"cp{"r gtuqp" qwullf g"Kpf kc" uj qwrf "dg" kp"eqo r nlepeg" y kyj "cr r nlecdrg" hqtgki p"cpf "Kpf kcp" ncy u="
- u0 Crrnecvkqp"d{"Grki kdng"PTKi'hqt"cp'Co qwpv'qh'nguu''yi cp" "4"Ncnji u''y qwrf "dg"eqpukf gt gf "wpf gt "yi g"Tgvckri'Ecvgi qt {"hqt "yi g"r wtr qugu"qh'cmqecvkqp"cpf 'Crrnkecvkqpu''hqt "cp'Co qwpv'gzeggf kpi " "4"Ncnji u''y qwrf "dg"eqpukf gt gf "wpf gt "yi g" Pqp/Kpurkwwkqpcn'Ecvgi qt { 'hqt "cmqecvkqp"kp"yi g"Kuwyg=""
- **Upeg"yj g"cmqvo gpv"y kni'dg"kp"f go cvgtkchkugf "hqto "qpn{."gpuwtg"yj cv'yj g"Crrnkecpwti"f grqukxqt { "ceeqwpv"kti"cevkxg."'yj g" eqttgev"F R"Æ. "Enkgpv"Æ". "RCP "cpf "WRKÆ. "kh"crrnkecdig. "ctg"o gpvkqpgf "kp"yj gkt "Crrnkecvkqp"Hqto "cpf "yj cv'yj g"pco g" qh"yj g"Crrnkecpv."'yj g"F R"Æ. "Enkgpv"Æ". "RCP "cpf "WRKÆ. "kh"crrnkecdig. "gpvgtgf "kpvq"yj g"qpnkpg"kRQ"u{ uvgo "qh"yj g"Uvqeni" Gzej cpi g"d{ "yj g"tgngxcpv"F guki pcvgf "kpvgto gf kct {."cu"crrnkecdig. "o cvej gu"y kxj "yj g"pco g. "F R"Æ. "Enkgpv"Æ. "RCP "cpf" WRKÆ. "kh"crrnkecdig. "cxckredig"kp"yj g"F grqukqt { "f cvcdcug=""
- w0 Kp'ecug'qh'CUDC'Crrnecpul*qqj gt'ij cp"TgvcktKpf kxkf wcn'Crrnecpvu'wukpi 'WRKO gej cpkuo + "gpuwtg" j cv'y j krg'Dkf f kpi "
 y tqwi j "c'F guki pcvgf "Kpvgto gf kct {."vj g'CUDC"Hqto "ku'uwdo kwgf "vq"c"F guki pcvgf "Kpvgto gf kct { "kp"c'Crrn { kpi "Egpvtg"
 cpf "j cv'y g"UEUD" y j gtg" y g'CUDC'Ceeqwpv."cu"ur gekhkgf "kp" y g'CUDC"Hqto ."ku"o ckpvckpgf "j cu"pco gf "cv'rgcuv'qpg"
 dtcpej "cv'y cv'rqecvkqp"hqt" y g"F guki pcvgf "Kpvgto gf kct { "vq"f gr qukv'CUDC"Hqto u"*c"nkuv'qh'uwej "dtcpej gu"ku"cxckrcdrg"
 qp" y g'y gdukg"qh'UGDKcv'j wr < ly y 0 ligdk0 qx0xp+="</p>
- x0 Gpuwtg''y cv''{qw''j cxg''ceegr vgf ''y g''WRKO cpf cvg'Tgs wguv'tgegkxgf ''htqo ''y g''Ur qpuqt ''Dcpm'r tkqt ''vq''34-22 'r 0o 0'qh''y g''
 Y qtmkpi 'F c{ ''ko o gf kcvgn{ ''chngt 'y g''Knuwg''Emqukpi 'F cvg=''
- ZO Gpuwtg"yi cv"{qw"j cxg"eqttgevn("uki pgf "yi g"cwyi qtkucvkqp"T'wpf gtvcmkpi "dqz"kp"yi g"Crrnlecvkqp"Hqto. "qt"j cxg"qyi gty kug" rtqxkf gf "cp"cwyi qtkucvkqp"vq"yi g"UEUD"qt"yi g"Ur qpuqt"Dcpm"cu"crrnlecdng. "xkc"yi g"gngevtqpke"o qf g. "hqt"dnqemkpi "hwpf u" kp" yi g"CUDC"Ceeqwpv"gs wkxcngpv"vq"yi g"Crrnlecvkqp"Co qwpv"o gpvkqpgf "kp" yi g"Crrnlecvkqp"Hqto "cv" yi g" vko g"qh" uwdo kuukqp"qh"yi g"Crrnlecvkqp0Dkf "Kp"ecug"qh"TKKu"uwdo kwkpi "yi gkt"crrnlecvkqpu"cpf "rctvkekrcvkpi "kp"yi g"Kuuwg"yi tqwi j " yi g"WRKO gej cpkuo. "gpuwtg"yi cv"{qw"cwyi qtkug"yi g"WRKO cpf cvg"Tgs wguv"tckugf "d{"yi g"Ur qpuqt "Dcpmihqt"dnqemkpi "qh" hwpf u"gs wkxcngpv"vq"Kuuwg"Co qwpv"cpf "uwdugs wgpv"f gdkv"qh"hwpf u"kp"ecug"qh"Cnqvo gpv=""
- {0 Gpuwtg"ý cv"{qw"j cxg"eqttgevn{"uki pgf "ý g"cwj qtk| cvkqp"Twpf gtvcmkpi "dqz"kp"ý g"Crrnkecvkqp"Hqto ."qt"j cxg"qy gty kug" rtqxkf gf "cp"cwj qtkucvkqp"vq"ý g"UEUD"qt"ý g"Urqpuqt"Dcpm"cu"crrnkecdng. "xkc"ý g"gngevtqpke"o qf g. "hqt"dnqemkpi "hwpf u" kp" ý g"CUDC"Ceeqwpv"gs wkxcngpv"vq" ý g"Crrnkecvkqp"Co qwpv"o gpvkqpgf "kp" ý g"Crrnkecvkqp"Hqto "cv" ý g" vko g"qh" uwdo kuukqp"qh"ý g"Crrnkecvkqp=""
- TgvckilKpf kxkf wcilCrrnecpwlwukpi "yi g"WRKO gej cpkno "uj cml'gpuwtg"yi cvl'f gvcknu"qhl'yi g"Crrnecvkqp"ctg"tgxkgy gf "cpf" xgtkhlgf "d{ "qr gpkpi "yi g"cwcej o gpv"kp"yi g"WRKO cpf cvg"Tgs wguv"cpf "yi gp"rtqeggf "q"cwij qtk g"yi g"WRKO cpf cvg" Tgs wguv'wukpi "ji ku"l"ji gt"WRKRKP 0Wrqp"yi g"cwcj qtk cvkqp"qhl'yi g"o cpf cvg"wukpi "ji ku"l"ji gt"WRKRKP ."c"TgvckilKpf kxkf wcil Crrnecpv"uj cml'dg"f ggo gf "vq"j cxg"xgtkhlgf "yi g"cwcej o gpv"eqpvckpkpi "yi g"crrnecvkqp"f gvcknu"qhl'yi g"TgvckilKpf kxkf wcil Crrnecpv"kp"yi g"WRKO cpf cvg"Tgs wguv"cpf "ji cxg"ci tggf "vq"dmeni'yi g"gpvktg"Crrnecvkqp"Co qwpv"cpf "cwj qtkl gf "yi g" Urqpuqt"Dcpmi'vq"dmeni'yi g"Crrnecvkqp"Hqto =""



- cc0 J qy gxgt. 'Crrnlecvkqpu''tgegkxgf "htqo "HRKu''dgctkpi "ý g"uco g"RCP "uj cm''pqv''dg"'tgcvgf "cu''o wnkrng"Dkf u''kp"'y g"gxgpv'' uwej "HRKu'wkrkug''y g'O KO "Utwewtg''cpf 'uwej 'Dkf u'j cxg''dggp'o cf g'y kij 'f khtgtgpv''dgpghkekct { "ceeqwpv'pwo dgtu. 'Enkgpv'' KF u'cpf 'F R'KF u=""
- dd0 HRKu"o cnkpi "O KO "Crrnkecklapu" wukpi "vjg"uco g"RCP." cpf "fkthgtgpv"dgpghkekct { "ceeqwpv"pwo dgtu." Enkgpv"kFu"cpf "FR" KFu." ctg"tgs wktgf "vq"uwdo kv"c" eqphkto cvkqp" vjgkt" Crrnkecklapu" ctg" wpfgt" vjg"O KO "untwewstg" cpf "kpfkecvg" vjg" pcog" qh" vjgkt" kpxguvo gpv"o cpci gtu" kp" uwej "eqphkto cvkqp" vjkej "ujcm" dg" uwdo kvvgf" cnqpi "vjkj" gcej "qh" vjgkt" Crrnkecvkqp" Hqto u0Kp" vjg" cdugpeg" qh" uwej "eqphkto cvkqp" htqo "vjg" tgngxcpv" HRKu. "uwej "O KO "Crrnkecvkqpu" vjcm" dg" tglgevgf = ""
- ee0 Tgvckilkfof kxkl wcnlCrrnecpvilwukpi "vj g"WRKO gej cpkno "y j q"j cxg"t gxkugf "vj gkt"crrnecvkqpu'luwdugs wgpv'lq"o cmkpi "vj g" kpkkcnlCrrnecvkqp"uj qwrf "cnuq"crrtqxg"vj g"t gxkugf "WRKO cpf cvg"T gs wguv'i gpgtcvgf "d{"vj g"Urqpuqt"Dcpmilq"cwj qtkl g" dmemkpi "qhilmpf u"gs wkxcngpv'lq"vj g"t gxkugf "Crrnecvkqp"Co qwpv'cpf "luwdugs wgpv'f gdkv'qhilmpf u"kp"ecug"qh'Cmqvo gpv'lp" c"vko gn("o cppgt"cpf""
- $ff0 \quad Gpuwtg''yj\ cv'yj\ g'F\ go\ qi\ tcr\ j\ ke'F\ gycknu'ctg''wr\ f\ cvgf\ .''twg''cpf\ ''eqttgev'kp''cm''tgur\ gevu=''$

Vj g'Cr r rlecvkqp'Hqto 'y gtg'hcdrg'\q'dg'tglgevgf 'kh'\j g'cdqxg'\puvtwevkqpu.'cu'cr r rlecdrg.'y gtg'\pqv'eqo r rl\gf 'y kij 0'Cr r rlecv\qp'' o cf g''wukpi "kpeqttgev'WRK'j cpf rg''qt''wukpi "c''dcpni'ceeqwpv'\qh''cp''UEUD''qt''UEUDu'y j kej "ku'\pqv'o gpv\qpgf "kp'\j g''Cppgzwtg'' ÷Cø'\q'\j g''UGDKektewrct'\pq0'UGDKU Q IEHF IF KV4 IEKT IR.423; 1: 7"f cvgf "Lvn('48."423; 'y gtg''rlcdrg'\q''dg''tglgevgf 0'

Fqpøu≮"

- c0 Fq"pqv"crrn("hqt"nqy gt"vj cp"vj g"o kpko wo "Crrnkecvkqp"lukt g="
- d0 F q"pqv'uwdo kv'cp"cr r nlecvkqp"wukpi "WRKKF. "kh"{qw'ctg"pqv'c"TKK="
- e0 Fq"pqv'crrn("hqt"cp"Co qwpv'gzeggf kpi " "4022"Ncnj u"*hqt"Crrnkecvkqpu"d{"Тgvckn'Крf kxkf wcл'Crrnkecpvн0""
- f 0 F q 'pqv'r c { 'vj g 'C r r rkecvkqp 'Co qwpv'kp 'ecuj . 'd { 'o qpg { 'qtf gt. 'ej gs wgu'qt 'f go cpf 'f tchw'qt 'd { 'r quvcn'qtf gt 'qt 'd { 'lwqem' kpxguv'qt 'cp { 'o qf g 'qyj gt 'vj cp 'drqengf 'co qwpwl'kp 'vj g 'dcpm'ceeqwpv'o ckpvckpgf 'y ksj 'UEUD="
- g0 Fq"pqv'ugpf "Crrnkecvkqp"Hqto u"d{ "rquv="kpuvgcf" 'uwdo kv'yj g"uco g"vq" yj g"Fguki pcvgf" "Kpvgto gfkct{ "qpn(="
- h0 Fq"pqv"crrn("cv"Ew/qhh"Rtkeg" ¾nqt"Crrnkecvkqpu"d{"SkDu"cpf"Pqp/Kpuvkwvkqpcn"Crrnkecpvu+="
- $i\ 0 \qquad F\ q''pqv'' \ purt\ wev'' \ \{qwt''t\ gur''gewkxg''dcpmu''vq''t\ grgcug''vj'\ g''hwpf\ u''drqengf'''vp''yj'\ g''CUDC''Ceeqwpv''wpf\ gt''vj'\ g''CUDC''r\ tqeguu='''$
- $j\ 0$ Fq"pqv"uwdo kı"yj g"Crrnkecvlqpu"hqt"cp"co qwpv"o qtg"yj cp"hwpf u"cxckredng"kp"{qwt"CUDC"ceeqwpv0"
- 10 Fq"pqv"uwdo kı"Crrnkecvkqpu"qp"rnckp"rcrgt"qt"qp"kpeqorngvg"qt"kmgi kdng"Crrnkecvkqp"Hqtou"qt"qp"Crrnkecvkqp"Hqtou"kp"c"eqnqwt"rtguetkdgf "hqt"cpqvj gt "ecvgi qt { "qh"Crrnkecpv="
- 10 Kp"ecug"qh"CUDC"Cr r rkecpvu. "f q"pqv'uwdo kv'o qtg"vj cp"qpg"CUDC"Hqto u"r gt"CUDC"Ceeqwpv="
- m0 Kti"{qw'ctg'c"Tgvckn'Kofkxkf wcn'Crrnkecpv'cpf "ctg"wukpi "WRKO gej cpkuo."fq"pqv'uwdo kv'o qtg'vjcp"qpg'Crrnkecvkqp"Hqto "hqt"gcej "WRKKF="
- n0 Ki'' = W'' =
- o 0 Fq"pqv'uwdo kv'yi g"CUDC"Hqto u"vq"cp{"Fguki pcvgf "Kpvgto gfkct{"yi cv'ku"pqv'cwyi qtkugf "vq"eqmgev'yi g"tgrgxcpv'CUDC" Hqto u"qt"vq"qwt"Eqo r cp{="
- $p0 \quad Fq''pqv''crrn(''qp''cp''Crrnlecvkqp''Hqto'''y' cv''fqgu''pqv''jcxg''y'jg''uvcor''qh''y'jg''tgngxcpv''Fgukipcvgf'''Kpvgtogfkct{="""} every flavor fla$
- q0 F q"pqv'lwdo kv'y
i g"I gpgtcn'l\fof gz "T gi kurgt "\forall KT+"pwo dgt 'kpurgcf "qh'y
i g'RCP="
- Fq"pqv"uwdo kv"kpeqttgev"f gvcknu"qh"vj g"FR"KF."Enkgpv"KF"RCP"cpf"WRKKF."kh"crrnkecdrg."qt"rtqxkfg"f gvcknu"hqt"c" dgpghlekct{"ceeqwpv"y j kej "ku'uwurgpfgf"qt"hqt"y j kej "f gvcknu"ecppqv"dg"xgtkhkgf"d{"vjg"Tgi knxtct"vq"vjg"Knuwg="
- s 0 F q 'pqv'lwdo kv'cp''cr r n'ecvkqp''kp''ecug''{ qw'ctg''pqv'gnki kdng''\q''ces wktg''Gs wkx{ 'Uj ctgu''wpf gt''cr r n'ecdng''rcy ''qt''{ qwt''tgngxcpv'' eqpunkwwkqpcn'f qewo gpvu''qt''qvj gty kug="



- t0Fq"pqv'crrn("kh"{qw'ctg"pqv'eqorgvgpv'vq"eqpvtcev'wpfgt"vjg"Kpfkcp"Eqpvtcev'Cev."3: 94"*qvjgt"vjcp"okpqtu'jcxkpi "xcnkf" f gr qukqt { "ceeqwp w 'cu'r gt 'F go qi tcr j ke 'F gvcknu'r tqxkf gf 'd { 'vj g'f gr qukqt { = "
- Fq"pqv'uwdo kv'cp"crrnlecvkqp"I'tgxkug"cp"Kuwg"Coqwpv."y kj "c"rtkeg"nguu'vj cp"vj g"Kuwg"Rtkeg=" u0
- \mathbf{w} Fq"pqv'uwdo kv"{qwt 'Crrn{"chygt"5022"ro "qp"vj g"Kuuwg"Empukpi "Fcyg="
- w_0 Ki'{qw'ctg'c'S KO."fq'pqv'uwdo kv'{qwt''crrrkecvkqp''chygt''5-22''ro ''qp''vjg'S KO''Kuwg''Enqukpi ''Fcvg=''
- Fq"pqv"hkm"wr "yj g"Crrnkecvkqp"Hqto "uwej "yj cv"yj g"Gs wkx{ "Uj ctgu"Crrnkecvkqp"hqt"gzeggf u"yj g"Kuuwg"uk∤ g"cpf "1"qt" x0kpxguvo gpv'nko kv'qt"o czko wo "pwo dgt"qh'\j g"Gs wkv{"Uj ctgu"\j cv'ecp"dg"j grf "wpf gt"\j g"cr r nlecdng"ncy u"qt"tgi wncvkqpu" qt"o czko wo "co qwpv'r gto kuukdrg"wpf gt"yj g"cr r necdrg"tgi wrcykqpu"qt"wpf gt"yj g"vgto u"qh"yj ku"Ftchv'Rtqur geww="
- y 0 Fq"pqv"crrn("hqt"uj ctgu"o qtg"vj cp"ur gekhkgf "d{"tgur gevkxg"Uvqem"Gzej cpi gu"hqt"gcej "ecvgi qt{="
- z0Fq'pqv'crrn{.'kh''{qw'ctg''cp''QED="
- {0 qh'Crrnlecvkqpu'uwdo kwgf "d{ "TKKu"wukpi "yj g"WRKO gej cpkuo ="
- $\mid 0$ Fq"pqv"crrn("qp"cpqy gt"Crrnlecvlqp"Hqto "chigt" {qw"j cxg"uwdo kwgf "cp"crrnlecvlqp" vq"cp {"qh" y g"F guki pcvgf" Kpvgto gf kctkgu="cpf"
- cc0 Fq"pqv'uwdokv'Crrnkecvkqpu"vq"c"Fgukipcvgf"Kpvgtogfkct{"cv'c"nqecvkqp"qvjgt"vjcp"Urgekhkgf"Nqecvkqpu0'Kb"{qw'ctg"c" TgvcktilfpfkxkfwcnCrrnecpv'cpf"ctg"wukpi "WRKO gej cpkuo". "fq"pqv'uwdo kv'yj g'CUDC"Hqto "fktgevn("y kyj "UEUDu0±"

Vj g'Crrnecvkqp"Hqto "ku'hkcdng"\q'dg"tglgeygf "kh'\j g"cdqxg"kpuvtwevkqpu."cu'crrnecdng. "ctg'pqv'eqornkgf 'y kj 0'

 $\label{thm:linear_control_co$ $wpdmpemlpi "gwe0" lpxguvqtu" ecp" tgcej "qww'vq" qwt" Eqo \ r \ cp \{ "Ugetgwct \{ "cpf" Eqo \ r \ nlcpeg" Qlhlegt 0 Hqt "f gwcknu" qhl'qwt "Eqo \ r \ cp \{ "Ugetgwct \{ "cpf" Eqo \ r \ nlcpeg" Qlhlegt 0 Hqt "f gwcknu" qhl'qwt "Eqo \ r \ cp \{ "Ugetgwct \{ "cpf" Eqo \ r \ nlcpeg" Qlhlegt 0 Hqt "f gwcknu" qhl'qwt "Eqo \ r \ cp \{ "ugetgwct \{ "cpf" Eqo \ r \ nlcpeg" Qlhlegt 0 Hqt "f gwcknu" qhl'qwt "Eqo \ r \ cp \{ "ugetgwct \{ "cpf" Eqo \ r \ nlcpeg" Qlhlegt 0 Hqt "f gwcknu" qhl'qwt "Eqo \ r \ cp \{ "ugetgwct \{ "cpf" Eqo \ r \ nlcpeg" Qlhlegt 0 Hqt "f gwcknu" qhl'qwt "Eqo \ r \ cp \{ "ugetgwct \{ "cpf" Eqo \ r \ nlcpeg" Qlhlegt 0 Hqt "f gwcknu" qhl'qwt "Eqo \ r \ cp \{ "ugetgwct \{ "cpf" Eqo \ r \ nlcpeg" Qlhlegt 0 Hqt "f gwcknu" qhl'qwt "Eqo \ r \ cp \{ "ugetgwct \{ "cpf" Eqo \ r \ nlcpeg" Qlhlegt 0 Hqt "f gwcknu" qhl'qwt "Eqo \ r \ cp \{ "ugetgwct \{ "cpf" Eqo \ r \ nlcpeg" Qlhlegt 0 Hqt "f gwcknu" qhl'qwt "Eqo \ r \ cp \{ "ugetgwct \{ "cpf" Eqo \ r \ nlcpeg" Qlhlegt 0 Hqt "f gwcknu" qhl'qwt "Eqo \ r \ cp \{ "ugetgwct \{ "cpf" Eqo \ r \ nlcpeg" Qlhlegt 0 Hqt "f gwcknu" qhl'qwt "Eqo \ r \ cp \{ "ugetgwct \{ "cpf" Eqo \ r \ nlcpeg" Qlh eq \ nlcpeg" Qlh$ Ugetgyct { "cpf" Eqornkepeg" Qhhlegt. "ugg" õI gpgtchliphqtocylaphö" "dgi kppkpi" "qp" rcig" 6: "qp" vj ku"Fchy" ktqur gewu"

Hqt"j grr rhog"f gvckru"qh"y g"NO "r wtuwcpv"vq"y g"UGDKU QŒHF (F KN4 1EKT 1R4243 146: 213 10 "f cvgf "O ctej "38."4243."ugg" õI gpgtcnKphqto cvkqpö"dgi kppkpi "qp"r ci g"6: "qp"\j ku"F chv'Rtqur gewu0"

RC[O GP V'D['UVQEM'HP XGUV"

 $\begin{tabular}{l} \p''y to u''qh''y g'Tgugtxg''Dcpm''qh'' \begin{tabular}{l} \p fic''Ektewrct''P q0F DQF''P q0'HUE''DE''641''46069021''4225/26'' ficygf''P qxgo dgt''7.''4225='' ficygf'' ficygf'$ yj g"qr vlqp"\q"wug"\j g"uvqemlkpxguv'kpuvtwo gpv'lp"nlgw"qh"ej gs wgu"qt"dcpmif tchwu'lqt"r c{o gpv'qh"Crrnkecvlqp"o qpg{"j cu"dggp" y kj ftcy p0J gpeg. 'r c{o gpv'\j tqwi j 'uvqemlkpxguv'y qwrf 'pqv'dg'ceegr vgf 'lkp'\j ku'Kuvvg0'

QVJ GT'IP UVTWEVIQPU'

LQIP V'CRRNIE CVIQPUIP 'VJ G'ECUG'QH'IP F IX IF WCNU'

Crrnlecvkqpu"o c{ "dg"o cf g"kp"ukpi ng"qt"lqkpv"pco gu"*pqv"o qtg"vj cp"vj tgg+0"Kp"vj g"ecug"qh"lqkpv"Crrnlecvkqpu."cm"rc{o gpvu" $y \; km' dg'' o \; cf \; g'' qww'' kp'' hcxqwt'' qh'' \dot{y} \; g'' Cr \; r \; n\! kecpv'' y \; j \; qug'' pco \; g'' cr \; r \; gctu'' hktuv'' kp'' \dot{y} \; g'' Cr \; r \; n\! kecvkqp'' Hqto \; 0'' Cm''$ eqo o wpłecyłqpu'y knidg'cfftguugf ''\q'iy g'Hktuv\Crrnecpv'cpf 'y knidg'fkırcvej gf '\q'j kı''qt'j kı''qt'j gt'cfftguu'cu'r gt''y g'F go qitcrj ke'' F gvcknu't gegkx gf 'ht qo 'vj g'F gr qukxqt {0'

O WNVIRNG'CRRNIE CVIQPU'

Cp"Crrnlecvvuj qwrf "uwdo kv"qpn("qpg"Crrnlecvkqp"*cpf "pqv"o qtg"vj cp"qpg+0"Vy q"qt"o qtg"Crrnlecvkqpu"y km"dg"f ggo gf "vq" dg"o wnkr ng"Crr nkecvkqpu"kh" y g"uqng"qt"Hktuv"Crr nkecpv"ku"qpg"cpf "y g"uco g0"

Kp"vjku"tgictf."vjg"rtqegfwtgu"yjkej"yqwnf"dg"hqmqygf"d{"vjg"Tgikuntct"vq"vjg"Knuwg"vq"fgvgev'ownwhrng"crrnkecwlqpu"ctg" i kxgp'dgqy <

Cm''crr''lecvkqpu''ctg'''gngevtqpkecm("uvtwpi"qp''hktuv''pco~g."cfftguu''*3uv''nkpg+"cpf"crr''lecpvxu''uvcwu0''Hwtyj~gt."vj~gug''cr r neckląpu'ctg'grgevtąpkecm('o cvej gf 'hqt'eqo o qp'hktuv'pco g'cpf 'cf f tguu'cpf 'kh'o cvej gf .'vj gug'ctg'ej gengf 'o cpwcm(" hqt"ci g."uki pewtg"cpf 'hey gt l"j wudcpf øu"pco g"vq"f gvgto kpg"kh"vj g{ "ctg"o wnkr ng"cr r nkecvkqpu0"



d0 $Crr \textit{rlec-kqpu''y j kej ''f q''pqv''s wcrkh{ ''cu''o wnkr rg''crr \textit{rlec-kqpu''cu''r gt''cdqxg''r tqegf wtg''ctg''hwt vj gt''ej gengf ''hqt''eqo o qp''}$ FR'KF l'dgpghleket { "KF OKp'ecug"qh'er r rhecylqpu'y kj "eqo o qp'FR'KF l'dgpghleket { "KF."etg"o cpwcm{ "ej gengf "\q"gnlo kpcyg" r quuldkrkv{ "qh'f cvc"gpvt{ "gttqt" vq"f gvgto kpg"kh'vj g{ "ctg"o wrwkr rg"cr r rkecvkqpu0"

Crr nkecvkqpu"y j kej "f q"pqv"s wcnkh{ "cu"o wnkr ng"crr nkecvkqpu"cu"r gt "cdqxg"r tqegf wtg"ctg"hwtyj gt"ej gengf "hqt "eqo o qp" RCP 0'Cm'uwej "o cvej gf "crrnlecvkqpu"y kyj "eqo o qp"RCP "ctg"o cpwcm{ "ej gengf" 'vq "gnko kpcvg"r quukdkrkv{ "qh"f cvc "ecr wxtg" gttqt"\q"f gvgto kpg"kh"\yj g{ "ctg"o wn.kr ng"cr r nkecvkqpu0"

Kp"ecug"qh"c"o www.nhwpf."c"ugrctcvg"Crrnkecvkqp"ecp"dg"ocfg"kp"tgurgev"qh"gcej"uejgog"qh"vjg"oww.nhwpf"tgikungtgf"yknj" UGDK'cpf "uwej "Crrnkecvkqpu"kp"tgurgev"qh"oqtg"vjcp"qpg"uejgog"qh"vjg"owwcn"hwpf "ykm"pqv"dg"vtgcvgf "cu"ownkrng" Crrnlecvkqpu"rtqxkf gf "vj cv'vj g"Crrnlecvkqpu"engctn("kpf kecvg"vj g"uej go g"eqpegtpgf "hqt"vj j kej "vj g"Crrnlecvkqp"j cu''dggp" o cf g0'

Kp"ecugu"y j gtg"vj gtg"ctg"o qtg"vj cp"42"*Vy gpv{+"xcnkf"crrnlecvkqpu"j cxkpi "c"eqooqp"cfftguu "uwej "uj ctgu'y km'dg"ngrv'kp" cdg{cpeg."r quv'cmqvo gpv'cpf "tgrgcugf "qp"eqphtro cvkqp"qh"õmpqy "{qwt"erkgpvö"pqto u"d{ "vj g"f gr qukxqtkgu0'Vj g"Eqo r cp{" tgugtxgu''yj g''tki j v''q''tglgev.''kp''ksu''cduqnwg''f kuetgykqp.''cmi'qt''cp{ "o wnkr ng''Cr r nkecykqpu'kp''cp{ "qt''cmi'ecygi qtkguû'' Chygt "uwdo kwlpi "cp" CUDC "Crrnlecvlqp" qt "Crrnlecvlqp" y tqwi j "WRKO gej cpluo "glyj gt "lip" r j {ulecn'qt "grgevtqple" o qf g. "cp" Crrnlecpv'ecppqv'crrn("*gksj gt"kp"rj {ukecn'qt"gngevtqpke"o qf g+"vq"gksj gt"vj g"uco g"qt"cpqvj gt"F guki pcvgf "Dtcpej "qh"vj g" UEUDOUwdo kuukqp"qh"c"ugeqpf"Crrnkecvkqp"kp"uwej "ocppgt"y km"dg"f ggogf"c"own ktrng"Crrnkecvkqp"cpf"y qwnf"dg"tglgevgf0"

Cp"kpxgurqt"o cmkpi "crrnkecvkqp"wukpi "cp{"qh"ej cppgnu"wpf gt"WRKRc{o gpvu"O gej cpkno ."uj cm'wug"qpn("j ku"1"j gt"qy p"dcpm" ceeqwpv'qt ''qpn('j ku''I'j gt ''qy p''dcpm'ceeqwpv'hlpngf ''WRKKF ''vq''o cng''cp''cr r necvlqp'lp''r wdnle 'kuuwgu0Cr r necvlqpu'o cf g''wullpi '' vj ktf 'r ctv{ 'dcpm'ceeqwpv'qt 'wukpi ''vj ktf 'r ctv{ 'rkpngf 'dcpm'ceeqwpv'WRKKF ''ctg'rkcdng'hqt'tglgevkqp0Ur qpuqt'Dcpm'iuj cmir tqxkf g'' yj g"kpxguvqtu"WRKrkpngf "dcpm'ceeqwpvlf gwkur'vq"TVC"hqt"r wtr qug"qh't geqpekrkcvkqp0TVC"uj cm'wpf gt vcng"(gej pkecnt glgevkqp" qh'cm'crrnlecvlqpu'vq'tglgev'crrnlecvlqpu'o cf g'wulpi 'vj ltf'rctv('dcpm'ceeqwpv0'

F wr nlecvg"eqr kgu"qh"Cr r nlecvkqp"Hqto u"f qy pmqcf gf "cpf "rt kpvgf "htqo "vj g"y gdukvg"qh"vj g"Uvqem"Czej cpi g"dgct kpi "vj g"uco g" crrnecvkqp"pwo dgt"uj cm'dg"tgcvgf "cu"o wnkrng"crrnecvkqpu"cpf "ctg"nkcdng"vq"dg"tglgevgf 0'Vj g"Eqorcp{."kp"eqpuwncvkqp" y kij "vj g"Ngcf "O cpci gt"tgugtxgu"vj g"tki j v'vq"tglgev."kp"ku"cduqnwyg"f kuetgvkqp."cmi'qt"cp{ "o wnkr ng"cr r nkecvkqpu"kp"cp{ "qt"cmi" $ecvgi\ qtkgu0Kp''j\ ku'tgi\ ctf.''j\ g''ttqegf\ wtg''y\ j\ kej\ ''y\ qwrf\ ''dg''hqmqy\ gf\ ''d\{''j\ g''Tgi\ kuvtct''q''j\ g''Kuvwg''q''f\ gvgev'o\ wmkr\ rg''cr\ r\ nkecvkqpu''$

Cm"Crrnlecvkqpu"y km'dg"ej gengf "hqt"eqo o qp"RCP 0'Hqt"Crrnlecpvu"qy gt"y cp"O wwcn"Hwpf u"cpf "HKK'uwd/ceeqwpvu." Crrnkecvkqpu'dgetkpi "vj g'uco g'RCP 'y km'dg''vtgevgf ''cu'o wnkrng''Crrnkecvkqpu''cpf ''y km'dg''tglgevgf 0'

Hqt"Crrnecvkqpu"htqo "O wwcn"Hwpf u"cpf "HKKuwd/ceeqwpuu"uwdo kwgf "wpf gt" yj g"uco g"RCP. "cu"y gm"cu"Crrnecvkqpu"qp" dgj crh'qh'y g'Crrnlecpwi'hqt'y j qo 'twdo kukqp'qh'RCP 'ku'pqv'o cpf cvqt { 'twej 'cu'y g'Egpvtcn'qt'Ucvg'I qxgtpo gpv.'cp'qhhlekcn' rks wkf cvqt"qt"tgegkxgt"crrqkpvgf "d{"c"eqwtv"cpf"tgukf gpvu"qh"Ukmnko ."vj g"Crrnkecvkqp"Hqto u'y kmidg"ej gengf "hqt"eqo o qp"F R" KF 'cpf 'Enkgpv'KF 0'

RGTO CPGPV'CEEQWPV'PWO DGT'QT'RCP"

Rwtuwcpv''q" ig "ektewrct" OTF IF qRIEkte" 2714229 "f cvgf" Crtkri49." 4229. "UGDKj cu'o cpf cvgf" Rgto cpgpv'Ceeqwpv'P wo dgt" *ôRCP ö+"vq"dg"vj g"uqrg"kf gpvkhkecvkqp"pwo dgt"hqt"cmi'r ctvkekr cpvu"vtcpucevkpi "kp"vj g"ugewtkkgu"o ctmgv."kttgur gevkxg"qh"vj g" co qwpv'qh'y g''tcpucevkqp''y Qg00Lwn('4.'42290Gcej 'qh'y g'Crrnkecpwi'tij qwnf 'o gpvkqp''j kulj gt'RCP 'cmqwgf 'wpf gt'y g'Kpeqo g'' Vcz"Cev."3; 830'Crrrkecvkqpu"y kyj qww'y g"RCP "y kni'dg"eqpukf gtgf "kpeqo r ngvg"cpf "ctg"nkcdng"vq"dg"tglgevgf 0'K/'ku"vq"dg" ur gekhecm("pqvgf "vj cv'Cr r necpvu"vj qwrf "pqv'uwdo kv"vj g"I gpgtcn'lkpf gz "T gi kuvtcvkqp"*6I KT ö+"pwo dgt "kpuvgcf "qh'vj g "RCP." cu'y g'Crrnkecvkqp'ku'nkcdrg'vq'dg'tglgevgf ''qp''y ku'i tqwpf 0'

Qwt 'Eqorcp{1'Tgi kwtct'\q'\jg'Kuwg1'Ngcf'Ocpci gt'ecp.'j qy gxgt.'ceegrv'\jg'Crrdec\dqp*u+'kp'yjkej'RCP'kd' y t api n('gpvgt gf 'lpvq'd{ 'CUDC'UEUDøu'lp'\j g'CUDC't\(uvgo .'\) køj qwv'cp{ 'lcvmv'ap'\j g'r ctv'all'Crrnecpv0'

TH J V'VQ'TGLGEV'CRRNÆCVKQPU''

Kp"ecug"qh"SKD"Crrnkecpvu "yig"Eqorcp{"kp"eqpuwncvkqp"y kyi"yig"Ngcf"Ocpcigt"oc{"tglgev"Crrnkecvkqpu"rtqxkfgf"yicv"yig" tgcuqpu'hqt'tglgevkpi "vj g'uco g'uj cmidg'i tqxkf gf "vq'uwej "Crrnkecpv'kp''y tkkpi 0Kp''ecug''qh'P qp/Kpukswkqpcn'Crrnkecpvu."Tgvckt" Kpf kxkf wcn'Crrnkecpwi'y j q''crrnkgf .''y g'Eqorcp{ "j cu''c'tki j v'\q'tglgev'Crrnkecvkqpu''dcugf "qp''yej pkecn'i tqwpf u0'



I TOWPFUHOT'TGLGEVIOPU'

Kp"cffkkqp"vq"yjg"i tqwpfu"hqt"tglgevkqp"qh"Crrnlecvkqp"qp"vgej plecn'i tqwpfu"cu"rtqxkfgf "kp"yjg"õl gpgtcn'Kphqto cvkqp" Fqewo gpv'hqt'Kpxguvkpi 'kp'Rwdnle'Kuwgö'Crrnlecvkqpu'o c{ 'dg'tglgevgf 'qp'yjg'hqmqy kpi "cffkkqpcn'ygej plecn'i tqwpfu'o'

- c0 Crrnleckqpu'uwdo kwgf 'y kij qww'kpuntwerkqp''\q''y g''UEUDu'\q''dmem'y g''gpyktg''Crrnleckqp''Co qwpv="
- d0 Crrnlecvkqpu'uwdo kwgf "d{ 'Crrnlecpvu'y j kej "f q"pqv'eqpvckp"f gvcknu'qh'vj g'Crrnlecvkqp'Co qwpv'cpf "vj g"dcpm'ceeqwpv' f gvcknu'l'WRKKF 'kp'vj g'Crrnlecvkqp"Hqto ="
- $e0 \quad Cr\, r\, \text{neckqpu'uwdo kwgf "qp"c"r}\, \text{rckp"r}\, \text{cr}\, \text{gt} = "$
- f 0 Crrnlecvkqpu'uwdo kwgf "d{"TgwckilKpf kxkf wcn'Crrnlecpwi'wukpi "y g"WRKO gej cpkuo "y tqwi j "cp"UEUDu'cpf "I'qt"wukpi "c" o qdkrg"crrnlecvkqp"qt"WRKJ cpf rg. "pqv'nkurgf "qp"y g'y gdukwg"qh"UGDK="
- g0 Crrnkecvlqpu"wpfgt"yjg"WRK'nlpngf"Ogejcpluo "uwdokwgf"d{"Tgvckn'Kpfkxkfwcn'Crrnkecpvu"wukpi "yjktf"rctv{"dcpm'ceeqwpvu'qt'wukpi "c'yjktf'rctv{"kpngf'dcpm'ceeqwpv'WRKKF"*uwdlgev'vq"cxckncdknk/"qh'kphqtocvlqp'tgictfkpi "yjktf'rctv{"ceeqwpv'htqo"Urqpuqt"Dcpm="
- $\label{thm:continuous} \begin{tabular}{ll} \begin{tabular}{ll}$
- i 0 Crrnlecvkqp"uwdo kwgf "y kij qww"y g"uki pcwtg"qh"yi g"Hktuv"Crrnlecpv"qt"uqng"Crrnlecpv="
- j 0 Vj g'CUDC'Hqto 'pqv'dgkpi 'uki pgf 'd{ 'vj g'ceeqwpv'j qrf gtu.'kh'vj g'ceeqwpv'j qrf gt'ku'f kthgtgpv'htqo 'vj g'Crrnkecpv='
- 10 CUDC"Hqto "d{"'yj g'T KKu"d{'wukpi ''yj ktf'r ctv{ "dcpm'ceeqwpwu"qt"wukpi ''yj ktf'r ctv{ "hpmgf "dcpm'ceeqwpv'WRKKF u="
- 10 Crrnlecvlqpu'd{"r gtuqp"hqt"y j qo "RCP"f gvcknu"j cxg"pqv'dggp"xgtkhlgf "cpf" y j qug"dgpghlekct{"ceeqwpvu"ctg"::uwur gpf gf" hqt"etgf kwlp"vgto u"qh"UGDKektewrct"*tghgtgpeg"pwo dgt<"EKT 10 TF IF R1"44"14232+"f cvgf "Lwn("4; ."4232="
- m0 I KT "pwo dgt "hwt pluj gf "kpurgef "qh"RCP ="
- n0 Crrnlecvkqp"d{"Tgvckn"Kpf kxkf wcn'Crrnlecpwi'y kyj "Crrnlecvkqp"Co qwpv'hqt"c"xcnwg"qh'o qtg"yj cp" "4.22.2221/"
- o 0 Crrnlecvkqpu'd { 'r gtuqp'y j q'ctg'pqv'grki kdrg'vq'ces wktg'Gs wkv{ 'Uj ctgu'kp'vgto u'qh'cm'crrnlecdrg'rcy u.'twrgu.'tgi wrcvkqpu.'' i wkf grkpgu''cpf ''crrtqxcn="
- $p0 \quad Crr \text{ rleckqpu''d} \{ \text{"Crr rlecpw''ceeqo r cpkgf''d} \{ \text{"ej gs wgu."f go cpf''f tchw."uvqen'lkpxguv."o qpg} \{ \text{"qtf gt."r quvcn'qtf gt''qt''ecuj} = \text{"eq properties of the propertie$
- q0 Crrnkecklqpu'wrnqcf gf "d{"S iDu"chgt"602"r 0o 0'qp"vj g"S iD"Kuwg"Enqulpi "F cvg"cpf "d{"P qp/Kpurkswklqpcn'Crrnkecpvu" wrnqcf gf "chgt"6022"r 0o 0'qp"vj g"Kuwg"Enqulpi "F cvg."cpf "Crrnkecklqpu"d{"T gvckn'Kpf kxkf wcn'Crrnkecpvu"wrnqcf gf "chgt" 7022"r 0o 0'qp"vj g"Kuwg"Enqulpi "F cvg."wpnguu"gz vgpf gf "d{"vj g"Uvqem'Gzej cpi gu="cpf"
- r0 Crrnkecvkqp''d{''QED0'

KUWCPEG'QH'C'EQPHKTO CVKQP'QH'CNNQECVKQP'PQVG'*6ECP6+'CPF'CNNQVO GPV'KP'VJ G'KUWG''

- Wr qp"crrtqxcn'qh"yi g"dcuku"qh"cmqvo gpv'd{"yi g"F guki pcvgf "Uvqem'Gzej cpi g."yi g"Ngcf "O cpci gt"qt"T gi kuvtct"vq"yi g" Kuwg"uj cm'ugpf "vq"yi g"UEUDu'c"nkuv'qh'yi gkt 'Crrnecpw'y j q"j cxg"dggp"cmqecvgf "Gs wkv{"Uj ctgu'lxp"yi g"Kuwg0'
- d0 Vj g'Tgi kıntct"y km'y gp"f kur cvej "c'ECP "vq"y gkt 'Crrnkecpvu'y j q"j cxg"dggp"cmqecvgf 'Gs wkx{ "Uj ctgu'kp"y g"Kuwxg0'V j g" f kur cvej "qh'c'ECP "uj cm'dg"f ggo gf "c'xcnkf."dkpf kpi "cpf "kttgxqecdng"eqpvtcev'hqt 'vj g'Crrnkecpv0'

GS WKV['UJ CTGU'KP'FGO CVGTKCNK, GF'HQTO'Y KVJ 'PUFN'QT'EFUN''

Vq"gpcdrg"cm'uj ctgj qrf gtu"qh''yj g"Eqo r cp{"vq"j cxg"yj gkt"uj ctgj qrf kpi "kp"grgextqpke"hqto ."vj g"Eqo r cp{"j cf "uki pgf "vj g"hqmy kpi "vtkr ctvksg"ci tggo gpvu"y kyj "vj g"F gr qukqtkgu"cpf "vj g"T gi kuntct"cpf "Uj ctg"Vtcpulrgt"Ci gpv<"

c"\tkrct\kg"ci tggo gp\"f c\gf "Qe\qdgt"33."4245"y kj "P UF N."qwt"Eqo r cp{ "cpf "Tgi kıntct"\q"\j g"Kınwg=" c"\tkrct\kg"ci tggo gp\"f c\gf "Qe\qdgt"33."4245"y kj "EF UN."qwt"Eqo r cp{ "cpf "Tgi kıntct"\q"\j g"Kınwg=" c"\tkrct\kg"ci tggo gp\"f c\gf" "Qe\qdgt"33."4245"y kj "EF UN."qwt"Eqo r cp{ "cpf "Tgi kıntct"\q"\j g"Kınwg=" "

...



Vj g'Eqo r cp{øu'uj ctgu'dgct'cp'KUKP 'KP G2T K\$ 232350'

Cp"crrnlecpv'crrn[kpi 'hqt'Gs wkw["Uj ctgu'kp"f go cv'hqto 'o wuv'j cxg"cv'hgcuv'qpg"dgpghkekct["ceeqwpv'y k.j "yj g'F grqukvqt[""

 $\label{eq:control_problem} Rct \textit{kekr}\ cpw''qh''gkj\ gt''P\ UF\ N''qt''EF\ UN''r\ tkqt''vq''o\ cmkpi\ ''yj\ g''cr\ r\ n'ecvkqp0'$

Vj g"crrnlecpv'o wuv'pgeguuctkn{ "hkml'kp" vj g"f gvcknu" kpenwf kpi "vj g"Dgpghkekct{ "Ceeqwpv'P wo dgt"cpf "F grqukxqt{ "Rctvkekrcpvxu" Kf gpvkhkecvkqp"pwo dgt+"crrgctkpi "kp" vj g"Crrnlecvkqp"Hqto "qt"Tgxkukqp"Hqto 0'

 $Gs \ wkw \ "Uj \ ctgu" \ cmqwgf \ "vq" \ c"uweeguuhwri'cr r r kecpv'y \ kmi'dg" etgf \ kwgf \ "kp" gngevtqpke "hqto \ "f \ ktgevn \ "vq" vj \ g" Cr r r kecpv'w \ dgpghkekct { "ceeqwpv'*y kyj ''vj g'F gr qukqt { 'Rctvkekr cpv+0' } }$

P co gu'lp''yj g''Crrrlecvkqp''Hqto ''qt''Tgxkukqp''Hqto ''uj qwrf''dg'kfgpvkecn'vq''yj qug''crrgctkpi ''lp''yj g''ceeqwpv'fgvcknu'lp''yj g''

 $F \ gr \ qukqt \{0'kp''ecug''qh''lqkpv''j \ qrf \ gtu.''vj \ g''pco \ gu''uj \ qwrf \ ''pgeguuctkn' (''dg''kp''vj \ g''uco \ g''ugs \ wgpeg''cu''vj \ g''cr \ r \ gct''kp''vj \ g''ceeqwpv'' \ f \ gvcknu'kp''vj \ g''F \ gr \ qukqt \{0'''vj \ g''vj \ g''vj$

Ki'kpeqorngvg"qt"kpeqttgev'f gwknu"ctg"i kxgp"wpf gt"vj g"j gcf kpi "÷Crrnkecpwi'F grqukxqt{"Ceeqwpv'F gwknuø'kp"vj g"Crrnkecvkqp" Hqto "qt"Tgxkukqp"Hqto."kv'knu'nkcdng'vq"dg'tglgevgf 0"

 $\label{thm:continuity:continuit$

Ki'o c{"dg"pqvgf"vj cv'Gs wkx{"Uj ctgu"kp"grgevtqpke"hqto "ecp"dg"vtcf gf "qpn{"qp"vj g"uvqeni'gzej cpi gu"j cxkpi "grgevtqpke" eqppgevkxkx{"y kvj "P UF N"cpf "EF UNOVj g"Uvqeni'Gzej cpi g'r rcvhqto "y j gtg"qwt "Gs wkx{ "Uj ctgu"ctg"r tqr qugf "vq"dg"nkuvgf "j cu" grgevtqpke"eqppgevkxkx{"y kvj "EF UN"cpf "P UF NO'j +"Vj g"vtcf kpi "qh"vj g"Gs wkx{ "Uj ctgu"qh"qwt "Eqo r cp{ "y qwrf "dg"qpn{ "kp" f go cvgtkcnk} gf "hqto 0'

EQOOWP KE CVKQPU'

Cnihwwtg"eqo o wpłeckqpu"kp"eqppgekqp"y kaj "Crrneckqpu"o cfg"kp"y ku"Kuwg"uj qwrf "dg"cfftguugf "vq"yjg" kutct"vq"yjg" Kuwg"s wqkpi "yjg"hwni'pcog"qh"yjg"uqng"qt"Hktuv"Crrnecpv."Crrneckqp"Hqto"pwodgt."Crrnecpvu"Fgrqukqt{"Ceeqwpv"Fgvknu."pwodgt"qh"Gswkv{"Ujctgu"crrnkgf"hqt."fcvg"qh"Crrnecvkqp"hqto."pcog"cpf"cfftguu"qh"yjg"Dcpngt"vq"yjg"Kuwg"yjgtg" yjg"Crrnecvkqp"y cu'uwdokwgf"cpf"c"eqr{'qh"yjg"cenpqyngfigogpv"unkr0"

Kpxguvqtu'ecp'eqpvcev'ij g'Eqornkcpeg'Qhhkegt''qt''ij g'Tgi kuvtct'vq'ij g'Kuuwg'kp''ecug''qh''cp{''r tg''Kuuwg''qt''r quv'Kuuwg''tgrcvgf''r tqdrgo u''uwej ''cu''pqp/tgegkrv'qh''rgwgtu''qh''crrqvo gpv.''etgfkv'qh''crrqwgf''uj ctgu''kp''ij g''tgurgevkxg''dgpghkekct{''ceeqwpvu.''gve0'cv''dgrqy''o gpvkqpgf''cfftguugu=''

Vq"

O u0J ggpcnJ kyguj "Tcvj qf ."

Eqo rcp{'Ugetgvct{'cpf'Eqo rncpeg'Qhhegt'''

Cuj wk' Mj cpdgtkc" O cj guj wrc" NR" 421: 5168." Mqmrwc." Xkxgnrpcpf cr wt." Uqwj " 46" Reti cpcu." Vj cmwtr wnwt " O cj guvqrc/922363"Y guv'Dgpi cn''Kpf kc0"

Vgn<- "; 3"; : 52659923"

Go chreuB cuuqelevgf eqcvgtuUp"

Y gduksg<'y y y 0cuuqekcygf eqcygtu0kp"

Vq'vj g'Tgi kmtct'vq'vj g'Kumg'' Dki uj ctg'Ugtxkegu'Rtkscvg'Nko kvgf''

U8/4.'8^{ij} "Rkppcerg' Dwukpguu' Rctm' O cj cncrk' Ecxgu' Tqcf." pgzv'' vq" Cj wtc" Egpvtg. "Cpf j gtk' Gcuv." O wo dck' "6222; 5." O cj ctcuj vtc. "Kpf kc"

VgiPq0:; 3"6"44"6"8485": 422**:'Hcz'Pq0**:; 3"6"44"6"8485": 4; ; ""

G/o ckr≮'

G/o cknckrqB dki uj ctgqprkpg@qo"

Kpxguvqt" I tlgxcpeg"

kpxguvqtB dki uj ctgqprkpg@eqo "

Y gdukg<'y y y 0dki uj ctgqprkpg0eqo " Eqpvcev'Rgt uqp<'O t0'Xkpc{cm'O qtdcrg'''

UGDKT gi kwt cvkqp'P q0≮'R T2222235: 7"

EIP<"W;;;;;OJ3;;6RVE298756"

FILTRQUEN'QH'CRRNIE CVIQPU'CPF'CRRNIE CVIQP'O QPG[U'CPF'IPVGTGUV'IP'ECUG'QH'FGNC["

Vj g"Eqo r cp{"uj cm'gpuwtg"yj g"f kur cvej "qh'Cmqvo gpv'cf xkeg."kpuvtwevkqpu"vq"UEUDu"cpf "i kxg"dgpghkk'vq"yj g"dgpghkekct{" ceeqwpv'y kyj 'F gr qukqt{ "Rctvkekr cpvu'cpf 'uwdo kv'yj g'f qewo gpvu'r gtvckpkpi "vq"yj g'Cmqvo gpv'vq"yj g"Uqem'Gzej cpi g'y kyj kp" qpg'y qtmkpi "f c{ 'qh'yj g"f cvg"qh'Cmqvo gpv'qh'Gs wkv{ 'Uj ctgu0'

Vj g" Eqo r cp{" uj cm" o cng" dguv" ghhqtvu" vj cv" cm" uvgr u" hqt" eqo r ngvkqp" qh" vj g" pgeguuct{" hqto cnkkgu" hqt" nkuvkpi " cpf " eqo o gpego gpv"qh"vtcf kpi "cv"UO G"Rncvhqto "qh"DUG"Nko kgf "y j gtg"yj g"Gs vkk{ "Uj ctgu"ctg"r tqr qugf "vq"dg"nkuvgf "ctg"vcngp" y kyj kp"8" vkz +'y qtmkpi "f c{u"qh"enquvtg"qh"yj g"kuvvg0'

...



DCURUQH'CNNQVO GPV"

М

Cmqvo gpv" y km" dg" o cf g" kp" eqpuwncvkqp" y knj " DUG" Nko ksgf " *Vj g" F guki pcvgf " Uvqem" Gzej cpi g+0' Kp" vj g" gxgpv" qh" qxgtuwduetkr vkqp. "vj g"cmqvo gpv"y km"dg"o cf g"qp"c"r tqr qtvkqpcvg"dcuku"kp"o ctmgvcdrg"myu"cu"ugv"hqtvj "j gtg<"

 $Vj g''qvcn''pwo dgt''qh''Uj ctgu''vq''dg''cmqecvgf ''vq''gcej ''ecvgi qt \{'cu''c'y j qng''uj cm''dg''cttkxgf ''cv''qp''c''r tqr qtvlqpcvg''dcuku''klg0'vj g'' vqvcn''pwo dgt''qh''Uj ctgu''cr r nkgf ''hqt''kp''vj cv''ecvgi qt {''o wnkr nkgf ''d {''vj g''kpxgtug''qh''vj g''qxgt''uwduetkr vkqp''tcvkq''*pwo dgt''qh'' cr r nkecpwi'kp''vj g''ecvgi qt {''z''pwo dgt''qh''Uj ctgu''cr r nkgf ''hqt+0''}$

Vj g"pwo dgt"qh"Uj ctgu"\q"dg"cmqecvgf "\q"vj g"uweeguuhwn'cr r nlecpvu'y km'dg"cttkxgf "cv'qp"c"r tqr qt√kqpcvg"dcuku'lp"o ctngwcdrg" nqui™l@0Vqvcn'pwo dgt"qh'Uj ctgu"cr r nlegf "hqt"kpvq"vj g"kpxgtug"qh'vj g"qxgt"uwduetkr √kqp"tc√kq-10'

Hqt"crrnlecvkqpu"y j gtg"yj g"rtqrqtvkqpcvg"cmqvo gpv"y qtmu"qwv"vq"rguu"yj cp"] _"gs wkx{ "uj ctgu"yj g"cmqvo gpv"y km"dg"o cf g"cu" hqmqy u<"

Gcej 'luweeguulhwrl'cr r rkecpv'luj cml'dg''cmqwgf ''] _'gs wkw{ 'luj ct gu='cpf ''

 $\label{eq:control_vi_g} Vj\ g"uweeguuhwn'cr\ r\ rkecpuu''qh''yj\ g"vqvcn'cr\ r\ rkecpuu''hqt''yj\ cv''ecvgi\ qt\ \{ "uj\ cm''dg"f\ gvgto\ kpgf\ "d\ "vj\ g"f\ tcy\ cn''qh''uy'' p''uwej\ "c"\ o\ cppgt"'yj\ cv''yj\ g"vqvcn''pwo\ dgt "qh''Uj\ ctgu''cuqwgf\ "kp''yj\ cv''ecvgi\ qt\ \{ "ku''gs\ wcn''vq''yj\ g"pwo\ dgt"qh''Uj\ ctgu''y\ qtngf\ "qw''cu''r\ gt'''*4+''\ cdqxg0'$

 $\label{eq:kijg} \textbf{Ki'j} g''Uj ctgu''cmqecvgf "qp"c"rtqrqtvlqpcvg"dcuku"vq"cp{"ecvgi qt{"ku"o qtg"yi cp"yi g"'Uj ctgu''cmqwgf "vq"yi g"crrrlecpvu"kp"yi cv' ecvgi qt{."yi g"dcmpeg"cxckmcdrg"Uj ctgu''hqt"cmqecvlqp"uj cm'dg"hktuv'cf lwngf "ci ckpuv'cp{"ecvgi qt{."yi gg"cmqwgf "Uj ctgu" ctg"pqv"uwhhkekgpv"hqt"rtqrqtvlqpcvg"cmqwo gpv"vq"yi g"uweeguuhwi'crrrlecpvu"kp"yi cv'ecvgi qt{."yi g"dcmpeg"Uj ctgu."kh"cp{."tgo ckpkpi "chwgt "uwej "cf lwnwo gpv"y kni'dg"cf f gf "vq"yi g"ecvgi qt{"eqo rtkukpi "qh'crrrlecpvu"crrrl{kpi "hqt"yi g"o kpko wo "pwo dgt" qh'Uj ctguU'} ctguU'$

Ukpeg'r tgugpv'kuuwg'ku'c'hkzgf 'r tkeg'kuuwg. 'vj g'cmqecvkqp'kp'vj g'pgv'Kuuwg'vq'vj g'r wdrke'ecvgi qt { 'kp'\gto u'qh'Tgi wrcvkqp''475*4+" qh'vj g'UGDK*KEFT+**Co gpf o gpv+'Tgi wrcvkqpu. ''423: 'uj cm'dg'o cf g'cu'hqmqy u=''

*c+0'o kpko wo "hkhv("r gt"egpv0'vq"tgvckrlkpf kxkf wcrlkpxguvqtu="cpf"

*d+0tgo clplpi '\q<'

k#lpf kxlf wcn'cr r necpw'qyj gt''yj cp''tgvckn'lpf kxlf wcn'lpxguvqtu="cpf"

 $\label{thm:like} \verb|kk+| qv| gt | kpxguvqtu | kpenwf | kpi | 'eqtr qtcvg' | dqf | kgu' qt '| kpvkwwkqpu. 'kttgur gevkxg' qh' 'vj g' pwo dgt 'qh' Gs wkw{ ''Uj ctgu' cr r rkgf '| hqt='' | kk+| qv| gt '| kpxguvqtu' | kpenwf | kpi | 'eqtr qtcvg' | dqf | kgu' qt '| kpvkwwkqpu. 'kttgur gevkxg' qh' 'vj g' pwo dgt 'qh' Gs wkw{ ''Uj ctgu' cr r rkgf '| hqt='' | kk+| qv| gt '| kpxguvqtu' | kpxguvqtu' | kpvkwwkqpu. 'kttgur gevkxg' qh' 'vj g' pwo dgt 'qh' Gs wkw{ ''Uj ctgu' cr r rkgf '| hqt='' | kk+| qv| gt '| kpxguvqtu' | kpxguvqt$

 $Rtqxkf gf "ij cv'ij g"wpuwduetkdgf "r qtvkqp"kp"gksj gt "qh"ij g"ecvgi qtkgu"ur gekhkgf "kp"encwugu""c+"qt""d+"o c{ "dg"cmqecvgf "vq"cr r necpvu" kp"ij g"qvj gt "ecvgi qt{0'}$

 $\textbf{Gzrncpcvkqp} < \textbf{Ki'vj} \ g'tgvckn'lopf kxkf wcn'lopxguvqt''ecvgi \ qt \{ \text{'ku'gpvkngf''vq''o qtg''vj cp''hklnv{''r gt''egpv'vqh''vj g''pgv'knuwg''uk| g''qp''c'' r tqr qtvkqpcvg''dcuku.''vj g''tgvckn'lopf kxkf wcn'lopxguvqtu''uj cm'dg''cnqecvgf ''vj cv'j ki j gt''r gtegpvci g0'' }$

Rrgcug'pqvg''y cv'y g'Cmqvo gpv''q"gcej "Tgvckri'kpf kxkf wcn'Kpxguvqt"uj cmi'pqv'dg''rguu''y cp''y g''o kpko wo "crrrkecvkqp"iqv.''uwdlgev' vq''cxckredktkv{ "qh''Gs wkv{ "Uj ctgu."kh''cp{ "kp''Tgvckri'r qtvkqp0'Vj g''tgo ckpkpi "cxckredng''Gs wkv{ "Uj ctgu."kh''cp{ "kp''Tgvckri'r qtvkqpp''uj cm'' dg" cmqwgf " qp" c" r tqr qtvkqpcvg" dcuku" vq" Tgvckri' Kpf kxkf wcni' Kpxguvqt" kp" yj g" o cppgt" kp" yj ku" r ctc" vkxrgf " õDCUKU" QH' CNNQVO GP Vö0'

õT geckrilfof kalf werilfoxguvqtö"o gepu"ep "kpxguvqt"y j q"er r rkgu"hqt"uj etgu"qh"xenwg"qh"pqv"o qtg"yj ep" 4.22.2221/0lfoxguvqtu"o e{" pqvg"yj ev'kp"eeug"qh"qxgt "hwduetkr vkqp"emqvo gpv"uj em'dg"qp"r tqr qt vkqpevg"deuku"epf "y km'dg"hkperk| gf "kp"eqpuwnevkqp"y kij "vj g"
UO G"Rrevhqto "qh"DUG"Nko kgf 0'

KP UVT WE VKQP U'HQT'E QO RNGVKP I 'VJ G'CRRNKE CVKQP 'HQTO''

"

Kp"cffkkqp"vq"yi g"kpurtwevkqpu"hqt"eqo r ngvkpi "yi g"Crrnkecvkqp"Hqto "rtqxkfgf"kp"yi g"uwd/ugevkqp"õI gpgtcn'Kphqto cvkqp" F qewo gpv'hqt'Kpxguvkpi "kp'Rwdnke'Kuwg"ó'Crrn(kpi "kp"yi g"Kuwg"ó'Kpurtwevkqpu'hqt'hknkpi "yi g'Crrnkecvkqp"Hqto ö'Crrnkecvkqp"Hqto ö'Crrnkecvkqp"tgs wguvgf "vq"pqvg"yi g"cffkkkqpcn'hpurtwevkqpu'rtqxkfgf "dgnqy 0'

3+ Vj wo d'ko'r tguukqpu'cpf 'uki pcwtgu'qvj gt''vj cp'kp''vj g'hcpi wci gu'ur gekhkgf 'kp''vj g'Gki j vj 'Uej gf wrg'kp''vj g'Eqpunkswkqp''qh''
Kpf kc''o wuv''dg''cwguvgf "d{"c''O ci kuntcvg''qt"c''P qvct{"Rwdrke''qt"c''Ur gekcn'Gzgewkxg''O ci kuntcvg''wpf gt''qhhkekcn'ugcn0'



Crrnleckqpu'o ww'dg'kp'ukpi ng'pco g'qt'kp'lqkpv'pco gu'*pqv'o qtg'ij cp'ij tgg."cpf 'kp'ij g'uco g''qtf gt''cu'ij gkt'F gr qukqt{"
Rctvlekr cpv'f gvckn+0'

- 4+ Crrnlecvkqpu"o ww'dg"o cf g"kp"c"ukpi ng"pco g"qt"kp"lqkpv'pco gu"*pqv'o qtg"vj cp"vj tgg."cpf "kp"vj g"uco g"qtf gt"cu"vj gkt" f gvcknu"crrgct"y kyj "vj g"F grqukqt { "Rctvkekrcpv+."cpf "eqorngvgf "kp"hwm"kp"DNQEM"NGVVGTU"kp"GPINKUJ "cpf "kp" ceeqtf cpeg'y kyj "vj g"kpuvtwevkqpu"eqpvckpgf "kp"vj g"Rtqurgewwi"cpf "kp"vj g"Crrnlecvkqp"Hqto 0'
- 5+ Cr r necvkapu 'ap''c'tgr cvtkcvkap 'dcuku'uj cm'dg'kp''y g'pco gu''qh'HKKu''qt'HRKu''dw''pqv'kp''y g'pco gu''qh'o kpqtu. 'QEDu. 'hkto u'' qt''r ctvpgtuj kr u''cpf 'hqtgki p''pcvkapcnu0'

FGUN PCVGF'FCVG'CPF'CNNQVOGPV"

- c+ Qwt"Eqorcp{"y kml'gpuwtg" yi cv" yi g"Cmqvo gpv"cpf "etgf kv" vq" yi g"uweeguuhwrl'Crrnkecpvuø'f grqukxct{"ceeqwpv"y kml'dg" eqorngvgf "y kyi kyi ky"ukz"Y qtmkpi "Fc{u."qt"uwej "rgtkqf"cu"oc{"dg"rtguetkdgf"d{"UGDK"qhl'yi g"Kuwg"Enqukpi "Fcvg"qt"uwej "qyi gt"rgtkqf"cu"oc{"dg"rtguetkdgf0"
- $d+ \quad Gs \text{ wks("Uj ctgu"y km'dg"kuwgf "cpf "Cmqvo gpv"uj cm'dg"o cfg"qpn("kp"yj g"f go cvgtkcnkugf "hqto "vq"yj g"Cmqwggu0")} \\$
- e+ Cmqwggu''y km'j cxg''y g''qr vkqp''vq''tg/o cvgtkcnkug''y g''Gs wkx{ "Uj ctgu''uq''cmqwgf "cu''r gt''y g''r tqxkukqpu''qh'y g''Eqo r cpkgu'' Cev.''4235''cpf ''y g'F gr qukxqtkgu''Cev0''

PCO GU'QH'GP VKVKGU'T GURQP UKDNG'HQT'HKP CNKURP I 'VJ G'DCUKU'QH'CNNQVO GP V'KP'C'HCKT'CPF'' RTQRGT'O CPPGT''

Vj g'cwij qtkugf 'go r nq{ggu'qh'\j g'F guki pcvgf 'UvqentGzej cpi g."cmpi 'y kj '\j g'NO 'cpf '\j g'Tgi kuvtct'\q'\j g'Kuwg.'\ij cnt'gpuwtg'' yj cv'\j g"Dcuku'qh'Cmqvo gpv'ku'hkpcnkugf 'kp''c'hckt''cpf 'r tqr gt 'o cppgt 'kp''ceeqtf cpeg'y kj ''\j g'r tqegf wtg''ur gekhkgf ''kp''UGDK KEFT'Tgi wrcvkqpu0'

O GVJ QF 'QH'CNNQVO GP V'CUO C['DG'RTGUETKOGF 'D['UGDKHTQO 'VKO G'VQ'VKO G'''

Qwt"Eqo r cp{"y kni'pqv'o cng"cp{"Cmqvo gpv'lp"gzeguu'qh''y g"Gs wkx{"Uj ctgu''y tqwi j "y g"Qhtgt"F qewo gpv'gzegr v'lp"ecug"qh'' qxgt/uwduetkr vkqp"hqt"y g"r wtr qug"qh'tqwpf kpi "qhh''q"o cng"cmqvo gpv."kp"eqpuwncvkqp"y kyj "y g"F guki pcvgf "Uvqeni'Gzej cpi g0' Hwtyj gt."wr qp"qxgt/uwduetkr vkqp."cp"cmqvo gpv'qh"pqv'o qtg"y cp"qpg"r gt"egpv'qh'y g"Kuwg"o c{"dg"o cf g"hqt"y g"r wtr qug"qh" o cmkpi "Cmqvo gpv'lp"o kpko wo "nqvu0"

 $Vj\ g''cmqvo\ gpv'qh'Gs\ wk\ \ 'Uj\ ctgu'\ 'q''cr\ r\ decpw'\ 'q'\ i'j\ cp''\ 'q''\ j\ g''Tgvckn'Kpf\ kxkf\ wcn'Cr\ r\ decpw'\ i'j\ cm'dg''qp''c''r\ tqr\ qt\ kqpcvg''dcuku''\ y\ kj\ kp''j\ g''tgur\ gevkxg''kpxguvqt''ecvgi\ qt\ kgu''cpf''j\ g''pwo\ dgt''qh''ugewtkkgu''cmqvgf''uj\ cm''dg''tqwpf\ gf''qh''vq''j\ g''pgctguv''kpvgi\ gt.''\ uwdlgev''q''o\ kpko\ wo\ ''Cmqvo\ gpv''dgkpi\ ''gs\ wcn''q''j\ g''o\ kpko\ wo\ ''cr\ r\ decvkqp''uk\ g''cu''f\ gygto\ kpgf''cpf'''f\ knemqugf\ 0'$

Vj g"cmqvo gpv'qh''Gs wkx{ "Uj ctgu''vq"gcej "TgvckrlKpf kxkf wcrl'Crrrhecpvu''uj cm'pqv'dg"nguu''yj cp''yj g"o kpko wo "dkf ''nqv.''uwdlgev'vq" yj g"cxckrcdkrkx{ "qh''uj ctgu''kp'TgvckrlKpf kxkf wcrl'Crrrhecpvu''r qt vkqp."cpf "yj g"tgo ckpkpi "cxckrcdrg''Gs wkx{ "Uj ctgu."kh''cp{ ."uj cm' dg"cmqwgf "qp"c'rtqrqtvkqpcvg"dcuku0""

KO RGTUQP CVKQP"

 $\label{thm:condition} Cwgpvkqp"qh"yj~g"Crrnkecpw"ku"ur~gekhkecm("ftcy~p"vq"vj~g"rtqxkukqpu"qh"uwd/ugevkqp"*3+"qh"Ugevkqp"5: "qh"vj~g"Eqo~rcpkgu"Cev."~y~j~ku"tgrtqfwegf"dgmy<"$

 $\tilde{o}Cp\{\,\hbox{\it ''r gtuqp''y j q<''}$

- c+ o cngu"qt"cdgxu"o cmkpi "qh"cp"crrnkeckqp"kp"c"hkekkkqxu"pco g"vq"c"eqo r cp{"hqt"ces wktkpi ."qt"uwduetkdkpi "hqt."kxu" ugewtkkgu="qt"
- d+ o cngu"qt"cdgxu"o cmkpi "qh"o wnkr ng"cr r nkecxkqpu"vq"c"eqo r cp { "kp"f khhgtgpv"pco gu"qt"kp"f khhgtgpv"eqo dkpcxkqpu"qh"j ku" pco g"qt"uxtpco g'hqt"ces wktkpi "qt"uxduetkdkpi "hqt"kxu"ugewtkkgu="qt""
- e+ Qyi gty kug"kpf wegu"f ktgevn{ "qt"kpf ktgevn{ "c"eqo r cp{ "vq"cmqv"qt"tgi kuvgt"cp{ "vtcpuhgt"qh "ugewtkkgu"vq"j ko ."qt"vq"cp{ "qyi gt"r gtuqp"kp"c'hkevkkqvu"pco g."uj cm'dg"hcdrg'hqt"cevkqp"wpf gt"Ugevkqp"669ö""

Vj g"rkcdkrkv{ "r tguetkdgf "wpf gt" Ugevkqp" 669" qh''y j g" Eqo r cpkgu' Cev. "4235" kpenwf gu'ko r tkuqpo gpv'hqt" c''ygto "y j kej "uj cm' pqv' dg" nguu''y cp" ukz "o qpyj u''gzvgpf kpi "wr "vq" 32" { gctu''* r tqxkf gf "vj cv'y j gtg" y j g''htcwf "kpxqnxgu'r wdrke 'kpvgtguv. "uwej "vgto "uj cm'



pqv'dg"rguu"yj cp"yj tgg"{ gctu+"cpf "hkpg"qh"cp"co qwpv'pqv'rguu"yj cp"yj g"co qwpv'lkpxqrxgf "kp"yj g"htcwf."gzvgpf kpi "wr "vq"yj tgg" vko gu"qh'uwej "co qwpv0'

WPFGTVCMIPI 'D['QWT'EQORCP["

Qwt'Eqo r cp{ 'wpf gt vcngu'yj g'hqnqy kpi <'

Ki'qwt "Eqorcp{"fqgu"pqv"rtqeggf"y knj "vj g"Knuwg"chwgt"vj g"Knuwg"Empukpi "Fcvg"dwv"dghqtg"cmqvo gpv."vj gp"vj g"tgcuqp" vj gtgqh"uj cm'dg"i kxgp"cu"c'r wdrke "pqvkeg"y knj kp"vy q"fc{u"qh"vj g"Knuwg"Empukpi "Fcvg"dwv"dghqtg"cmqvo gpv."vj gp"vj g"tgcuqp" kp"vj g"tgcudp" i kxgp"cu"c'r wdrke "pqvkeg"uj cm'dg"knuwgf" kp"vj g"uco g"pgy ur cr gtu"y j gtg"vj g"rtg/ "Knuwg"cfxgtvkugo gpvu"y gtg"r wdrkuj gf 0Vj g"uvqemlgzej cpi gu"qp"y j kej "vj g"Gs wkx{" Uj ctgu"ctg"rtqr qugf "vq"dg"knuvgf "uj cm'cnuq"dg"kphqto gf "rtqor vn{="

d0 Vj cv" vj g" eqo r nckpvu" tgegkx gf "kp" tgur gev" qh" vj g" Kuuwg" uj cm" dg" cwgpf gf " vq" d $\{$ " vj g" Eqo r cp $\{$ "gzr gf kkqwun $\{$ "cpf" ucvkuhce vqt kn $\{$ ="

e0 Vj cv'cm'uvgr u'hqt "eqo r ngvkqp"qh'vj g"pgeguuct { "hqto cnkvkgu"hqt "nkuvkpi "cpf "eqo o gpego gpv'qh'vtcf kpi "cv'cm'vj g"Uvqem' Gzej cpi gu'y j gtg'vj g'Gs wkx{ "Uj ctgu"ctg"r tqr qugf "vq"dg"nkuvgf "ctg"vcngp"y kxj kp"ukz "Y qtmkpi "F c { u"qh'vj g"Knuvg"Enqukpi "F cvg"qt 'uwej "qvj gt"r gtkqf "cu"o c { "dg"r tguetkdgf ="

f 0 Kil'Cnqvo gpv'ku"pqv'o cf g."cr r necvkqp"o qpkgu"y km'dg"tghwpf gf "T'wpdmengf "kp"yi g"CUDC"Ceeqwpvu"y kyi kp"yi g"vko g" r tguetkdgf "wpf gt"cr r necdng"ncy "qt"uwej "nguugt"vko g"cu'ur gekhlef "d{"UGDK'hckrkpi "y j kej "kpvgtguv'y km'dg"f wg'vq"dg"r ckf " vq"yi g'Cr r necpvu"cv'yi g"tcvg"qh'37022' "r gt"cppwo "hqt"yi g"f grc{gf "r gtkqf="

g0 Vj cv'y j gtg'tghwpf u''*vq''y g''gzvgpv'crrnecdng+''ctg''o cf g''y tqwi j ''gngevtqple''tcpultgt''qh'hwpf u.''c''uwkcdng''eqo o wplecvlqp''
uj cm'dg''ugpv''q''y g''crrnecpv'y ky ky ky ''y g''ko g''rtguetklgf''wpf gt''crrnecdng''ncy.''i kxkpi ''f gvcknu'qh''y g''dcpni'y j gtg''tghwpf u''
uj cm'dg''etgf kyf ''cnpi ''y ky ''y g''co qwpv'cpf ''gzrgevgf ''f cvg''qh''gngevtqple''etgf ky'hqt''y g''tghwpf =''

10 Vj cv" vj g"Rtqo qvgtuø" eqpvt kdwkqp" kp" hwm "kh" cr r nkecdng. "uj cm" dg" dtqwi j v" kp" cf xcpeg" dghqtg" vj g" Kuwg" qr gpu" hqt "uwduet kr vkqp"

i 0 Vj cv'hwpf u'tgs wktgf "hqt"o cmkpi "tghwpf u'vq"wpuweeguuhwn'cr r necpvu'cu'r gt"o qf g*u+'f kuenqugf "uj cm'dg"o cf g"cxckrcdrg" vq"yj g"Tgi kuxtct"vq"yj g"Kuwg"d{"yj g'Eqo r cp{="

 $\label{eq:control_problem} \begin{array}{ll} j \ 0 & P \ q'' hwt \ y' \ gt'' Kuwg'' qh'' Gs \ wkw \ \{ ''U \ ctgu'' uj \ cm'' dg'' o \ cf \ g'' wp \ wh' \ y' \ g'' Gs \ wkw \ \{ ''U \ ctgu'' qh \ gt' \ tqwi \ j \ ''y \ g'' Rt qur \ gewu'' ctg'' hungf ''qt'' \ wp \ wh' \ y' \ g' C \ L' Ceeq \ wp \ w'' qp'' ceeq \ wp' \ qh'' pqp' nkuw \ pi \ .''wpf \ gt' uw \ duet \ kr \ wp \ gwe \ B''' \ g'' C \ UDC'' Ceeq \ wp \ w'' \ qp'' \ ceeq \ wp \ y' \ qh'' \ pqp'' \ hun \ pi \ g'' \ p'' \ p'' \ g'' \ p'' \ p'$

Vj cv'lh'qwt 'Eqo r cp{ ''y kj f tcy ''j g''Kuwg''chgt''j g''Kuwg'Enqulpi ''F cvg. ''qwt ''Eqo r cp{ ''uj cm'dg''tgs wktgf ''vq''hkrg''c ''htguj '' Kuwg''f qewo gpv'y kj ''j g''UGDK''lp''tj g''gxgpv'qwt ''Eqo r cp{ ''uwdugs wgpvn(''f geld gu''vq''r tqeggf ''y kj ''tj g''Kuwg=''

 ${\rm n0} \quad \ \ \, \text{Vj cv'cf gs wcvg''cttcpi go gpwu'uj cm'dg''o cf g''vq''eqmgev''cm'Cr\,r\,r\,lecvlqp''Hqto u''ltqo ''Cr\,r\,r\,lecpvu=''cpf''}$

o 0 Vj cv'qwt'Eqo r cp{ ''uj cm'pqv'j cxg''tgeqwtug''vq''vj g''Kuuwg''Rtqeggf u''wpvkti'vj g''hkpcn'crrtqxcn'hqt''rkuvkpi "cpf ''vtcf kpi "qh''vj g''
Gs wkx{ ''Uj ctgu'htqo "cm'vj g''Uqem'Gzej cpi gu0'

WWKNK CVKQP'QHPGV'RTQEGGFU'

Qwt'Eqo r cp{ 'ur gelthecm('eqphto u'cpf 'f genetgu'yj cv.''

30 Cm'o qpkgu'tgegkxgf "qw'qh''y g"Kuwg"qh'ur gekhlgf "ugewtkkgu''vq"r wdnke"uj cm'dg"etgf kgf "I'vtcpuhgttgf "vq"ugr ctcvg"dcpm' ceeqwpv'qyj gt 'yj cp''y g"dcpm'ceeqwpv'tghgttgf ''vq"kp'uwd'ugevkqp'"5+"qh'Ugevkqp'62"qh'yj g"Eqo r cpkgu'Cev."4235="

40 F gvcku'qh'cm'o qpkgu'wkrk gf "qw'qh''y g"Kurwg't ghgttgf "\q"kp'twd/kgo "¾k+"uj cm'dg'f kuenqugf "cpf "eqp\kpwg"\q"dg'f kuenqugf "\kri'y g"\ko g"cp{"r ctv'qh'y g'Htguj "Kurwg"r tqeggf u'tgo ckpu'wp/wkrkugf "wpf gt "cp"crrtqrt kcvg"ugrctcvg"j gcf "kp"y g'dcrcpeg" uj ggv'qh'qwt "Eqorcp{ "kpf kecvkpi "y g'r wtrqug"hqt"y j kej "uwej "o qpkgu"j cxg"dggp"wkrkugf "cpf ="

F gvckni'qh'cm'wpwkrkugf "o qpkgu'qw'qh'iy g''Hrguj ''Kuwg. 'kh'cp{ "uj cm'dg''f kuenqugf ''wpf gt ''y g''cr r tqr tkcvg''ugr ctcvg''j gcf ''kp'' y g''dcmpeg''uj ggv'kpf kecvkpi ''y g''hqto ''kp''y j kej ''uwej ''wpwkrk gf ''o qpkgu''j cxg''dggp''kpxguvgf 0'



- Owt 'Eqorcp{ 'tıj cm'eqorn('y kıj 't) g'tgs wktgo gpvu'qh'UGDKNkınkpi 'Tgi wrcvkqpu.'4237 'kp'tgrcvkqp''q''y g'f kuerquwtg''cpf '' o qpkqtkpi ''qh''y g''wkrkucvkqp''qh''y g''r tqeggf u'qh''y g''Kurwg0'
- Qwt "Eqorcp{"uj cm'pqv"j cxg"tgeqwtug"vq"yj g"Kuwg"Rtqeggf u"wpvkri'yj g"crrtqxcri'hqt "rkuvkpi "cpf "vtcf kpi "qhi'yj g"Gs wkx{" Uj ctgu'htqo "vj g"Uvqem'Gzej cpi g"y j gtg'rkuvkpi "ku'uqwi j v'j cu'dggp'tgegkxgf 0'

 $\label{thm:continuity:equation} Vj g''Ngcf''O cpci gt''wpf gtwcngu''yj cv''yj g''eqo r nclpvu''qt''eqo o gpvu''tgegkxgf''lp''tgur gev''qh''yj g''Kuwg''uj cm''dg''cwgpf gf''d{''qwt''} \\ Eqo r cp{''gzr gf kklqwun{''cpf''ucvkuhcevqt kn{0''}} }$



TGUVTIEVKOPU'QP'HQTGN P'QY PGTUJ KR'QH'KPFKCP'UGEWTKVKGU'

Vj g'I qxgtpo gpv'qh'Kpf kc'j cu'htqo ''ko g''vq''ko g'o cf g'r qrke{'rtqpqwpego gpw'qp'HF Kkj tqwi j 'rtguu'pqygu'cpf 'rtguu'tgrgcugu'\fo Vj g'F RKW'kurwgf ''yj g'Eqpuqrkf cvgf ''Hqtgki p'F ktgev'Kpxguvo gpv'Rqrke{'pqvkhkgf ''d{''yj g'F RKW'Hkrg'P q07*4+''I'4242/HF KRqrke{'' f cvgf ''Qevqdgt''37."4242."'y kj "ghtgev'htqo ''Qevqdgt''37."4242"**yj g''ōHF K'Rqrke{'ö+"yj kej "eqpuqrkf cvgu''cpf "uwr gtugf gu''cmf' rtgxkqwu'rtguu'pqvgu.''r tguu'tgrgcugu'cpf 'enctkhecvkqpu'qp'HF Kkurwgf ''d{''yj g'F RKW''qt''yj g'F RKW''yj cv'y gtg'kp'hqteg''cpf ''ghtgev'' rtkqt''kq''Qevqdgt''37."42420'Vj g'I qxgtpo gpv'qh'Kpf kc''rtqr qugu''q''wr f cvg''y g''eqpuqrkf cvgf ''ektewrct''qp'HF KRqrke{''qpeg'gxgt{'' { gct''cpf ''yj gtghqtg.''yj g''}HF KRqrke{''y kni'dg''xcrkf ''wpvkri'yj g''F RKW''kurwgu''cp''wr f cvgf ''ektewrct0'''

Vj g'TDKcnq'kuwgu'O curgt 'Ektewrct''qp'Hqtgki p'Kpxguvo gpv'lp'Kpf kc''gxgt{ "{gct0Rtgugpvn{.'HF Klp'Kpf kc''ku''dglpi 'i qxgtpgf'' d{ 'O curgt 'Ektewrct''qp'Hqtgki p'Kpxguvo gpv'l' .'' cu'' wr f cvgf '' htqo '' vko g'' vq'' vko g'' d{ '' TDK cpf '' O curgt'' F ktgevkqpó'' Hqtgki p'' Kpxguvo gpv'lp'Kpf kc''*wr f cvgf ''wr ''vq''O ctej ''2: .''423; +0'Kp''vgto u''qh''yj g''O curgt ''Ektewrct."cp'Kpf kcp''eqo r cp{ ''o c{ 'kunwg''ltguj '' uj ctgu''vq''r gqr rg''tgukf gpv''qwukf g''Kpf kc''*y j q''ku''grki klng''vq''o cng''kpxguvo gpw''kp'Kpf kc.''hqt''y j kej ''grki kllrkv{ ''etksgtkc''ctg''cu'' r tguetklgf +0'Uvej ''Itguj ''kunwg''qh''uj ctgu''uj cm''dg''uwdlgev''vq''kpvgt/crkc."vj g''r tkekpi ''i wkf grkpgu''r tguetklgf ''wpf gt''yj g''O curgt'' Ektewrct''cpf ''O curgt''F ktgevkqp0'Vj g''Kpf kcp''eqo r cp{ ''o cmkpi ''uvej ''Itguj ''kunwg''qh''uj ctgu''y qwrf ''dg''uwdlgev'vq''y g''tgrqtvkpi '' tgs wktgo gpvu.''kpvgt/crkc'y kj 'tgur gev'vq''eqpukf gtcvkqp''hqt''kunwg''qh''uj ctgu''cpf ''cnxq''uwdlgev'vq''o cmkpi ''egtvckp''hkrkpi u'kpenwf kpi '' lkrkpi ''qh''Hqto ''HE/I RT0'

Kp"ecug"qh"lpxguvo gpv'lp"ugevqtu"yi tqwi j "I qxgtpo gpv'Tqwg."crrtqxcn"ltqo "eqo r gvgpv'cwj qtkv{ "cu"o gpvkqpgf "lp"Ugevkqp"6" qh"vj g"HF KRqnle{"4242"j cu"vq"dg"qdvclpgf 0'Vj g"vtcpulgt"qh"uj ctgu"dgw ggp"cp"Kpf lcp"tgukf gpv'vq"c"pqp/tgukf gpv'f qgu"pqv' tgs wktg"vj g"rtkqt"crrtqxcn"qh"vj g"TDK"uwdlgev'vq"hwnlwo gpv'qh"egtvclp"eqpf kklqpu"cu"ur gekhlgf "d{"F KRR"I"TDK"ltqo "vko g"vq" vko g0'

 $\label{lem:current-current-condition} Cu"r gt"y g"gzknkpi "r qrke { "qh"y g"I qxgtpo gpv"qh"kpf kc."QEDu"ecppqv"r ct kekr cvg"kp"y ku"Kuwg"cpf "kp"ceeqtf cpeg"y ky "y g" gz vcpv"HF Ki wkf grlpgu"qp"ugevqtcn"ecr u. "r thekpi "i wkf grlpgu"gve0'cu"co gpf gf "d{ "T gugtxg"dcpm"qh"kpf kc. "htqo "vko g"vq"vko g0' kpxguvqtu"ctg"cf xkugf "q"eqphkto "vj gkt "grki kdkrk\{ "wpf gt "y g"tgrgxcpv"rey u"dghqtg"kpxguvkpi "cpf "T'qt"uwdugs wgpv"r wtej cug"qt" ucrg"tcpucevkqp"kp"y g"Gs wkx\{ "Uj ctgu"qh"qwt"Eqo r cp{0 Kpxguvqtu"y km'pqv'qhhgt."ugm"r rgf i g. "qt"tcpuhgt"y g"Gs wkx\{ "Uj ctgu"qh"qwt"Eqo r cp{ "vq"cp{ "r gtuqp"y j q"ku"pqv'grki kdrg"wpf gt"cr r r kecdrg"rey u. "twgu."tgi wrevkqpu."i wkf grlpgu0'Qwt"Eqo r cp{ ."vj g" Wpf gty tksgtu"cpf " vj gkt"tgur gevkxg"f ktgevqtu."qhhkegtu."ci gpvu."chhkrevgu."cpf " tgr tgugpvevkxgu."cu"cr r r r kecdrg."ceegr v"pq" tgur qpukdkrk\{ "qt"rkcdkrk\{ "hqt"cf xkukpi "cp{ "kpxguvqt"qp"y j gyj gt"uwej "kpxguvqt"ku"grki kdrg"vq"ces wktg"Gs wkx\{ "Uj ctgu"qh"qwt" Eqo r cp{0"}$

 $\label{thm:condition} \begin{tabular}{l} $K'' = K'' = K''$

Vj g'tcpulhgt'qh'tij ctgu'dgwy ggp'cp'Kpf kcp'tgukf gpv'cpf 'c'pqp/tgukf gpv'f qgu'pqv'tgs wktg'tj g'r tkqt'crrtqxcn'qh'tj g'TDK'rtqxkf gf " vj cv'"

*li⊹ yi g"cevkxkkgu"qh"yi g"kpxguvgg"eqorcp{"ctg"wpfgt"yi g"cwqocvke"tqwvg"wpfgt"yi g"hqtgkip"fktgev'kpxguvogpv'rqnke{"cpf" vtcpuhgt"fqgu"pqv'cwtcev'yig"rtqxkukqpu"qh"yig"Vcmgqxgt"Tgiwrcvkqpu=""

*Net-yjg"pqp/tgukfgpv"ujctgjqnfkpi"ku"ykojkp"vjg"ugevqtcn'hkok uu"vpfgt"vjg"HFKrqnke{="cpf""

*kkk+ yjg"rtkekpi "ku"kp"ceeqtfcpeg"ykyj"'yjg"iwkfgnkpgu'rtguetkdgf"d{"yjg"UGDK'I"TDKO""

Hwt j gt."lp"ceeqtf cpeg"y kj "Rt guu"P qvg"P q0'5"*4242"Ugt kgu+."f cvgf "Cr t kri'39."4242"kuwgf "d{" y g"F RKW"cpf "y g"Hqt gki p" Gzej cpi g'O cpci go gpv*P qp/f gdv\Kpurtwo gpu+'Co gpf o gpv\Twgu."4242"y j kej "eco g'kpvq"ghtgev\trqo "Cr t kri'44."4242."cp{" kpxguvo gpv."uvduet kr kqp. 'r vtej cug"qt "ucrg"qh'gs vkk{"kpurtwo gput"d{"gpvkkgu"qh'c "eqwpvt{"y j kej "tj ctgu"hcpf "dqtf gt "y kj "Kpf kc" qt"y j gtg"j g"dgpghkekcni'qy pgt "qh"cp"kpxguvo gpv'kpvq"Kpf kc"ku"ukwcvgf "kp"qt"ku"c"ekk\{ gp"qh'cp{"uwej "eqwpvt{"\%T gurt kevgf" Kpxguvqtu\%+"y kni'tgs vktg"r tkqt"cr r tqxcn'qh'y g"I qxgtpo gpv."cu"r tguetkdgf "kp"yj g"Eqpuqnkf cvgf "HF K\Rqnke{"cpf "y g"HGO C" TwguOHwtyj gt."kp"y g"gxgpv\qh'\tcpuhgt"qh'qv pgtuj kr "qh'cp{"gxkvkpi "qt "hwwtg"hqtgki p"f ktgev\kpxguvo gpv\kp"cp"gpvk\{"kp"Kpf kc."



f ktgevn("qt"kpf ktgevn("."tguwnkpi "kp"kj g"dgpghkekniqy pgtuj kr "hcmlpi "y kj kp"kj g"chqtguckf "tguvtkevkqp"Tr wtxkgy ."uwej "uwdugs wgpv" ej cpi g"kp"yj g"dgpghkekniqy pgtuj kr "y kmi'cmq"tgs wktg"crrtqxcn"qh"yj g"I qxgtpo gpv0'Hwtyj gto qtg."qp"Crtkn'44."4242."yj g" O kpkmt { "qhTHpcpeg."I qxgtpo gpv0'hTkpf kc"j cu'cmq"o cf g"c'uko knet "co gpf o gpv"q"yj g"HGO C"T wgu0Rwtuwcpv"q"yj g"Hqtgki p" Gzej cpi g"O cpci go gpv"*P qp/f gdv"Kputwo gpvu+"*Hqwtyj "Co gpf o gpv+"T wrgu."4242."c"o wnkreytcn'dcpm'qt "hwpf ."qh"y j kej " Kpf kc"ki"c"o go dgt."uj cm'pqv'dg"t gcvgf "cu"cp"gpvk{"qh"c"r ctvkewret"eqwpvt { "pqt"uj cm'cp{ "eqwpvt { "dg"ttgcvgf "cu"yj g"dgpghkekn" qy pgt"qh"yj g"kpxguvo gpvu"qh"uwej "dcpm'qh"hwpf "kp"Kpf kc0Gcej "Dkf fgt"uj qwrf "uggmlkpf gr gpf gpv'ngi cn'cf xkeg"cdqwv'kwu'cdkrk{" q"r ctvkekr cvg"kp"yj g"Kurwg0Kp"yj g"gxgpv'uwej "r ttqt"crrtqxcn'qh'yj g"I qxgtpo gpv'qh"Kpf kc"ku'tgs wktgf ."cpf "uwej "crrtqxcn'j cu" dggp"qdvkpgf ."yj g"Dkf fgt"uj cml'pvko cvg"qwt"Eqo r cp{ "cpf" yj g"Tgi kntct"q"yj g"Kurwg"kp"y tkkpi "cdqw'uwej "crrtqxcn'cmpi " y kyj "c"eqr { "yj gtgqh'y kyj kp"yj g"Kurwg"Rgtkqf 0"

Cu"r gt"yj g"gzknkpi "r qrke { "qh"yj g"I qxgtpo gpv'qh"kpf kc."QEDu"ecppqv'r ct kekr cvg"kp"yj ku"Kuwg"cpf "kp"ceeqtf cpeg"y kyj "yj g" gz vcpv'HF Ki wkf grlpgu"qp"ugevqtcn'ecr u. "r tkekpi "i wkf grlpgu"gev0'cu"co gpf gf "d { "T gugtx g"dcpm'qh'Kpf kc."htqo "vko g"vq"vko g0' kpxguvqtu"ct g"cf xkugf "vq"eqphkto "vj gkt "grki kdkrkv{"wpf gt"yj g"t grgxcpv'rcy u"dghqtg"kpxguvkpi "cpf "I"qt"uwdugs wgpv'r wtej cug"qt" ucrg"tcpucevkqp"kp"yj g"Gs wkv{"Uj ctgu"qh'qwt"Eqo r cp { 0"Kpxguvqtu"y km'pqv'qhhgt."ugm"r rgf i g"qt"tcpuhgt"yj g"Gs wkv{"Uj ctgu"qh" qwt "Eqo r cp { "vq"cp { "r gtuqp"y j q"ku"pqv'grki kdrg"wpf gt"cr r rlecdrg"rcy u. "t wrgu."tgi wrcvkqpu."i wkf grkpgu0'Qwt"Eqo r cp { ."vj g" Wpf gty tksgtu" cpf " vj gkt" tgur gevkxg" f ktgevqtu." qhhkegtu."ci gpvu. "chhkrlcvgu" cpf " tgr tgugpvcvkxgu."cu" cr r rlecdrg."ceegr v' pq" tgur qpukdkrkv{"qt"rkcdkrkv{"hqt"cf xkukpi "cp{ "kpxguvqt"qp"y j gyj gt"uwej "kpxguvqt "ku"grki kdrg"vq"ces wktg"Gs wkv{ "Uj ctgu"qh"qwt" Eqo r cp { 0"

MPXGUVO GPV'EQPF NV NQPU'I'T GUVT NEV NQPU HQT'QXGTUGCU GPV NV NGU''

Wpf gt"\u00ed g"ewttgp\u00ed HF KRqrle { "4242."\u00ed g"o czlo wo "co qwp\u00ed qh"\u00ed pxguvo gp\u00ed \u00ed ugev\u00ed tcn"ecr +"d { "hqtgki p"kpxguvqt"\u00ed pcp"kuw\u00ed pi "gp\u00ed \u00ed kiev uo qu\u00ed gp\u00ed \u00ed kiev uo gp\u00ed \u00ed kiev uo gp\u00ed \u00ed kiev uo gp\u00ed \u00ed kiev uo gp\u00ed \u00ed \u00ed p\u00ed pxguvo gp\u00ed \u00ed \u00ed kiev uo gp\u00ed \u00ed \u00ed p\u00ed pxguvo gp\u00ed \u00ed \u00ed \u00ed p\u00ed p\u00

Rqt\hqhq"Kpxguvo gpv"w vq"ci i tgi cvg"hqtgki p"kpxguvo gpv"ngxgn"qh"6; ' "qt"ugevqtcn"l"uvcwvqt {"ecr ."y j kej gxgt"ku"nqy gt."y km' pqv"dg"uwdlgev"vq"gkij gt"I qxgtpo gpv"crrtqxcn"qt"eqo rnkcpeg"qh"ugevqtcn"eqpf kklqpu."kh"uwej "kpxguvo gpv"f qgu"pqv"tguwn/"kp" vcpuhgt "qh"qy pgtuj kr "cpf "l"qt"eqpvtqn"qh"l%pf kcp"gpvkklgu"htqo "tgukf gpv"Kpf kcp"ekkl gpu"vq"pqp/tgukf gpv"gpvkklgu0Qvj gt 'hqtgki p" kpxguvo gpw"y kn"dg"uwdlgev"vq"eqpf kklqpu"qh"I qxgtpo gpv"crrtqxcn"cpf "eqo rnkcpeg"qh"ugevqtcn"eqpf kklqpu"cu"rgt"HF KRqnke {0' Vj g"vqvn"hqtgki p"kpxguvo gpv."f ktgev"cpf "kpf ktgev."kp"vj g"kuwkpi "gpvkx{"y kn"pqv"gzeggf"vj g"ugevqtcn"l"uvcwvqt {"ecr 0"

IPXGUVO GPV'D['HRKU'WPFGT'RQTVHQNKQ'KPXGUVO GPV'UEJ GO G'*RKUK'''

Y kj "tgi ctf u"\q"r wtej cug"l"\ucrg'\qh'ecr k\ucrd'\punt\wo gpu"\qh'i\ucrg'\qh' k\upro r cp {"d{"cp"\phrK\wpf gt"\RU'\j g"\q\upro r'j qrf kpi "d{"\upro g'\q\upro g'\upro g

IPXGUVO GPV'D['PTKQT'QEKQP'TGRCVTICVKQP'DCUKK''

 $Vj\ g"r\ wtej\ cug"\ l"ucrg"\ qh"gs\ wk\ "uj\ ctgu."f\ gdgpwtgu."r\ tghgtgpeg"uj\ ctgu"cpf"uj\ ctg"y\ cttcpw"kuwgf"d\ "cp"Kpf\ kcp"eqo\ r\ cp\ "gtgkpchwgt"tghgttgf"uqem'gzej\ cpi\ g"kpf\ kcp"eqo\ r\ cp\ "qp"c"tgeqi\ pkugf\ "uqem'gzej\ cpi\ g"kpf\ kc"d\ "P\ qp/T\ gukf\ gpv'Kpf\ kcp"\ pT\ K''qt"Qx\ gtugcu'Ekk\ gp"qh'Kpf\ kc"\ QE\ K''qp"tgr\ cvtkc\ qp"dcuku'ku'cmqy\ gf\ 'uwdlgev'q''egtvckp''eqpf\ kkqpu"\ wpf\ gt'Hqtgki\ p'Gzej\ cpi\ g'O\ cpci\ go\ gpv'\ pqp/f\ gdv'Kpuvtwo\ gpvu+T\ wgu."423;\ 0"$

Vj g"vqv:n"j qrf kpi "d{ "cp{ "kpf kxkf w:n"P TKqt "QE Kuj c:n"pqv'gzeggf "7' "qh''y g"vqv:n'r ckf /wr "gs wkx{ "ecr kx:n'qp"c"hwnf("f knwgf" dcuku"qt"uj qwf "pqv'gzeggf "7' "qh''y g"r ckf /wr "x:cnwg"qh''gcej "ugtkgu"qh''f gdgpwtgu"qt "r tghgtgpeg"uj ctgu"qt "uj ctg"y cttcpwu" kuwgf "d{ "cp"Kpf kcp"eqo r cp{ "cpf "yj g"vqv:n'j qrf kpi u"qh"cm'P TKi"cpf "QE Ki"r wv'vqi gvj gt "uj cm'pqv'gzeggf "32' "qh''y g"vqv:n'r ckf /wr "x:cnwg"qh''gcej "ugtkgu"qh"f gdgpwtgu"qt "r ckf /wr "x:cnwg"qh''gcej "ugtkgu"qh''f gdgpwtgu"qt "r tghgtgpeg'uj ctgu'qt"uj ctg'y cttcpw="r tqxkf gf "vj cv'y g"ci i tgi cvg'egkrkpi "qh'32' "o c{"dg'tckugf "vq'46' "kfic'ur gekcntguqnwkqp" vq"y cv'ghtgev'ku'r cuugf "d{"yj g'' ggtcn'dqf {"qh''y g"Kpf kcp"eqo r cp{0"

^{43: &}quot;



IPXGUVO GPV'DI 'PTKOT'OEKOP'POP/TGRCVTKCVKOP'DCUKK''

Cu'r gt "ewttgpv'HF KRqrle{"4242."Hqtgki p"Gzej cpi g"O cpci go gpv'*P qp/f gdv'Kpurtwo gpvu+Twrgu."423; ."Rwtej cug"I'ucrg"qh" Ecr kcrl'Kpurtwo gpvu+Twrgu "4242."Hqtgki p"Gzej cpi g"O cpci go gpv'*P qp/f gdv'Kpurtwo gpvu+Twrgu."423; ."Rwtej cug"I'ucrg"qh" Ecr kcrl'Kpurtwo gpvu-qt"eqpxgtvkdrg"pqvgu"qt"wpku"qt"eqpvtkdwkqp"vq"vj g"ecr kcrl'qh"cp"NNR"d{"c"PTK'qt"QEK'qp"pqp/"tgr cvtkcvkqp"dcuku'ó'y krl'dg'f go gr "vq"dg'f qo guvke"kpxguvo gpv'cv'r ct'y knj "vj g"kpxguvo gpv'o cf g"d{"tgukf gpvu0Vj ku'ku'hwt vj gt" uwdlgev'vq'tgo kwcpeg"ej cppgnttguvtkevkqpu0"

Vj g'Gs whs{'Uj ctgu'j cxg'pqv'dggp'cpf'y knipqv'dg't gi knyt gf'wpf gt'yj g'WUUUgewt knigu'Cev'qhi3; 55.'cu'co gpf gf'*\darker WU'Ugewt knigu'Cev\darker \darker \dar

Ceeqtf kpi n(.'vj g'gs wks('tij ctgu'ctg'dgkpi 'qhhgtgf 'cpf 'tqnf 'qpn('qwwkf g'vj g'Wpksgf 'Ucvgu'qhiCo gt kec'kp'cp'qhhuj qtg'' vt cpucevkqp'kp't grkcpeg'wr qp'T gi wurkqp'U'wpf gt 'vj g'WU'Ugewt kskgu'Cev'cpf 'vj g'crrhecdng'icy u'qhi'vj g'l wt kuf kevkqp'' y j gtg'vj qug'qhhgt u'cpf 'tucng'qeewt0''

Cp{'hqty ctf kpi.'f kmt kdwskqp'qt't grt qf weskqp'qh'tj kdf qewo gpv'kp'tj qng'qt'kp'rctv'o c{'dg'wpcwsj qt kngf 0Hckmt g'vq'' eqo rn('y knj 'tj kdf kt geskxg'o c{'tgmmn'kp'c'xkqncskqp'qh'tj g'Ugewt knkgu'Cev'qt'tj g'crrhecdng'ncy u'qh'qnj gt'l wt knf keskqpu0' Cp{'kpxguvo gpv'f geknkqp'tj qwnf'dg'o cf g'qp'tj g'dcuku'qh'tj g'hpcntgto u'cpf 'eqpf knkqpu'cpf 'tj g'kphqto cskqp'eqpsckpgf'' kp'tj kn'Ftchv'Rtqurgewn0''

Vj g'Gs wls{ 'Uj ctgu'j cxg'pqv'dggp'cpf 'y knipqv'dg't gi knygtgf.'hknygf 'lqt'qvj gty kng's wcnkligf 'lp'cp{ 'lqvj gt 'lwt knf keskqp'' qwnlf g'Kpf kc'cpf 'b c{ 'pqv'dg'qlligt gf 'lqt 'luqnf.'cpf 'Crrnlecskqp'b c{ 'pqv'dg'b cf g'd{ 'rgt uqpu'kp'cp{ 'lwej 'lwt knf keskqp.'' gzegrv'kp'eqo rnlcpeg'y ksj 'vj g'crrnlecdng'icy u'qh'iwej 'lwt knf keskqp0''

Vj g'cdqxg'kphqto cvkqp'ku'i kxgp'hqt'vj g'dgpgkk/qhl'vj g'CrrnecpwDQwt'Eqo rcp{'cpf'vj g'Ngcf'O cpci gtu'ctg'pqv'ncdng'hqt'cp{'co gpf o gpwl'qt'o qf khecvkqp'qt'ej cpi gu'kp'crrnecdng'hcy u'qt'tgi wcvkqpu'y j kej 'o c{'qeewt'chgt'vj g''f cvg'qhl'vj ku'Ftch/RtqurgevwDCrrnecpwl'ctg'cf xkugf'vq'o cng'vj gkt'kpf grgpf gpv'kpxgwki cvkqpu'cpf'gpwtg'vj cv'vj g''Crrnecvkqpu'ctg'pqv'kp'xkqncvkqp'qh'hcy u'qt'tgi wcvkqpu'crrnecdng'vq'vj go 'cpf'f q'pqv'gzeggf'vj g'crrnecdng'ho kw''wpf gt'vj g'hcy u'cpf'tgi wcvkqpu'



UGEVKOP 'ZKKO CKP 'RTQXKUKOP U QHCTVKENGU QHCUUQEKCVKOP "

VJ G'EQO RCP KGU'CE V'4235"

EQORCP['NKO KVGF'D['UJ CTGU'

CTVIENGUQHCUQEICVIQP,"

QH'

CUUQEKCVGF 'EQCVGTUNKO KVGF %'

30 EQPUVK/WKQP'QH'VJ G'EQORCP["

- c+ Vj g"tgi wævkqpu'eqpvckpgf "kp"vcdng"õHö"qh"uej gf wrg"Kvq" yj g"Eqo r cpkgu"Cev."4235."cu"co gpf gf "uj cm"cr r n("qpn("kp"uq" hct"cu"yj g"uco g"ctg"pqv"r tqxkf gf "hqt"qt"ctg"pqv"kpeqpukuvgpv'y kyj "yj gug"Ctvkergu0'
- d+ Vj g"tgi wævkqpu"hqt" yj g"o cpci go gpv"qh" yj g"Eqo r cp{"cpf "hqt" yj g"qdugtxcpeg"qh" yj g"o go dgtu" yj gtgqh"cpf "yj gkt" tgr tgugpvcvkxgu"uj cm'dg"uwej "cu"ctg"eqpvckpgf "kp" yj gug"Ctvkengu" uwdlgev" j qy gxgt" vq" yj g" gzgtekug" qh" yj g" uvcwwqt{" r qy gtu"qh" yj g"Eqo r cp{"kpt"gur gev'qh'tgr gcn"cf f kkqpu. "cngtcvkqpu. "uwduvkwwkqp." o qf khecvkqpu"cpf "xctkcvkqpu"yj gtgvq" d{"ur gekcn'tguqnwkqp"cu'r tguetkdgf "d{"yj g"Eqo r cpkgu'Cev."4235."cu"co gpf gf 0'

40 KPVGTRTGVCVKQP"

CO FGHIP KVKQPU'

 $\label{thm:continuous} \begin{center} K_p "ij g"kpvgtrtgvcvkqp"qh" ij gug"Ctvkengu" ij g"hqmqy kpi "y qtfu"cpf "gzrtguukqpu" uj cm" j cxg" ij g"hqmqy kpi "o gcpkpi u"wpnguu" tgr wi pcpv'vq" ij g'uwdlgev'qt" eqpvgzv'' \\ \end{center}$

- c0 õCevö" o gcpu'\j g'Eqo r cpkgu'Cev.'\4235.'\j g'twrgu'cpf 'tgi wrc\kqpu'r tguetkdgf '\j gtgwpf gt.'cu'pqy 'gpcevgf '\qt'\cu'co gpf gf ''
 htqo '\ko g'\q'\ko g'cpf '\ij cmkpenwf g'cp{ 'uvcwwqt { 'tgr rcego gpv'\qt 'tg/ ''gpcevo gpv'\j gtgqh=''
- d0 őCFTuö'uj cm'o gcp'Co gtkecp'F gr qukqt{ 'Tgegkr wi'tgr tgugpvkpi 'CFUu0'
- e0 õCppwcn'I gpgtcn'O ggvkpi ö'uj cm'o gcp"c"I gpgtcn'O ggvkpi "qh'vj g"j qnf gtu"qh'Gs wkx{ "Uj ctgu"j gnf "kp"ceeqtf cpeg"y kj "vj g" cr r n'ecdng"r tqxkukqpu"qh'vj g'Cev0'
- f 0 ~ oCFT"Hoektk/(ö"uj cm'o gcp"cp"CFT"hoektk/("guvcdrkuj gf "d{"vj g"Eqo r cp{"y kj "c"f gr qukqt{"dcpm'vq"j qrf "cp{"Gs wkx{" Uj ctgu"cu"guvcdrkuj gf "r wtuwcpv'vq"c"f gr qukv'ci tggo gpvcpf "uwdugs wgpvn("cu"co gpf gf "qt"tgr reegf "htqo "vko g"vq"vko g0"
- g0 õCF Uıö''ıj cm'o gcp'Co gtkecp'F gr qukqt { "Uj ctgu."gcej "qh'y j kej 'tgr tgugpvu'c''egtvckp''pwo dgt''qh'Gs wkx{ "Uj ctgu0'
- 10 õCt vkerguö''uj cm'o gcp''yj gug''Ct vkergu''qh''Cuuqekc vkqp''cu''cf qr vgf ''qt''cu'htqo ''vko g''vq''vko g''cnvgtgf ''kp''ceeqtf cpeg''y kvj ''yj g'' r tqxkukqpu''qh''yj gug''Ct vkergu''cpf ''Cev0'

%Cf qr vgf "kp"vj g"gzvtc"qtf kpct{"I gpgtcn'O ggvkpi "qh"vij ctgj qrf gt"j grf "qp"Qevqdgt"46."4245."ur gekcn't guqnwkqp"j cu"dggp" r cuugf "hqt"cf qr vkqp"qh'bgy "ugv'qh'Ct vkerg'qh'cuuqekcvkqp"r gt vckpkpi "vq"eqpxgtukqp"qh"vj g"Eqo r cp{"htqo "Rtkxcvg"Eqo r cp{"vq" Rwdrke"Eqo r cp{"cu"r gt "Eqo r cpkgu"Cev."42350'

, Cf qr vgf "kp" vj g"gzvtc" qtf kpct { "I gpgtcri'O ggvkpi "qh'uj ctgj qrf gt" j grf "qp" F gego dgt" 48."4245." ur gekcri't guqnwkqp" j cu'd ggp" r cuugf "hqt" cf qr vkqp" qh" pgy "ugv'qh" Ctvkerg" qh" cuuqekcvkqp" y j kej "ku" cr r rkecdrg" vq" Rwdrke "Eqo r cp { "cu" r gt" Eqo r cpkgu" Cev." 42350 Gctrkgt "ugv'qh" Ctvkergu "qh" Cuuqekcvkqp" cr r gpf gf "chygt" vj gug" pgy "ugv'qh" Ctvkerg "qh" Cuuqekcvkqp "cr r gpf gf "chygt" vj gug" pgy "ugv'qh" Ctvkerg "qh" Cuuqekcvkqp "cr r gpf gf "chygt" vj gug" pgy "ugv'qh" Ctvkerg "qh" Cuuqekcvkqp "cr r gpf gf "chygt" vj gug" pgy "ugv'qh" Ctvkerg "qh" Cuuqekcvkqp "cr r gpf gf "chygt" vj gug" pgy "ugv'qh" Ctvkerg "qh" Cuuqekcvkqp "cr r gpf gf "chygt" vj gug" pgy "ugv'qh" Ctvkerg "qh" cuuqekcvkqp "cr r gpf gf "chygt" vj gug" pgy "ugv'qh" ctvkerg "qh" cuuqekcvkqp "cr r gpf gf "chygt" vj gug" pgy "ugv'qh" ctvkerg "qh" cuuqekcvkqp "cr r gpf gf "chygt" vj gug" pgy "ugv'qh" ctvkerg "qh" cuuqekcvkqp "cr r gpf gf "chygt" vj gug" pgy "ugv'qh" ctvkerg "qh" cuuqekcvkqp "cr r gpf gf "chygt" vj gug" pgy "ugv'qh" ctvkerg "qh" cuuqekcvkqp "cr r gpf gf "chygt" vj gug" pgy "ugv'qh" ctvkerg "qh" cuuqekcvkqp "cr r gpf gf "chygt" vj gug" pgy "ugv'qh" ctvkerg "qh" cuuqekcvkqp "cr r gpf gf "chygt" vj gug" pgy "ugv'qh" ctvkerg "qh" cuuqekcvkqp "cr r gpf gf "chygt" vj gug" pgy "ugv'qh" ctvkerg "qh" cuuqekcvkqp" vj gy "qh" cuuqekcvkqp"

- $j\ 0 \quad \text{$\tilde{o}$ Dqctf\"{o}''uj$ cm'o gcp''yj g''dqctf''qh'f ktgevqtu''qh''yj g''Eqorcp{."cu''eqpuvkwwgf''ltqo'''vko g''vq''vko g.''kp''ceeqtfcpeg''y kyj''rcy'' cpf''yj g''rtqxkukqpu''qh''yj gug''Ctvkergu0'' }$
- k0 õDqctf "O ggvkpi ö'uj cm'o gcp"cp{ "o ggvkpi "qh'vj g'Dqctf ."cu'eqpxgpgf "htqo "vko g"vq"vko g"cpf "cp{ "cf lqwtpo gpv'vj gtgqh" kp"ceeqtf cpeg'y kj "ncy "cpf "vj g"r tqxkukqpu" qh" yj gug"Ctvkergu0'



- 10 õDgpghleken" Qy pgtö" uj cm' o gcp" dgpghleken" qy pgt "cu" f ghlpgf "kp" Encwug" *c+" qh" uwduge klqp" *3+" qh" uge klqp" 4" qh" yj g" F gr qukqt kgu "Cev0"
- $m0 \quad \text{$\tilde{o}$Dwulpguu'F c} \ \text{\tilde{o}''uj cm'o gcp''c'f c} \ \text{\tilde{g}} \ \text{\tilde{g}}$
- n0 őEcr kscnö"qt "õuj etg"ecr kscnö"uj em'o gep"uj etg"ecr kscn'hqt "vj g"vko g"dgkpi ."tekugf "qt "ewuj qtkugf "vq"dg"tekugf "hqt "vj g" r wtr qug"qh'vj g"Eqo r ep{0'
- $o\ 0\quad \text{\~oEj ckto cp\"o''uj cm'o gcp''uwej''r gtuqp''cu''ku''pqo\ kpcvgf''qt''cr\,r\,qkpvgf''kp''ceeqtf\,cpeg''y\,kj'\,''Ctvkerg''58''cpf''8;\,''j\,gtgkp''dgrqy\,0''}$
- $p0 \quad \text{\~oEqo r cp} \{ \ddot{o} \text{"qt"\~oy} \text{ kn"Eqo r cp} \{ \ddot{o} \text{"tij cm"o gcp"CUUQEKCVGF" "EQCVGTU"NKO KVGF 0" } \} \}$
- q0 õEqo o kwgguö'luj cm'o gcp"c'eqo o kwgg'eqpuvkwwgf 'lp'ceeqtf cpeg'y kyj 'Ctvkerg'930'
- s 0 őF gr quksqtkgu'Cevö'tij cmlo gcp''Vj g'F gr quksqtkgu'Cev.'3; ; 8'cpf 'tij cmlkpenwf g'cp{ 'tivcvwqt{ 'o qf khkecvkqp''qt'tg/gpcevo gpv' yj gtgqh0'
- $t0 \quad \text{ \tilde{o}F gr qukqt { \tilde{o}'ij cm'o gcp''c'F gr qukqt { $\text{"cu'f ghkpgf'kp'Encwug'$$g+"qh'uwd/ugevkqp'$}3+"qh'ugevkqp'$$4"qh'yj g'F gr qukqtkgu'Cev0'} \\$
- u0 õFktgevqtö'uj cm'o gcp"cp{"fktgevqt"qh''yj g"Eqorcp{."kpenwfkpi "cnugtpcvg"fktgevqtu."kpf gr gpf gpv'fktgevqtu'cpf "pqokpgg" fktgevqtu'crrqkpvgf 'kp"ceeqtfcpeg"y kyj "rcy "cpf" yj g"rtqxkukqpu"qh''yj gug'Ctvkergu0'
- v0 õF kxkf gpf ö'uj cm'kpenxf g'kpvgtko 'f kxkf gpf u0'
- w0 õGs wkv{ "Uj ctg"Ecr kscriö"uj cm'o gcp"vj g"vqvcn"kuuwgf "cpf "r ckf /wr "gs wkv{ "uj ctg"ecr kscn'qh'vj g"Eqo r cp{ ."ecnewrcygf "qp"c" Hwm{ "F knwgf "Dcuku0"
- x0 õGs wkv{ "Uj ctguö"uj cm'o gcp"hwm{ "r ckf /wr "gs wkv{ "uj ctgu"qh'vj g"Eqo r cp { "j cxkpi "c"r ct "xcnwg"qh'kP T "321/"*T wr ggu"Vgp+" r gt "gs wkv{ "uj ctg"qt "cp { "qvj gt "kuuwgf "uj ctg"ecr kxcn'qh'vj g"Eqo r cp { "vj cv'ku"tgencuukhkgf . "tgqti cpk gf . "tgeqpuvkwwgf "qt" eqpxgtvgf "kpvq"gs wkv{ 'tij ctgu0'
- y 0 ~ õGz gewqtö"qt "õCf o kpkıntcvqtö"uj cm'o gcp"c"r gtuqp"y j q"j cu"qdvckpgf "r tqdcvg"qt "rgwgtu\u00e4h'cf o kpkıntcvkqp."cu"y g"ecug" o c{"dg."htqo "c"eqwtv'qh'eqo r gwgpv'lwtkuf kevkqp"cpf "uj cm'kpenwf g"'yj g"j qrf gt "qh'c"uweeguukqp"egtvkhkecvg"cwyj qt kl kpi "yj g" j qrf gt "yj gtgqh"vq"pgi qvkcvg\u00e4t "tcpuhgt"yj g"Gs wkx{ "Uj ctg"qt"Gs wkx{ "Uj ctgu"qh''yj g"f gegcugf "Uj ctgj qrf gt "cpf "uj cm'cnuq" kpenwf g"'yj g"j qrf gt "qh'c"egtvkhkecvg"i tcpvgf "d{"yj g"Cf o kpkıntcvqt/I gpgtcn'crrqkpvgf "wpf gt "yj g"Cf o kpkıntcvqt"I gpgtcnu" Cev."3; 850'
- z0 õGz vtcqtf kpct { "I gpgtcn'O ggvkpi ö"uj cm'o gcp"cp"gz vtcqtf kpct { "i gpgtcn'o ggvkpi "qh''y g"j qnf gtu"qh'Gs wkv{ "Uj ctgu'f wn{ "ecnngf "cpf "eqpuvkwwgf "kp"ceeqtf cpeg"y ksj "y g"r tqxkukqpu"qh''y g"Cev±"
- $\{0 \quad \text{\'oH-pcpekcn''[gct''uj\ cm'o\ gcp"cp{''hkuecn''{gct''uj'\ g''Eqo\ r\ cp{.''dgi\ kppkpi\ ''qp''Cr\ tkn''3''qh''gcej\ ''ecngpf\ ct''{gct''cpf\ ''gpf\ kpi\ ''qp''O\ ctej\ ''53''qh''yj\ g''hqmqy\ kpi\ ''ecngpf\ ct''{gctO''} }$
- | 0 õHwm('Fkwwgf'Dcukuö'uj cm'o gcp. 'kp'tghgtgpeg'\q'cp{"ecnewc\kqp."\j cv'\j g''ecnewc\kqp"\uj qwf "dg''o cf g'\p'tgnc\kqp"\q'\j g" gs wkx{"uj ctg''ecr kcn'qh''cp{"Rgtuqp."cuuwo kpi "\j cv'cm'qwuvcpf kpi "eqpxgt\kdng"r tghgtgpeg'\uj ctgu'qt'f gdgpwtgu."qr \kqpu." y cttcpwl"cpf "q\j gt "gs wkx{"ugewtkkgu''eqpxgt\kdng"kpvq"qt"gzgtekucdng"qt"gzej cpi gcdng"hqt"Gs wkx{"Uj ctgu''qh''\yj cv\Rgtuqp" *y j gyj gt "qt"pqv''d{"\yj gkt "\yto u"\yj gp"ewttgpvn("eqpxgt\kdng."gzgtekucdng"qt"gzej cpi gcdng+:"j cxg''dggp"uq"eqpxgt\yf." gzgtekucf "qt"gzej cpi gf "\q'\yj g'o czko wo "pwo dgt'\qh'\Gs wkx{"Uj ctgu''q uukdng"wpf gt'\yj g'\yto u'\yj gtgqh')
- cc0 õI FTuö''uj cm'o gcp''vj g'tgi kungtgf 'I mqdcn'Fgrqukxct{'Tgegkrvu.'tgrtgugpvkpi 'I FUu0'
- dd0 õI F Uvö'uj cm'o gcp''yj g'I mqdcn'F gr qukqt { "Uj ctgu."gcej "qh'y j kej 'tgr tgugpvu'c'egtvckp''pwo dgt''qh'Gs wkx{ "Uj ctgu0'
- ee0 õI gpgtcn'O ggvkpi ö''uj cm'o gcp''c''o ggvkpi ''qh'j qnf gtu''qh'Gs wkx{ "Uj ctgu'' cpf '' cp { ''cf lqwtpo gpv''y gtgqh0'



- ff0 õKpf gr gpf gpv'F kt gevqtö"uj cm'o gcp"cp"kpf gr gpf gpv'f kt gevqt "cu"f ghkpgf "wpf gt "y g"Cevcpf 'wpf gt Tgi wrcvkqp"38*3-*d+" qh'vj g"Ugewt kskgu "cpf "Gzej cpi g"Dqctf "qh'Kpf kc"*Nkuvkpi "Qdnki cvkqpu "cpf "F kuenquwt g'T gs wkt go gpvu+'T gi wrcvkqpu "4237." cu'co gpf gf 0'
- gg0 õKpf kcö'uj cm'o gcp''yj g'Tgr wdrke''qh''Kpf kc0'
- hto õNcy ö'lij cm'o gcp'cm'cr r necdng'r tqxkukqpu'qh'cm'*k+'eqpukwkqpu. 'ltgckgu. 'ltxcwxgu. 'ltxy u'*kpenxf kpi ''j g'eqo o qp''rcy +."

 eqf gu. 'twrgu. 'tgi wrckqpu. 'lektewrctu. 'qtf kpcpegu'qt'qtf gtu'qh'cp{ "i qxgtpo gpvcn'cwj qtkx{ "cpf "UGDK"*kk+"i qxgtpo gpvcn'cr r tqxcnu. '*kkk+" qtf gtu. 'f gekukqpu. 'kplwpekqpu. 'lwf i o gpvu. 'cy ctf u'cpf 'f getggu'qh'qt'ci tggo gpwi'y kj 'cp{ 'i qxgtpo gpvcn'cwj qtkx{ .'*kx+"twrgu'qh'cpf "uvqeni'gzej cpi gu. "*x+"kpvgtpcvkqpcn'vtgcvkgu. "eqpxgpvkqpu'cpf "r tqvqeqnu. "cpf "*xk+"i gpgtcm{ "ceegr vgf 'ceeqwpvkpi 'r tkpekr rgu'qt'vj gf'grgxcpv'ceeqwpvkpi 'uvcpf ctf uO'
- i i $0\,$ õO cpci kpi "F ktgevqtö"uj cm'j cxg"vj g"o gcpkpi "cuuki pgf "vq"kv"vpf gt"vj g"Cev0"
- jj0 õOECö''ıj cm'o gcp''y g'O kpkınt { ''qh'Eqtrqtcvg''Chhcktu.'I qxgtpo gpv''qh''Kpf kc0'
- kkO õO go qtcpf wo ö'uj cm'o gcp''yj g''o go qtcpf wo "qh" cuuqekcvkqp" qh" yj g" Eqorcp{." cu'co gpf gf 'htqo ''vko g''vq''vko g0'
- 110 õQhhlegö'uj cm'o gcp''yj g'tgi kungtgf 'qhhleg'hqt''yj g''klo g''dgkpi ''qh''yj g'Eqorcp{0'
- mm0 õQlhkegtö"uj cm'j cxg"yj g"o gcpkpi "cuuki pgf "yj gtgvq"d { "Ugevkqp"4*7; +"qh"yj g"Eqo r cpkgu'Cev."4235."cu"co gpf gf 0'
- o o 0
õ Rckf '\wr ö'\uj cml\penxf g'\yj g'\co qwpv'etgf k
xgf '\cu'r ckf '\wr 0'
- pp0 õRgtuqpö"uj cm'o gcp"cp{"pcwtcn'r gtuqp."uqrg"r tqr t\gvqtuj \text{kr."r ctvpgtuj \text{kr."eqo r cp{."dqf { "eqtr qtcvg."i qxgtpo gpvcn' cwj qt\text{ky} \text{twin."cuuqe\text{kcvtqp"qt"qvj gt "gpv\text{"*y j gvj gt "tgi \text{knvgtgf "qt"pqv'cpf "y j gvj gt "qt "pqv'j cx\text{pi "ugr ctcvg" rgi cn'r gtuqpcr\text{\text{-}()'}}
- qq0 õRwdnle "Eqorcp{ö"uj cm"j cxg" yi g" o gcpkpi " cuuki pgf " yi gtgvq" d{" Ugevkqp" 4*93+"qh"yi g"Eqorcpkgu"Cev."4235."cu" co gpf gf 0'
- rr0 õT gi kuvgt "qh'O go dgtuö" lij cm'o gcp "ji g't gi kuvgt "qh'lij ct gj qnf gtu "q "dg 'ngr v'r wtuwcpv'\q "Ugevkqp": : "qh''ji g'Eqo r cpkgu'Cev." 4235. "cu "co gpf gf 0"
- tt0 õT wrguö''uj cm'o gcp''yj g'twrgu''o cf g''wpf gt''yj g''Cev'cpf ''pq\khkgf 'htqo ''\ko g'\q''\ko g0'
- uu0 õUgcrö'uj cm'o gcp''yj g'eqo o qp''ugcr*u+'hqt''yj g''kko g''dgkpi ''qh''yj g'Eqo r cp{0'
- w0 õUGDKö'uj cm'o gcp'vj g'Ugewtkkgu'cpf 'Gzej cpi g'Dqctf 'qh'Kpf kc.'eqpurkwwgf 'wpf gt'vj g'Ugewtkkgu'cpf 'Gzej cpi g'Dqctf 'qh'Kpf kc'Cev.'3; ; 4.'cu'co gpf gf 0'
- ww0 õUGDKNkukpi "Tgi wuckqpuö'tij cm'o gcp"tj g'Ugewtkkgu'cpf 'Gzej cpi g'Dqctf 'qh'Kpf kc "*Nkukpi 'Qdrki cvkqpu'cpf 'F kuenquwtg" Tgs wktgo gpvu+'Tgi wuckqpu '4237. "cu'co gpf gf 0'
- xx0 õUgetgvct{ö"uj cm'o gcp"c"eqo r cp{" ugetgvct{" cu"f ghlpgf "lp"encwug"%e+"qh'uwd/ugevlqp"\%3+"qh'ugevlqp"\%3+"qh'ugevlqp"\%3 +"qh'ugevlqp"\%3+"qh'ugevlqp"\%3+"qh'ugevlqp"\%3+"qh'ugevlqp"\%3+"qh'ugevlqp"\%3+"qh'ugevlqp"\%3+"qh'ugevlqp"\%4"\crrqlopvgf "d{"c"eqo r cp{"ugetgvct{" wpf gt"y g"lnwpevlqpu"qh'c"eqo r cp{"ugetgvct{" wpf gt"y g"lcevl/" wpf gt"y g"lcevl/" wpf gt"y g"lcevl/" wpf gt"y g"lcevl/"
- y y 0õUgewtkkguö"uj cm'o gcp"cp{"Gs wkk{"Uj ctgu"qt"cp{"qvj gt"ugewtkkgu."f gdgpwtgu."y cttcpwdt"qr vkqpu''y j gvj gt"qt"pqv." f ktgevn{"qt"kpf ktgevn{"eqpxgtvkdig"kpvq."qt"gzgtekucdig"qt"gzej cpi gcdig"kpvq"qt"hqt"Gs wkk{"Uj ctgu0'
- zz0 õUj ctg''Gs wkxcrgpviö''uj cm'o gcp"cp{"F gdgpwtgu."r tghgtgpeg"uj ctgu."hqtgki p"ewttgpe{"eqpxgtvkdrg"dqpf u."hrqcvkpi "tcvg" pqvgu."qr vkqpu'*kpenwf kpi "qr vkqpu'vq"dg"cr r tqxgf "d{"vj g"Dqctf "*y j gvj gt"qt"pqv"kuuwgf +"r wtuwcpv'vq"cp"go r nq{gg"uvqem' qr vkqp"r ncp+"qt"y cttcpvu'qt "qvj gt" Ugewtkkgu" qt" tki j vu" y j kej "ctg" d{"vj gkt" vgto u"eqpxgtvkdrg" qt" gzej cpi gcdrg" kpvq" Gs vkx{"Uj ctgu0'

"



- | | 0 õ**Uj ct gj qnf gt ux/O ggvkpi** ö"uj cm'o gcp"cp{"o ggvkpi "qh'vj g"Uj ctgj qnf gtu"qh'vj g"Eqo r cp{."kpenxf kpi "Cppwcn'I gpgtcn' O ggvkpi u"cu'y gm'cu'Gz vtcqtf kpct {"I gpgtcn'O ggvkpi u"qh'vj g"Uj ctgj qnf gtu"qh'vj g'Eqo r cp{."eqpxgpgf "htqo "vko g"vq'vko g" kp"ceeqtf cpeg'y kyj "Ncy "cpf "vj g"r tqxkukqpu"qh'vj gug"CtvkenguO'
- ccc0 **oʻUr gelc n'T guqnwlqpoʻ'**uj cm'j cxg" yi g"o gcplpi "cuuli pgf "vq"lx" wpf gt "Ugevlqp"336"qh" yi g"Eqo r cplgu"Cev."4235."cu" co gpf gf 0'
- ddd0ốVt cpulgt ö''uj cm'o gcp"¾+"cp{."f k gev'qt "kpf k gev" v cpulgt"qt"qy gt"f kur qukkqp"qh"cp{"uj ctgu."ugewtk\gu"¾penwf kpi "eqpxgt\kdrg"ugewtk\gu+"qt"xq\kpi "kp\gtguvu"qt"cp{"kp\gtguv"yj gtgkp."kpenwf kpi ."y kyj qw'nko kcv\qp."d{"qr gtc\kqp"qh"Ncy ."d{"eqwtv"qtf gt."d{"lwf kekni'r tqeguu."qt"d{"hqtgenquwtg."rgx{"qt"cwcej o gpv="%k+"cp{."f k gev'qt"kpf k gev"ucrg."cuuki po gpv" i kw"f qpcv\qp."tgf go r v\qp."eqpxgtv\qp"qt"qyj gt"f kur quk\qp"qh"uwej "uj ctgu."ugewtk\gu\%penwf kpi "eqpxgtv\drg"ugewtk\gu+"qt"xq\pi "kp\gtguvu"qt"cp{"kp\gtguv"yj gtgkp."r wtuwcpv"vq"cp"ci tggo gpv"cttcpi go gpv."kpurtwo gpv"qt"wpf gtuvcpf kpi "d{"yj kej "rgi cri"\kvrg"vq"qt"dgpgf\kekcn"qy pgtuj kr "qh"uwej "uj ctgu."ugewtk\gu"\%penwf kpi "eqpxgtv\drg"ugewtk\gu+"qt"xq\pi "kp\gtguv"yj gtgkp"r cuugu"htqo "qpg"Rgtuqp"q"cpqyj gt"Rgtuqp"qt"vq"yj g"uco g"Rgtuqp"\p"c"f khtgtgpv"rgi cri' kp\gtguv"qt"gpgvgt ygt"pqv"hgt"xcnwg="%kke"\yj g"i tcp\pi "qh"cp{"ugewtk\gu+"qt"xq\pi "kp\gtguv"qt"gpewo dtcpeg"kp."qt"gzvgpf kpi "qt" cwcej kpi "\q."uwej "uj ctgu."ugewtk\gu+"qt"cp{"kp\gtguv"qt"gpewo dtcpeg"kp."qt"gzvgpf kpi "qt" cwcej kpi "\q."uwej "uj ctgu."ugewtk\gu+"\gtext\gu "kp\gtguv"qt"gpewo dtcpeg"kp."qt"gzvgpf kpi "qt" cwcej kpi "\q."uwej "uj ctgu."ugewtk\gu+"\gtext\gu "kp\gtguv"yj gtgkp."cpf"yj g" y qtf "\overline{v} tgf \overline{v} tgf \ov
- eee0 õVtkdwpcrö"uj cml'o gcp" yi g"P cvkqpcnl'Eqo r cp{"Ncy "Vtkdwpcnl'eqpuvkwwgu"wpf gt"Ugevkqpb2: "qh'yi g'Eqo r cpkgu'Cev." 4235."cu'co gpf gf 0'

D0 EQPUVTWEVKQP"

Kp''yi gug''Ctvkergu'*wprguu'yi g''eqpvgzv'tgs wktgu''qyi gty kug+K''

- *k+ Tghgtgpegu'\q"c"Rgtuqp"uj cm"y j gtg"vj g"eqpvgzv'r gto ku."kpenwf g"uwej "Rgtuqpøu'tgur gevkxg"uweeguuqtu."ngi cn'j gktu'cpf "r gto kwgf "cuuki pu0"
- *kk+ Vj g"f guetkr vkxg"j gcf kpi u"qh"Ctvkergu"ctg"kpugtvgf "uqrgn("hqt"eqpxgpkgpeg"qh"tghgtgpeg"cpf "ctg"pqv"kpvgpf gf "cu"eqo r rgvg" qt"ceewtcvg"f guetkr vkqpu"qh"eqpvgpv'vj gtgqh"cpf "uj cm"pqv"dg"wugf "vq"kpvgtr tgv"vj g"r tqxkukqpu"qh"vj gug"Ctvkergu"cpf "uj cm" pqv"chtgev"vj g"eqpuvtwevkqp"qh"vj gug"Ctvkergu"
- **Wik+ Tghgtgpegu" vq"ctvkengu"cpf" uwd/ctvkengu"ctg"tghgtgpegu"vq"Ctvkengu"cpf" Uwd/ctvkengu"qh"cpf vq"y gug"Ctvkengu"wpnguu"qyi gty kug"uvcvgf "cpf" 'tghgtgpegu'vq"y gug"Ctvkengu'kpenwf g"tghgtgpegu'vq"y g"ctvkengu'cpf "Uwd/ctvkengu'j gtgkp0'
- *kx+ Y qtf u"ko r qt kpi "vj g"ukpi wct"kpenwf g"vj g"r nwtcn'cpf "xkeg"xgtuc."r tqpqwpu"ko r qt kpi "c"i gpf gt "kpenwf g"gcej "qh"vj g" o cuewkpg. 'hgo kpkpg"cpf 'pgwgt 'i gpf gtu. 'cpf 'y j gt g'c'y qtf 'qt 'r j tcug'ku'f ghkpgf . 'qvj gt 'r ctwi'qh'ur ggej 'cpf 'i tco o cwecn' hqto u'qh'vj cv'y qtf 'qt'r j tcug'uj cm'j cxg"vj g"eqttgur qpf kpi "o gcpkpi u0'
- *x+ Y j gtgxgt''vj g''y qtf u''õkpenxf g.ö''õkpenxf gu.ö''qt''õkpenxf kpi ö''ku''wugf ''kp''vj gug''Ctvkengu.''uwej ''y qtf u''uj cm'dg'' hqmqy gf ''d{ ''vj g''y qtf u''ōy kyj qw'nko kxcvkqpö0'
- *xk+ Vj g"vgto u"õj gtgqhö."õj gtgkpö."õj gtgkpö."õj gtgkpf gtö"qt"uko krct"gzr tguukqpu"vugf "kp"vj gug "Ctvkergu"o gcp"cpf "tghgt"vq" vj gug "Ctvkergu"cpf "pqv'\q"cp{ 'r ctvkevrct "Ctvkerg"qh'vj gug "Ctvkergu."vprguu"gzr tguun("uvcvgf"qvj gty kug0'
- *xkk+Wprguu"qyi gty kug"ur gekhlef."vko g"r gtkqf u"y kyi kp"qt"hqmqy kpi "y j kej "cp{"r c{o gpv"ku"vq"dg"o cf g"qt"cev"ku"vq"dg"f qpg" uj cm"dg"ecnewrcygf "d{"gzenwf kpi "yi g"f c{"qp"y j kej "yi g"r gtkqf "eqo o gpegu"cpf "kpenwf kpi "yi g"f c{"qp"y j kej "yi g"r gtkqf gpf u"cpf "d{"gzvgpf kpi "yi g"r gtkqf "vq"yi g"pgzv"Dwukpguu"F c{"hqmqy kpi "kh"yi g"rcuv"f c{"qh"uwej "r gtkqf "ku"pqv"c"Dwukpguu"F c{="cpf"y j gpgxgt"cp{"r c{o gpv"ku"vq"dg"o cf g"qt"cevkqp"vq"dg"cngp"wpf gt"yi gug"Ctvkengu"ku"tgs wktgf "vq"dg"o cf g"qt" vcngp"qp"c"f c{"qyi gt"yi cp"c"Dwukpguu"F c{."uwej "r c{o gpv"uj cm"dg"o cf g"qt"cevkqp"vcngp"qp"yi g"pgzv"Dwukpguu"F c{"hqmqy kpi 0"
- *xkkk+ C'tghgtgpeg'\q'c'Rgtuqp'dgkpi 'hcdrg'\q'cpqyi gt'Rgtuqp."qt'\q'hcdkrk\{.'kpenwf gu."dw'ku'pqv'ho kgf '\q."cp\{ 'hcdkrk\{ 'kp'' gs wkv\{."eqpvtcev'qt'\qtv*kpenwf kpi 'pgi rki gpeg+0'
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- *z+ Tghgtgpegu"vq"cp{"rctvkewct"pwo dgt"qt"rgtegpvci g"qh"ugewtkskgu"qh"c"Rgtuqp"*y j gyj gt"qp"c'Hvm("Fkmvgf "Dcuku"qt" qyj gty kug+"uj cm'dg"cflwurgf "hqt"cp{"hqto "qh"tguvtwewtkpi "qh"yj g"uj ctg"ecr kxcn'qh"yj cv"Rgtuqp."kpenvf kpi "y kyj qw' nko kxcvkqp."eqpuqnkf cvkqp"qt"uvdf kxkukqp"qt"ur nkvkpi "qh"ku"ugewtkskgu."kunvg"qh"dqpwu"ugewtkskgu."kunvg"qh"ugewtkskgu"kp"c" uej go g"qh"cttcpi go gpv\%penvf kpi "co cni co cvkqp"qt"f g/o gti gt+"cpf "tgencuukhecvkqp"qh" Gs wkx{"Uj ctgu"qt"xctkcvkqp"qh" tki j w"kpvq"qyj gt"nkpf u"qh"ugewtkskgu"
- *zk+ Tghgtgpegu'o cf g'\q'cp{"rtqxkılqp"qh'\j g'Cev'\ij cm'dg'eqpuvtwgf "cu'o gcplpi " cpf 'lpenwf lpi '\j g'tghgtgpegu'\q'\j g'twgu" cpf 'tgi wrc\lqpu'o cf g'lp'tgrc\lqp'\q'\j g'lco g'd{ '\j g'O ECOVj g'crrnlecdng'rtqxkılqpu'qh'\j g'Eqo rcplgu'Cev.'3; 78'\ij cm' egcug'\q'j cxg'ghgev'htqo '\j g'f cvg'qp'y j lej '\j g'eqttgurqpf lpi 'rtqxkılqpu'\wpf gt'\j g'Cev'j cxg'dggp'pq\lhkgf 0'
- *zkk+kp"\j g"gxgpv'cp{"qh'\j g"rtqxkukqpu"qh'\j g"Ct\kengu'ctg"eqp\tct{"\q"\j g"rtqxkukqpu"qh'\j g"Ce\cpf "\j g"Twrgu."\j g"rtqxkukqpu"qh'\j g"Ce\cpf "Twrgu'\y km'rtgxckr0"

50 GZRTGUUKQPU'KP'VJ G'CEV'CPF'VJ GUG'CTVKENGU'

 $\label{lem:condition} \begin{tabular}{l} $Lexg''cu''chqtguckf."cp{''y qtfu'qt''gzrtguukqpu''f ghkpgf''kp''y g''Cev'uj cm''kh''pqv'kpeqpukuvgpv'y kyj''y g''wdlgev'qt''eqpvgzv."dgct''y g''uco g''o gcpkpi''kp''y gug''Ctvkergu0'' \\ \end{tabular}$

60 UJ CTG'ECRE/CN"

- *c+" Vj g"cwj qtkugf "Uj ctg"Ecr kcn'qh'vj g"Eqo r cp{"uj cm'dg"cu'uvcvgf "wpf gt"Encwug"X"qh'vj g"O go qtcpf wo "qh'Cuuqekcvkqp" qh'vj g"Eqo r cp{"htqo "vko g"vq"vko g0"
- $\label{eq:continuity} $$^d+"Vjg'Eqorcp{''jcu'rqygt.'htqo''klog''vq''klog.''vq''klog''ku'cwjqtkugf''qt''kuuwgf''cpf''Rckf/wr''Ujctg''EcrkcnU''}$$
- *e+" Vj g"Uj ctg'Ecr kxcn'qh''y g'Eqo r cp{"o c{"dg"encuukhkgf "kpvq"Gs wkx{"Uj ctgu'y kyj "f khhgtgpvkcn'tki j vu'cu'vq"f kxkf gpf.'xqvkpi "qt"qyj gty kug"kp"ceeqtf cpeg'y kyj "y g"crr necdng"r tqxkukqpu"qh'y g"Cev.'T wngu."cpf "Ncy.'htqo "vko g"vq'vko g0"
- *f +" Uwdlgev'vq"Ctvkerg"6*f + "cm'Cs wkx{ "Uj ctgu'uj cm'dg"qh'vj g"uco g"encuu"cpf "uj cm'dg"cnkng"kp"cm'tgur gevu"cpf "vj g"j qnf gtu" vj gtgqh'uj cm'dg"gpvkurgf "vq'kf gpvkecn'tki j vu"cpf 'r tkxkrgi gu'kpenwf kpi 'y kyj qw'hko kcvkqp"vq'kf gpvkecn'tki j vu"cpf 'r tkxkrgi gu" y kyj 'tgur gev'vq'f kxkf gpf u."xqvkpi 'tki j vu."cpf 'f kwtkdvwkqp"qh'cuugw'kp"vj g"gxgpv'qh'xqnwpvct { "qt 'kpxqnwpvct { 'nks wkf cvkqp." f kwqnwkqp"qt 'y kpf kpi "wr "qh'vj g"Eqo r cp{0'
- *g+" Vj g"Dqctf "o c{"cmqv'cpf "kuwg"ugewtkkgu"qh'yi g"Eqo r cp{"cu"r c{o gpv'qt"r ctv'r c{o gpv'hqt"cp{"r tqr gtv{"r wtej cugf "d{" yi g"Eqo r cp{"qt"kp"tgur gev'qh'i qqf u"uqnf "qt"vtcpulgttgf"qt"o cej kpgt{"qt"cr r ncpegu"uwr r ncf "qt"hqt"ugtxkegu"tgpf gtgf" vq"yi g"Eqo r cp{"lp"qt"cdqww'yi g"hqto cwlqp"qh'yi g"Eqo r cp{"qt"yi g"ces wkukkqp"cpf lqt"kp"yi g"eqpf wev'qh"kuu'dwukpguu"qt" hqt"cp{"i qqf y kni'r tqxkf gf "vq"yi g"Eqo r cp{="cpf"cp{"ugewtkkgu"y j kej "o c{"dg"uq"cmqwgf"o c{"dg"kuwgf"cu'hwm{lr ctvn{"r ckf "wr "ugewtkkgu"Cpf"kh'uq"kuwgf"yi gcm'dg" ggo gf "cu'hwm{lr ctvn{"r ckf "wr "ugewtkkgu0J qy gxgt."yi g"chqtguckf" uudlgev'vq"yi g"cr r tqxcn'qh'uj ctgj qnf gtu'wpf gt"yi g"tgngxcpv'r tqxkukqpu"qh'yi g"Cev'cpf "T wrgu0"
- *h+" Vj g"co qwpv'r c{cdrg"qp"cr r rkecvkqp"qp"gcej "uj ctg"uj cm'pqv'dg"rguu" yj cp"7"r gt "egpv'qh" yj g"pqo kpcrl'xcrwg"qh'' yj g"uj ctg" qt."cu"o c{ "dg"ur gekhkgf "d{ "UGDKO"
- *i +" Pqy kpi "j gtgkp"eqpvckpgf "tij cm"r tgxgpv"yj g"Fktgevqtu"htqo "kuuvkpi "hwm("r ckf/wr "tij ctgu"gksj gt"qp"r c{o gpv"qh"yj g"gpvktg" pqo kpcn"xcnwg"yj gtgqh"kp"ecuj "qt"kp"ucvkuhcevkqp"qh"cp{"qwuvcpf kpi "f gdv"qt"qdnki cvkqp"qh"yj g"Eqo r cp{0"
- *j +" Gzegr v'uq 'hct "cu'qyi gty kug'r tqxkf gf "d { "'yi g"eqpf kkqpu'qh'kuwg"qt''d { "yi gug'r tgugpvu."cp { "Ecr kcn'tckugf "d { "'yi g"etgcvkqp" qh'pgy "Gs wkx{ "Uj ctgu."uj cm'dg"eqpukf gtgf "cu'r ctv'qh''yi g"gzkuxkpi "Ecr kcn'cpf "uj cm'dg'uwdlgev'vq''yi g"r tqxkukqpu''j gtgkp" eqpvckpgf "y kyi "tghgtgpeg"vq''yi g'r c { o gpv'qh'ecmu'cpf "kpuvcmo gpvu. "hqthgkwtg. "hgp. "uwttgpf gt. "tcpuhgt "cpf "tcpuo kuukqp." xqvkpi "cpf "qyi gty kug0"
- *k+" Cm'qh'vj g'r tqxkukqpu'qh'vj gug'Ctvkengu'uj cm'cr r n('vq'vj g'Uj ctgj qnf gtu0'
- *1+" Cp{"crrnlecvkqp"uki pgf "d{"qt"qp"dgj cnh'qh'cp"crrnlecpv'hqt"uj ctgu'kp"yj g"Eqorcp{."hqmqy gf "d{"cp"cmqvo gpv'qh'cp{" Gs wkx{"Uj ctgu"yj gtgkp."uj cm'dg"cp"ceegr vcpeg"qh'uj ctgu'y kyj kp"yj g"o gcpkpi "qh'vj gug"Ctvkengu"cpf "gxgt{"r gtuqp"yj q" yj wu'qt"qyj gty kug"ceegr wu'cp{"uj ctgu"cpf "yj qug"pco g"ku"qp"yj g"Tgi kuvgt"qh'O go dgtu"uj cm'hqt"yj g"r wtr qugu"qh'vj gug" Ctvkengu"dg"c"Uj ctgj qnf gt0'
- *m#" Vj g"o qpg{."*kh"cp{+"y j kej "vj g"Dqctf "uj cm"qp"vj g"cmqvo gpv"qh"cp{"ugewtkkgu"dgkpi "o cf g"d{"vj go ."tgs wktg"qt "f ktgev" vq"dg"r ckf "d{"y c{"qh"f gr qukx."ecm"qt "qvj gty kug. "kp"t gur gev"qh"cp{"ugewtkkgu"cmqwgf "d{"vj go ."uj cm"ko o gf kcvgn{"qp"vj g" kpugt vkqp"qh"vj g"pco g"qh"vj g"cmqwgg. "kp"vj g"Tgi kuvgt "qh"O go dgtu"cu"vj g"pco g"qh"vj g"j qrf gt "qh"uwej "Gs wkx{"Uj ctgu." dgeqo g"c"f gdv"f wg"vq"cpf "tgeqxgtcdrg"d{"vj g"Eqo r cp{"htqo "vj g"cmqwgg"vj gtgqh"cpf "uj cm"dg"r ckf "d{"j ko "ceeqtf kpi n{0}"



70 DTCPEJ 'QHHKEGU''

Vj g"Eqo r cp{"uj cm"j cxg"vj g"r qy gt"vq"guvcdrkuj "qpg"qt"o qtg"dtcpej "qhhkegu."kp"cf f kklqp"vq"vj g"Qhhkeg."kp"uwej "r roegu"cv"ku" Dqctf "o c{ 'f ggo 'hkv0'

RTGHGTGPEG'UJ CTGU'

*c+ Tgf ggo cdrg'Rtghgtgpeg'Uj ctgu"

Vjg"Eqorcp{."uwdlgev'vq"vjg"crrnlecdng"rtqxkulqpu"qh"vjg"Cev'cpf"vjg"eqpugpv'qh"vjg"Dqctf."ujcm"jcxg"vjg"rqygt"vq"kuuwg" qp"c"ewo wrcykxg"qt"pqp/ewo wrcykxg"dcuku."r tghgtgpegtij ctgu"hcdrg"\q"dg"tgf ggo gf "kp"cp{ "o cppgt"r gto kuukdrg"\wpf gt"\yj g"Cev" cpf "r tqxkf g"hqt"tgf go r vkqp"qh'uwej "uj ctgu"qp"uwej "vgto u"kpenxf kpi "vj g"tki j v'vq"tgf ggo "cv'c"r tgo kwo "qt"qvj gty kug"cu"vj g{" fggo 'hko0'

 $^*d+$ Eqpxgt *d go cdrg'Rtghgtgpeg''Uj ctgu''

Vj g"Eqorcp{."uwdlgev"q"yj g"crrnlecdrg"rtqxkukqpu"qh"yj g"Cev"cpf" yj g"eqpugpv"qh"yj g"Dqctf."uj cm"j cxg"rqy gt"\q"kuuvg"qp"c" $ewo\ wrc vkxg" qt"pqp/ewo\ wrc vkxg" dcuku" eqpxgt vkdrg" tgf ggo\ cdrg" rtghgt gpeg" uj\ ctgu" nhcdrg" vq" dg" tgf ggo\ gf "kp" cp \{"o\ cppgt" nhcdrg" vq ug" tgf ggo\ gf up" cpgt uj\ ctgu" nhcdrg up" ctgu" nhcdrg up" ctgu" nhcdrg up" ctgu" nhcdrg up" ctgu up" ctgu" nhcdrg up" ctgu" ctgu" nhcdrg up" ctgu" ctgu" nhcdrg up" ctgu" nhcdrg up" ctgu" ctgu" nhcdrg up" ctgu" ctgu" nhcdrg up" ctgu" ctgu" nhcdrg up" ctgu" ctgu" ctgu" ctgu" nhcdrg up" ctgu" ctgu"$ $r\ gto\ \textit{kuukdrg''wpf}\ gt''\ j\ g''Cev''cpf''\ j\ g''F\ ktgevqtu''o\ c\{.''uwdlgev''\ vq''\ j\ g''cr\ r\ n'ecdng''r\ tqxkukqpu''\ qh''\ j\ g''Cev.''gz\ gtekug''uwej\ ''r\ qy\ gt''cu''$ yjg{"fggo "hkv"cpf"rtqxkfg"hqt"tgfgorvkqp"cv"c"rtgokwo"qt"qyjgtykug"cpf lqt"eqpxgtukqp"qh"uwej"ujctgu"kpvq"uwej"Ugewtkkgu" qp'uwej '\gto u'cu'\yj g{ '\o c{ '\f ggo '\hk0'}

RTQXKUQPUKP'ECUG'QH'RTGHGTGPEG'UJ CTGU'

Wr qp"yj g"kuwg"qh"r tghgtgpeg"uj ctgu"r wtuwcpv'\q"Ct\keng'8"cdqxg."\yj g"hqmqy kpi "r tqxkukqpu'\uj cm'cr r n(<"

- *c+ Pq'uwej 'rtghgtgpeg'uj ctgu'uj cm'dg'tgfggogf'gzegrv'qw'qh'rtqhku'qh'vjg'Eqorcp{'yjkej 'yqwrf'qvjgtykug'dg'cxckncdng'' hqt"Fkxkfgpf"qt"qw"qh"yjg"rtqeggfu"qh"c"htguj"kwwg"qh"ugewtkkgu"ocfg"hqt"yjg"rwtrqugu"qh"yjg"tgfgorkqp="
- *d+ Pq'uwej 'r tghgtgpeg'uj ctgu'uj cm'dg'tgfggogf'wpnguu'yjg{'ctg'hwm{'r ckf="
- *e+ Vjg'rtgokwo.'kh'cp{.'rc{cdng'qp'tgfgorwlqp''ujcm'jcxg'dggp'rtqxkfgf'hqt'qw'qh''jg'rtqhkuu'qh'yjg'Eqorcp{'qt'qw'qh' yj g"Eqorcp{øu'ugewtkkgu'rtgokwo''ceeqwpv."dghqtg"yj g"rtghgtgpeg'uj ctgu''ctg'tgf ggogf="
- *f+ Yjgtg"cp{"uwej"rtghgtgpeg"ujctgu"ctg"rtqrqugf"vq"dg"tgfggogf"qw"qh"vjg"rtqhkuu"qh"vjg"Eqorcp{."vjgtg"ujcm"qw"qh" uwej "rtqhkuu."dg"tcpuhgttgf."c"uwo "gs wcn'\q"yj g"pqo kpcn'co qwpv'qh'yj g"uj ctgu"\q"dg"tgf ggo gf."\q"c"tgugtxg."\q"dg"ecmgf" yj g"öEcr kxnlTgf go r klqpTgugtxg"Ceeqwpvö"cpf "yj g"cr r nlecdng"r tqxkulqpu"qh"yj g"Cev'tgncklpi "vq"yj g"tgf weklqp"qh"yj g" Uj ctg'Ecr kxcı'qh'yj g'Eqo r cp{'uj cm''gzegr v'cu'r tqxkf gf 'd{'Ugevkqp''77'qh'yj g'Eqo r cpkgu'Cev.''4235.''cu'co gpf gf .''cr r n{'' $cu'lh''y \; g'Ecr\; kcn'Tgf\; go\; r\; lkqp''Tgugtxg''Ceeqwpv'y \; gtg''Rckf\; 'wr\; 'Uj\; ctg''Ecr\; kcn'qh''y \; g''Eqo\; r\; cp \{ \pm in the content of the content of$
- *g+ Vjg"tgfgorwkqp"qh"rtghgtgpeg"ujctgu"wpfgt"yjku"Ctwkeng"d{"vjg"Eqorcp{"ujcm'pqv'dg"vcmgp"cu"tgfwewkqp"qh"Ujctg" Ecr kcn="
- *h+Vjg"Ecrkscn"Tgfgorvkqp"Tgugtxg"Ceeqwpv"oc{."pqwykjuncpfkpi"cp{vjkpi"kp"vjkul"Ctvkeng.dg"crrnkgf"d{"vjg"Eqorcp{." kp"rc{kpi "wr "wp/knuwgf "uj ctgu"qh''yj g"Eqorcp{"vq"dg"knuwgf "q"yj g"Uj ctgj qnf gtu"cu'hwnn{ 'r ckf "dqpwu'uj ctgu≕cpf"
- *i+ Yjgpgxgt" yjg" Eqorcp{"ujcm'tgfggo"cp{"tgfggocdmg"rtghgtgpeg"ujctgu"qt"ewowncwkxg"eqpxgtwldmg"tgfggocdmg" $rtghgtgpeg"uj~ctgu."uj~g"Eqo~rcp{"uj~cm"y~kj~kp"52"*ij~ktv{+"f~c{u"uj~gtgchygt."i~kxg"pqvkeg"uj~gtgqh"vq"uj~g"Tgi~kuvtct"qh"}}\\$ Eqo r cpkgu'cu'tgs wkt gf 'd{ 'Uge-kqp'86'qh'vj g'Eqo r cpkgu'Cev.'4235.'cu'co gpf gf 0'

UJ CTG'GS WKXCNGPV'' :0

Vj g"Eqo r cp{ "uj cm" uwdlgev' 'q" 'yj g" cr r n'ecdng" r tqxkulqpu "qh" 'yj g" Cev. "eqo r n'cpeg" y kyj "Ncy "cpf" 'yj g" eqpugpv' qh" 'yj g" Dqctf ." j cxg"yj g"r qy gt"vq"kuuwg"Uj ctg"Gs wkxcrgpwl"qp"uwej "vgto u"cpf"kp"uwej "o cppgt"cu"yj g"Dqctf"f ggo u"hkv"kpenwfkpi "vj gkt" eqpxgtukqp."tgrc{o gpv."cpf 'tgf go r kkqp"y j gyj gt"cv"c"r tgo kwo "qt"qyj gty kug0"

;0 CFTU11 FTU"

Vj g'Eqo r cp{ 'uj cm 'uwdlgev'vq''y g'crr nlecdrg'r tqxkulqpu'qh''y g'Cev.'eqo r nlcpeg'y ky "cmlNcy u'cpf "y g'eqpugpv'qh'y g'Dqctf." j cxg'\j g'r qy gt'\q'kuwsg'CFTu'qt'IFTu'qp'uwej '\gto u'cpf'kp'uwej 'o cppgt'cu'\j g'Dqctf'f ggo u'lkv'kpenwfkpi '\j gkt'eqpxgtukqp''



 $cpf 'tgr c \{o gpv0'Uwej ''vgto u''o c \{''lxpenwf g''cv''y g'f' knetgvlqp''qh''y g'Dqctf .''ho kxcvlqpu''qp''xqvlxpi ''d \{''j qnf gtu''qh''CFTu''qt''I FTu.'' kpenwf kpi ''y ky qww''ho kxcvlqp.''gzgtekug''qh''xqvlxpi ''tki j wu''kp''ceeqtf cpeg'y kyj ''y g''f ktgevlqpu''qh''y g''Dqctf 0''$

320 CNVGTCVKQP'QH'UJ CTG'ECRKVCN''

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 $\label{twopp} $$ Uwdlgev''vq''vj gug''Ctvkergu''cpf "Uge-kqp"83"qh''vj g''Eqo r cpkgu''Cev."4235."cu''co gpf gf."vj g''Eqo r cp{"o c{."d{"Qtf kpct{"Tguqnwkqp''kp''I gpgtcrlO ggvkpi 'htqo ''ko g''vq''ko g."cnxgt''vj g''eqpf kkqpu''qh'kxu'O go qtcpf wo ''cu''hqmqy u."vj cv'ku''vq''uc{."kv''o c{<"."u''vj g'''vq''vc'''."v''vq''vc'''.} $$$

- *c+" kpetgcug'kwu'Uj ctg'Ecr kxcn'd{ "uwej "co qwpv'cu'kv'vj kpmu'gzr gf kgpv="
- $\label{eq:condition} $$^*d+" eqpuqntf cvg"cpf "f kxkf g"cm'qt"cp{ "qh'kwi"Uj ctg"Ecr kxcrlkpvq"uj ctgu"qh'nxti gt"co qwpv'vj cp'kwi"gz kuvkpi "uj ctgu=" on the condition of t$

 $Rtqxkf gf "'y cv'pq" eqpuqrkf cvkqp" cpf "f kxkukqp" y j kej "tguwmu" kp" ej cpi gu" kp" yj g"xqvkpi "r gtegpvci g"qh'uj ctgj qrf gtu'uj cm'vcng" ghgev'wprguu'kv'ku'' cr r tqxgf "d{ ''y g"Vtkdwpcn'qp" cp" cr r kecvkqp" o cf g'kp" yj g"r tguetkdgf "o cppgt0'$

- *e+" eqpxgtv"cm"qt"cp{"qh"ku"hwm{"Rckf/wr "uj ctgu"kpvq"uvqem"cpf "tgeqpxgtv"vj cv"uvqem"kpvq"hwm{"Rckf/wr "uj ctgu"qh"cp{" f gpqo kpcvkqp"
- *f +" uwd/f kxkf g"ku'uj ctgu."qt"cp{ "qh''yj go ."kpvq"uj ctgu''qh'uo cmgt"co qwpv''yj cp"ku''hkzgf "d{ "'yj g"O go qtcpf wo ."uq"j qy gxgt."
 yj cv'kp''yj g''uwd/f kxkukqp''yj g''r tqr qtvkqp''dgwy ggp''yj g''co qwpv''r ckf "cpf "'yj g''co qwpv."kh''cp{ ."wpr ckf "qp"gcej "tgf wegf "uj ctg"
 uj cm'dg''yj g''uco g''cu''kv'y cu'kp''yj g''ecug''qh''yj g''tgf kregf "'yj g''tgf wegf "uj ctg''ku'f gtkxgf ="cpf"
- *g+" ecpegn'uj ctgu'y j kej ."cv'yj g'f cwg'qh'yj g'r cuukpi "qh'yj g'tguqnwkqp"kp"yj cv'dgj cnh "j cxg"pqv'dggp"vcngp"qt"ci tggf "vq"dg" vcngp"d{ "cp{ "r gtuqp."cpf "f ko kpkıj "yj g"co qwpv'qh"ku"Uj ctg"Ecr kcn'd{ "yj g"co qwpv'qh'yj g"uj ctgu"uq"ecpegngf 0'C" ecpegncwqp "qh'uj ctgu"kp'r wtuwcpeg"qh'yj ku"Ctvkeng'uj cm'pqv'dg"f ggo gf "vq"dg"c"tgf wevkqp"qh'Uj ctg"Ecr kcn'y kyj kp"yj g" o gcpkpi "qh'yj g"Cev0'

330 TGFWEVKQP'QH'UJ CTG'ECRKVCN"

33

 $\label{thm:conditional} Vj\ g"Eqo\ r\ cp{"o\ c{."uwdlgev"vq"vj\ g"crr\ necdng"r\ tqxkukqpu"qh"vj\ g"Cev"htqo\ "vb\ g"vq"vb\ g."tgf\ weg"ku"Ecr\ kcn"cp{"ecr\ kcn"tgf\ go\ r\ vkqp"tgugtxg"ceeqwpv"cpf "vj\ g"ugewtkkgu"r\ tgo\ kwo\ "ceeqwpv"kp"cp{"o\ cppgt"hqt"vj\ g"dko\ g"dgkpi\ "cwj\ qtk\ gf"d{"Ncy\ 0"Vj\ ku"\ Ct\ keng"ku"pqv'vq"f\ gtqi\ cvg"cp{"r\ qy\ gt"vj\ g"Eqo\ r\ cp{"y\ qwf\ "j\ cxg"wpf\ gt"Ncy\ ."kl'kv'y\ gtg"qo\ kwgf\ 0'}$

340 RQY GT'QHEQO RCP['VQ'RWTEJ CUG'KVUQY P'UGEWTKVKGU'

"

 $Rwtuwcpv''vq''c''tguqnwkqp''qh''yj g''Dqctf.''yj g''Eqorcp{"oc{"rwtej cug"ku''qypp''Gswkx{"Ujctgu''qt''qyjgt''Ugewtkkgu."cu''oc{"dg"urgekhkgf''d{"yjg''OEC.''d{"yc{"qh''c''dw{/dcenl'cttcpigogpv''kp''ceeqtfcpeg''ykj''Ugewkqpu''8:.''8; "cpf''92''qh''yjg''Eqorcpkgu''Cev.''4235.''cu''cogpfgf.''yjg''Twrgu''cpf''twdlgev''vq''eqornkcpeg''ykj''Ncy0''}$

350 RQY GT'VQ'O QFHH 'TH J VU''

...

 $Y\ j\ gtg."\ iy\ g"Ecr\,kcn"kı"\ fkxlf\ gf\ "*wprguu"\ qiy\ gty\ kug"r\ tqxklf\ gf\ "d\{"iy\ g"yto\ u"qh"kuwg"qh"iy\ g"uj\ ctgu"qh"'yi\ cv'encuu+"kpvq"f\ khlgtgpv'encuugu"\ qh"uj\ ctgu."cm"\ qt"cp\ "qh"iy\ g"tki\ j\ w"cpf"r\ tkxkrgi\ gu"cwcej\ gf\ "vq"gcej\ ëncuu"o\ c\."uwdlgev'vq"iy\ g"r\ tqxkukqpu"\ qh"Ugevkqp"6: "qh"iy\ g"Eqo\ r\ cpkgu"Cev."4235."cu"co\ gpf\ gf\ "cpf\ "Ncy\."cpf\ "y\ j\ giy\ gt"qt"pqv'iy\ g"Eqo\ r\ cp\ "ku"dgkpi\ "y\ qwpf\ "wr\."dg"o\ qf\ khlgf\."eqo\ o\ wgf\.."chlgevgf\ "qt\ "cdtqi\ cvgf\ "qt\ "g\ gruvy\ ky\ "d\ "ci\ tggo\ gpv'dgw\ ggp"\y\ g"Eqo\ r\ cp\ "cp\ "Rgtuqp"r\ wr\ qt\ kpi\ "vq\ "eqpvtcev'\ qp"dgj\ ch'iqh'iy\ cv'encuu\."r\ tqxkf\ gf\ "y\ g"kuvgf\ "y\ ky\ "eqpugpv'lp\"y\ tkkpi\ "cpf\ "d\ "y\ c\ "qh"c\ Ugekcn'Tguqnwkqp"r\ cuugf\ "cv'\ c'ugr\ ctcvg"o\ ggykpi\ "qh'iy\ g"y\ gr\ tqxkukqpu'\ g''kuwgf\ "iy\ ctgu'qh'\ y\ c''encuuO'Uwdlgev'\ q''Uge\ qp''6\ "4+"qh'iy\ g''Eqo\ r\ cpkgu''Cev\ "4235."\ cu''co\ gpf\ gf\ "cpf\ "Ncy\."cmi'\ tqxkukqpu'\ gtgchgt''eqpvckpgf\ "cu'\q1\ gpgtcn'O\ ggykpi\ u''\ kpenwf\ kpi\ "y\ g''r\ tqxkukqpu'\ tgnc\ kpi\ "q''s\ wqtwo\ "\ cv''uwej\ "o\ ggykpi\ u+''uj\ cm'o\ wcyku'\ o\ wcyku''o\ wcyf\ ku''cr\ r\ n'\ "q''gxgt\ "uwej\ "o\ ggykpi\ 0''$

360 TGI KVGTUVQ'DG'O CKP VCKP GF 'D['VJ G'EQO RCP["

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- *c+ Vj g"Eqo r cp{"uj cm"kp"vgto u"qh"vj g"r tqxkukqpu"qh"Ugevkqp": : "qh"vj g"Eqo r cpkgu"Cev.4235."cu"co gpf gf ."ecwug"vq" dg"ngr v'vj g"hqmqy kpi "tgi kuvgtu"kp"vgto u"qh"vj g"cr r necdug"r tqxkukqpu"qh"vj g"Cev."
- *k+ C"Tgi kuvgt"qh"Ogo dgtu"kpf kecvkpi "ugr ctcvgn("hqt"gcej "encuu"qh"Gs wkv{"Uj ctgu"cpf i'tghgtgpeg"uj ctgu"j grf "d{"gcej "Uj ctgj qrf gt"tgukf kpi "kp"qt"qwukf g"Kpf kc="
- $^*\k+$ C''tgi kuvgt''qh'F gdgpwtg''j qrf gtu="cpf''
- *kkk+ C"tgi kuvgt"qh"cp{"qvj gt"ugewtkv{"j qnf gtu0"

...



- *d+ Vj g"Eqo r cp{"uj cm'cnuq"dg"gpvkurgf "vq"nggr "lp"cp{"eqwpvt{"qwukf g"Kpf kc."c"r ctv'qh''vj g"tgi kuvgtu"tghgttgf "cdqxg."ecmgf " õhqtgki p"tgi kuvgtö"eqpvckpkpi "pco gu"cpf "r ctvkewrctu"qh''vj gUj ctgj qnf gtu." F gdgpwtg" j qnf gtu" qt" j qnf gtu" qh" qvj gt" Ugewtkkgu" qt" dgpghkekcn' qy pgtut'gukf kpi "qwukf g"Kpf kc0"
- *e+ Vj g"tgi knygtu"o gpvkqpgf "kp"yj ku"Ctvkeng"uj cm'dg"ngr v'cpf "o ckpvckpgf "kp"yj g"o cppgt "r tguetkdgf "wpf gt"yj g"Eqo r cpkgu"
 *O cpci go gpv'cpf "Cf o kpkntcvkqp+"Twrgu."42360'

370 UJ CTGUCPF'UJ CTG'EGTVIHIECVGU'

- *c+ Vj g"Eqo r cp{ "uj cmlkuwg."tg/kuwg"cpf "kuwg"f wr nlecvg"uj ctg"egtvkhlecvgu"kp"ceeqtf cpeg"y kj "vj g"r tqxkukqpu"qh"vj g"Cev" cpf "kp"vj g"hqto "cpf "o cppgt"r tguetklgf "wpf gt"vj g"Eqo r cpkgu"*Uj ctg"Ecr kxcn"cpf "F gdgpwtgu+"Twrgu."42360'
- *d+ Vj g"Eqorcp{"uj cm'dg"gpvkngf"vq"fgocvgtkcnk|g"knu"gzknvkpi"uj ctgu."tgocvgtkcnk|g"knubj ctgu'j gnf'kp''yj g'fgrqukxqt{"cpf lqt"vq"qhhgt"knu"htguj "uj ctgu"kp"c"fgocvgtkcnk|gf"hqto"rwtuwcpv"vq"yj g"Fgrqukxqtkgu"Cev."cpf"yj g"twngu"htcogf"yj gtgwpfgt.'kh'cp{0'
- *e+ C"egtvkhlecvg. "kuuwgf "wpf gt" yj g"eqo o qp" ugcn'qh' yj g"Eqo r cp{."ur gekh{kpi "yj g"uj ctgu" j grf "d{"cp{"Rgtuqp" uj cm'dg"r tko c" hcekg"gxkf gpeg"qh" yj g"kwrg"qh" yj g"Rgtuqp" vq" uwej "uj ctgu0" Yj gtg" yj g"uj ctgu" ctgu" ctgu" j grf "kp" f gr qukxqt{"hqto ."yj g"tgeqtf" qh" f gr qukxqt{"uj cm'dg" yj g"r tko c"hcekg"gxkf gpeg"qh" yj g"kpygtguv"qh" yj g"dgpghkekcn'qy pgt0"
- *f + Kt"cp{"egtvkhecvg"dg" y qtp"qw."f ghcegf." o wkrcvgf "qt"vqtp"qt"kh"y gtg"dg"pq"hwty gt"ur ceg"qp"y g"dcem"y gtgqh"hqt" gpf qtugo gpv'qh"vtcpulgt "qt"kp"ecug"qh"uwd/f kxkukqp" qt"eqpuqrkf cvkqp"qh"uj ctgu."y gp"wr qp"r tqf wevkqp"cpf "uwttgpf gt" y gtgqh"vq"y g"Eqo r cp{."c"pgy "egtvkhecvg"o c{"dg"kunwgf "kp"rkgw"y gtgqh"cpf "kh"cp{"egtvkhecvg"ku"nquv"qt"f guvtq{gf "y gp" wr qp"r tqdh"y gtgqht"vq"y g"ucvkuhcevkqp"qh"y g"Eqo r cp{"cpf "qp"gzgewkqp"qh"uwej "kpf go pkx{"cu"y g"Eqo r cp{"f ggo u" cf gs wcwg."dgkpi "i kxgp."c"pgy "Egtvkhecvg"kp"rkgw"y gtgqht"j cm"dg"i kxgp"vq"y g"Rgtuqp"gpvkxrgf "vq"uwej "rquv"qt"f guvtq{gf" Egtvkhecvg"OCxgt{"Egtvkhecvg"wpf gt"y g"Ctvkergu"uj cm"dg"kunwgf "y ky qw"r c{o gpv"qh"hggu"kh"y g"F ktgevqtu"uj "f gekf g."qt" qp"r c{o gpv"qh"uwej "hggu"*pqv"gzeggf kpi "uwej "hqt"gcej "egtvkhecvg"cu"o c{"dg"r tguetkdgf" wpf gt"by +"cu"y g"F ktgevqtu"uj cm" r tguetkdg0"Rtqxkf gf "y cv"pq"hgg"uj cm"dg"ej cti gf "hqt"kunwg"qh"c"pgy "egtvkhecvg"kp"tgr rcego gpv"qh"yi qug"y j kej "ctg"qrf"." f ghcegf "qt"y qtp"qw"qt"y j gtg"ku"pq"hwty gt"ur ceg"qp"y g"dcem'y gtgph"hqt"gpf qtugo gpv"qh"vtcpuhgt0"

Rtqxkf gf "'y cv'pqw kj uvcpf kpi "y j cv'ku''uvcvgf "cdqxg." y g"F ktgevqtu''uj cm'eqo r n("y kj "'y g"cr r necdrg"r tqxkukqpu''qh''y g"Cev' cpf "Ncy "kpenwf kpi "'y g"twrgu''qt "tgi wrcvkqpu''qt "tgs wktgo gpwi'qh''cp{ "uvqem'gzej cpi g"cpf "'y g'twrgu''o cf g'wpf gt "y g"Ugewtkkgu" Eqpvtcewi'*Tgi wrcvkqp+"Cev." 3; 78. "qt "cp{ "uvcwvqt { "o qf khlecvkqp"qt" tg/gpcewo gpv'' y gtgqh "hqt" y g"ko g"dgkpi "kp'hqteg0'

- *g+" Vj g'r tqxkukqpu'qh'\j ku'Ct\keng'\ij cm'o wc\ku'o wcpf ku'crrn('\q'F gdgpwtgu'cpf 'qvj gt''Ugewtkkgu'qh'\j g''Eqorcp{0'
- *h+" Y j gp"c"pgy "uj ctg"egt \htdecvg"j cu"dggp"kuwgf "kp"r wtuwcpeg"qh'uwd/ctvkerg" \g+"qh"vj ku"Ctvkerg. "kv"uj cm"dg"kp"vj g"hqto "cpf" o cppgt "uvcvgf" \wpf gt "vj g"Eqo r cpkgu" \text{Uj ctg"Ecr kvcn"cpf "F gdgpwtgu+"T wrgu. "42360"}
- *i +" Y j gtg"c"pgy "tij ctg"egtvlikecvg"j cu"dggp"kuwgf "kp"r wtuwcpeg"qh"uwd/ctvlergu"*g+"qt"*h+"qh"y ku"Ctvlerg. "r ctvlewrctu"qh"gxgt {"uwej "tij ctg"egtvlikecvg"tij cm"dg"gpvgtgf "kp"c"Tgi kuvgt "qh"Tgpgy gf "cpf "F wr nlecvg"Egtvlikecvgu"o ckpvckpgf "kp"y g"hqto "cpf" o cppgt "ur gekhligf "wpf gt "yj g"Eqo r cpligu"*Uj ctg"Ecr kscn"cpf "F gdgpwtgu+"Twrgu."42360'
- *j +" Cmidrepnihqto u'\q'dg'\wgf "hqt'\kuwg'qh'\uj ctg'egt\khecvgu'\uj cmidg''r t\pvgf "cpf "\uj g"r t\pv\pi i "\uj cmidg''f qpg''qpn\("qp''\uj g'' \) cwij qt\k\("qh\"c'T guqnwkqp''qh'\uj g''Dqctf 0'\uj g''drepnihqto u'\uj cmidg''eqpugewkxgn\("o cej kpgópwo dgtgf "cpf "\uj g''hqto u'\cpf "\uj g''drepnihqto u'\uj g''r t\pv\pi i "qh'uwej "hqto u'\uj cmidg''ngr v'\p''\uj g''ewuvqf \{ "qh'\uj g'' Ugetgvct \{ "qt "\uj g'' t gtuqp''cu'\uj g''Dqctf "o c \{ "cwij qt\ull g''\uj g'' vtr qug''cpf "\uj g''Ugetgvct \{ "\ut u'\uj g''\uj g'' \uj g''\uj g'' \\uj g''\uj g''
- *k+" Vj g"Ugetgvct{"uj cm'ldg"tgur qpuklng"hqt"vj g"o ckpvgpcpeg."r tgugtxcvkqp"cpf "uchg"ewuvqf { "qh'cm'ldqqnu"cpf "f qewo gpvu" tgrcvkpi "vq"vj g'kuuvg"qh'uj ctg''egtvkhkecvgu'kpenwf kpi "vj g'drcpmhqto u'qh'vj g'uj ctg''egtvkhkecvg''tghgttgf "vq'kp''uwd/ctvkerg''*k+" qh'vj ku'Ctvkerg0'
- *1+" Cm'dqqmu"tghgttgf "vq"lp"uwd/ctvlerg"*1+"qh'vj ku"Ctvlerg. "uj cm'dg"r tgugtxgf "lp"vj g"o cppgt "ur gelkhlgf "lp"vj g"Eqo r cplgu"

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uj cm'dg'ugxgtcm("cu'y gm'cu'lqkpvn("hcdrg"hqt"vj g'r c{o gpv'qh'cm'kpuvcmo gpvu'cpf "ecmu'f wg'kp'tgur gev'qh'uwej "uj ctgu." cpf 'hqt"cm'kpekf gpvu'vj gtgqh'ceeqtf kpi "vq'vj gug'Ctvkergu0'

*o +" Gzegr v'cu'qtf gtgf "d{"c"eqwtv'qh'eqo r gvgpv'lwtkuf kevkqp"qt"cu"o c{"dg"tgs wktgf "d{"Ncy ."\j g"Eqo r cp{"uj cm'dg"gpvkxrgf" uq"ttgcv'\j g"Uj ctgj qnf gt"y j qug"pco g"cr r gctu"qp"\j g"Tgi kuvgt"qh'O go dgtu"cu'\j g"j qnf gt"qh'cp{"uj ctg"qt"y j qug"pco g" cr r gctu"cu"\j g"dgpghkekcn"qy pgt"qh"uj ctgu"kp"\j g"tgeqtf u"qh"\j g"F gr qukxqt {."cu"\j g"cduqnxwg"qy pgt"\j gtgqh"cpf" ceeqtf kpi n("uj cm'pqv'dg"dqwpf "vq"tgeqi pkug"cp{"dgpco k"\twuv'qt"gs wkx{"qt"gs wkxcdrg."eqpvkpi gpv'qt"q\j gt"encko "vq"qt" kpvgtguv'kp"uwej "uj ctg"qp"\j g'r ctv'qh'cp{"q\j gt"Rgtuqp"y j g\j gt"qt"pqv'j g"uj cm'j cxg"gzr tguu'qt"\to r rkgf "pqvkeg"\j gtgqht\) Vj g"Dqctf "uj cm'dg"gpvkxrgf "cv'\j gkt"uqrg"f kuetgvkqp"\q"tgi kuvgt"cp{"uj ctgu"kp"\j g"lqkpv'pco gu"qh"cp{"4"*wy q+"qt"o qtg" Rgtuqpu"qt"\j g"uvtxkxqt"qt"uvtxkxqtu"qh'\j go 0'

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- d+ Ka 'ld{ "ij g'eqpf kskqpu'qh'emqvo gpv'qh'ep{ 'lij ctg. "ij g'y j qrg'qt'r ctv'qh'ij g'co qwpv'ij gtgqh'lij cm'dg'r c{cdrg'ld{ 'kpuvemo gpvu." gxgt{ 'uwej 'kpuvemo gpv'uj cm'y j gp'f wg. "dg'r ckf 'vq'vj g'Eqo r cp{ 'ld{ "ij g'r gtuqp"y j q. "hqt"vj g''ko g''dgkpi . "uj cm'dg'vj g'' tgi knvgtgf 'j qnf gt 'qh'vj g'uj ctgu'qt'd{ 'j kn'gzgewqt''qt''cf o kpknvtcvqt0'
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- o qtg"yj cp"qpg"egt\khlecvg"cpf "f grkxgt { "qh"c"egt\khlecvg"qh"uj ctgu"\q"yj g"qpg"qt"ugxgtcri"lqkpv"j qrf gtu"uj cm'dg"uwlhlekgpv" f grkxgt { "\q"cm'luwej "j qrf gtu"u
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390 WPFGTY TK/WPI 'CPF'DTQMGTCI G''

- c+ Uwdlgev'vq"yi g"crrnecdng"rtqxkukqpu"qh"yi g"Cev"yi g"Eqorcp{"oc{"cv'cp{"vkog"rc{"c"eqookuukqp"vq"cp{"rgtuqp"kp" eqpukf gtcvkqp"qh"j ku"uwduetkdkpi "qt"ci tggkpi "vq"uwduetkdg"qt"rtqewtkpi "qt"ci tggkpi "vq"rtqewtg"uwduetkr kqp."*y j gyi gt" cduqnwgn{"qt"eqpf kwkqpcm{+."hqt"cp{"uj ctgu"qt"Fgdgpwtgu"kp"yi g"Eqorcp{"kp"ceeqtfcpeg"y kyi "yi g"rtqxkukqpu"qh"yi g" Eqorcpkgu"*Rtqurgewu'cpf"Cmqvogpv'qh"Ugewtkkgu+"Twrgu."42360'
- $d+ \quad Vj \ g"Eqo \ r \ cp{\ "cnuq."qp"cp{\ "kuuwg"qh'uj} \ ctgu"qt"F \ gdgpwtgu."r \ c{\ 'uwej \ "dtqngtci \ g"cu"o \ c{\ ''dg"ncy \ hwt0'}}$

3:0 ECNNU'

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- *c+ Uwdlgev'vq"yi g"r tqxkukqpu"qh"Ugevkqp"6; "qh"yi g"Eqo r cpkgu"Cev."4235."cu"co gpf gf."yi g"Dqctf "o c{."htqo "vko g"vq"vko g." uwdlgev"vq"yi g"vgto u"qp"y j kej "cp{"uj ctgu"o c{"j cxg"dggp"kunwgf"cpf"uwdlgev"vq"yi g"eqpf kkqpu"qh"cmqvo gpv."d{"c" tguqnwkqp"r cuugf "cv"c'o ggvkpi "qh"yi g"Dqctf."*cpf "pqv"d{"ektewnct"tguqnwkqp+."o cmg"uwej "ecm"cu"kv'yi kpmu"hkv"wr qp"yi g" Uj ctgi qnf gtu"kp"tgur gev'qh"cm'o qpg{"wpr ckf "qp"yi g"uj ctgu"j gnf "d{"yi go "tgur gevkxgn("cpf "gcej "Uj ctgj qnf gt"uj cm'r c{" yi g"co qwpv"qh"gxgt{"ecm"uq"o cf g"qp"j ko "wq"yi g"Rgtuqp"qt "Rgtuqpu"cpf "Uj ctgj qnf gtu"cpf "cv"yi g"vko gu"cpf "r ncegu" cr r qkpvgf "d{"yi g"Dqctf 0C"ecm'o c{dg"o cf g"r c{cdng"d{"kpucmo gpwt0Rtqxkf gf "yi cv'yi g"Dqctf "tij cm'pqv'i kxg"yi g"qr vkqp" qt"tki j v'vq"ecm'qp"tij ctgu'vq"cp{"r gtuqp"gzegr v'y kyi "yi g"ucpevkqp"qh'yi g"Eqo r cp{"kp"yi g"I gpgtcn'O ggvkpi 0'
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- *g+ Vj g"Dqctf "o c{."htqo "\wo g"\q"\wo g"cv"\ku"f kuetg\kqp."gz\ygpf "\y g"\wo g"hkzgf "hqt"\y g"r c{o gpv'qh'cp{"ecm'cpf "o c{"gz\ygpf" uwej "\wo g"cu"\q"cm'qt"cp{"qh'\y g"Uj ctgj qnf gtu"y j q."htqo "tgukf gpeg"cv"c"f kucpeg"qt"qyj gt"ecwug"\y g"Dqctf "o c{"f ggo "hcktn{"gp\kurgf "\q"uwej "gz\ygpukqp="dw"pq"Uj ctgj qnf gtu"uj cm'dg"gp\kurgf "\q"uwej "gz\ygpukqp"ucxg"cu"c"o cwgt"qh'i tceg"cpf "hcxqwt0'
- *h+ Ki'cp{"Uj ctgj qnf gt"qt"cmqwgg"hcknu"vq"r c{"vj g"y j qng"qt"cp{"r ctv'qhl'cp{"ecm'qt"kpuvcmo gpv."f wg"htqo "j ko "qp"vj g"f c{" cr r qkpvgf "hqt"r c{o gpv'vj gtgqh "qt"cp{"uwej "gz vgpukqp"vj gtgqh'cu"chqtguckf."j g"uj cm'dg"hcdng"vq"r c{"kpvgtguv'qp"vj g"uco g" htqo "vj g"f c{" cr r qkpvgf "hqt"vj g"r c{o gpv'vj gtgqh"vq"vj g"kko g"qh"cewcnlr c{o gpv'cv'uwej "tcvg"cu'uj cmlhtqo "vko g"vq"vko g"dg" hkzgf "d{"vj g"Dqctf "dw'pqvj kpi "kp"vj ku"Ct vkeng"uj cmltgpf gt "kv'qdnki cvqt{"hqt"vj g"Dqctf "vq"f go cpf "qt"tgeqxgt"cp{"kpvgtguv" htqo "cp{"uwej "Uj ctgj qnf gt0"
- *i + Cp{"uwo."y j kej "d{"y g"ygto u"qh"kuuwg"qh"c"uj ctg"qt"qy gty kug."dgeqo gu"r c{cdrg"qp"cmqw gpv"qt"cv"cp{"hkzgf"f cvg"qt"d{" kpuvcmo gpvu"cv"c"hkzgf "kwo g"y j gyj gt "qp"ceeqwpv"qh"yj g"pqo kpcn"xcnvg"qh"yj g"uj ctg"qt"d{"y c{"qh"rtgo kwo "uj cm"hqt"yj g" r wtr qugu"qh"yj gug"Ct vkergu"dg"f ggo gf "vq"dg"c"ecmif wn{"o cf g"cpf "r c{cdrg"qp"yj g"f cvg"qp"yj kej "d{"yj g"ygto u"qh"kuuwg"qt" qyj gty kug"yj g"uco g"dgeco g"r c{cdrg."cpf "kp"ecug"qh"pqp/r c{o gpv."cm"yj g"tgrgxcpv"rtqxkukqpu"qh"yj gug"Ct vkergu"cu"vq"



 $rc\{o gpv'qh''ecm''kpvgtguv."gzrgpugu."hqthgkwtg"qt"qvjgty kug"ujcm''crrn{"cu''kh''uwej"uwo "dgecog''rc{cdng"d{"xktwg"qh''c"ecm''f wn{"ocfg''cpf''pqvkhkgf0'}}$

- *j + Qp'ij g'tkch'qt'j gctkpi 'qh'cp{ 'cevkqp'qt'iwkk'dtqwi j v'd{ ''j g'Eqorcp{ 'ci ckpuv'cp{ 'Uj ctgj qnf gt'qt'j ku'igi cnt'gr tgugpvcvksgu' hqt'y g'tgeqxgt{ 'qh'cp{ 'o qpg{ 'encko gf ''q'dg'f wg''q'y g'Eqorcp{ 'kp'tgur gev'qh'j ku'iyi ctgu.''kv'ij cmidg'iwhhkekppv'q'r tqxg" yj cv'yj g'pco g'qh'yj g'Uj ctgj qnf gt''kp'tgur gev'qh'yj qug''uj ctgu''yj g'o qpg{ 'ku''uqwi j v'vq''dg''tgeqxgtgf ''crr gctu''gpvgtgf ''qp'' yj g'Tgi kwgt'qh'O go dgtu'cu'yj g'j qnf gt.''qt'pg''qh'yj g'j qnf gtu''cv'yt 'iwdugs wgpv'vq''yj g'f cwg''cv'y j kej ''yj g'o qpg{ 'luqwi j v'q'' dg''tgeqxgtgf ''ku''cmgi gf ''vq''j cxg''dgeqo g'f wg''qp''yj g''uj ctgu='yj cv'yj g''tguqnwkqp''o cnkpi ''yj g''ecmilu'f wn{ ''tgeqtf gf ''kp''yj g'' o kpwg''dqqm''cpf ''yj cv'pqvkeg''qh'uwej ''ecmi'y cu'f wn{ 'i kxgp''vq''yj g'Uj ctgj qnf gt'qt'j ku'tgr tgugpvcvkxgu'uq'uwgf ''kp''r wtuwcpeg'' qh''yj gug''Ctvkergu=''cpf ''kv'uj cmi'pqv'dg''pgeguuct{ ''vq''r tqxg''yj g''crr qkpvo gpv'qh''yj g''b tggvkpi ''cv'yj kej ''cpf ''ecmi'y cu'' o ''c''s wqtwo ''qh'F ktgevqtu'y cu''r tgugpv'cv'yj g'Dqctf ''cv'y j kej ''cpf ''ecmi'y cu'o cf g.''pqt''yj cv'yj g'o ggykpi ''cv'yj kej ''cpf ''ecmi'y cu'' o cf g''y cu'f wn{ ''eqpxgpgf ''qt''eqpunkwygf ''pqt''cpf ''qyj gt''o cwgtu''yj cwqgxgt=''dww'yj g''r tqqh'qh''yj g'' cwgtu''chqtguckf ''uj cmi' dg''eqpenwkxg''gxkf gpeg'qh''yj g'f gdv0'
- *k+ P gkij gt "c"lwf i o gpv'pqt "c"f getgg"kp"hcxqwt "qh'vj g"Eqo r cp{"hqt"ecmu"qt"qvj gt "o qpg{"f wg"kp"tgur gev'qh"cp{" ij ctg"pqt"cp{" r ctv"r c{o gpv"qt "ucwluhcevlqp"vj gtgwpf gt."pqt"vj g"tgegkr v"d{"vj g"Eqo r cp{"qh"c"r qtvlqp"qh"cp{"o qpg{"y j kej "uj cml"htqo " vko g"vq"klo g"dg"f wg"htqo "cp{"Uj ctgj qnf gt"vq"vj g"Eqo r cp{"kp"tgur gev"qh"j ku"uj ctgu."gkvj gt"d{"y c{"qh"r tkpekr cn"qt"kpvgtguv." pqt"cp{"kpf wni gpeg"i tcpvgf"d{"vj g"Eqo r cp{"kp"tgur gev"qh"vj g"r c{o gpv"qh"cp{"uwej "o qpg{"uj cml"r tgenwf g"vj g"Eqo r cp{" htqo "vj gtgchvgt"r tqeggf kpi "vq"gphqteg"c"hqthgkwtg"qh"uwej "uj ctgu"cu"j gtgkpchvgt"r tqxkf gf 0"
- *1+ Vj g"Dqctf "o c{.'kh'k''y kpmu'lkv'*tuwdlgev'vq "y g"r tqxkukqpu'qh'Ugevkqp"72'qh'y g"Eqo r cpkgu'Cev."4235."cu'co gpf gf +'ci tgg" vq"cpf "tgegkxg"htqo "cp{"Uj ctgj qnf gt "y knhpi "vq"cf xcpeg"y g"uco g."yj g"y j qng"qt "cp{"r ctv'qh''y g"o qpg{"f wg"wr qp"yj g"uj ctgu"j gnf "d{"j ko "dg{qpf "yj g"uwo u"cewcm{ "ecmgf "hqt."cpf "wr qp"yj g"co qwpv'uq"r ckf "qt"ucvkuhkgf "kp"cf xcpeg"qt"uq" o wej "yj gtgqhl'cu'htqo "kko g"vq"ko g"gzeggf u'yj g"co qwpv'qh'yj g"ecmu'yj gp"o cf g"wr qp"yj g"tij ctgu'kp'tgur gev'qh'y j kej "uwej " cf xcpeg"j cu'dggp"o cf g."yj g"Eqo r cp{"o c{"r c{"kpvgtguv'cv'uwej "tcvg."cu'yj g"Uj ctgj qnf gt"r c{kpi "uwej "tuwo "kp"cf xcpeg" cpf "yj g"Dqctf "ci tgg"wr qp."r tqxkf gf "yj cv'yj g"o qpg{"r ckf "kp"cf xcpeg"qh'ecmu'uj cm'pqv'eqphgt"c'tki j v'vq"r ctvkekr cvg"kp" r tqhku'qt"f kxkf gpf 0Vj g"F ktgevqtu"o c{"cv'cp{"vko g"tgr c{"yj g"co qwpv'uq"cf xcpegf 0'
- *m+ Pq"Uj ctgj qrf gt"uj cm'dg"gpvkrgf "\q"xqvkpi "tki j vu"kp"tgur gev'qh'vj g"o qpg{*kgu+"uq"r ckf "d{"j ko "wpvkri'yj g"uco g"y qwrf "dw" hqt"uwej "rc{o gpv."dgeqo g"r tgugpvn("rc{cdrg0"
- *n+ Vj g'r tqxkukqpu'qh'vj gug'Ct klengu'uj cm'o wcvku'o wcpf ku'cr r n('vq'vj g'ecmu'qp'F gdgpwtgu'qh'vj g'Eqo r cp $\{0'\}$

3; 0 EQORCP[øUNKGP"

10 Qp'uj ctgu<"

*c+ Vj g'Eqo r cp { 'uj cm'j cxg'c'hktuv'cpf 'r ctco qwpv'hkgp<'

"k+ "qp"gxgt{"uj ctg" "pqv'dgkpi "c"hwn{"r ckf/wr "uj ctg+"tgi knvgtgf "kp"yj g"pco g"qh"gcej "uj ctgj qnf gt" "y j gyj gt"uqngn{"qt" lqkpvn{" y kyj "qyj gtu+"cpf "wr qp"yj g"r tqeggf u"qh"ucng"yj gtgqh"hqt"cm"o qpg{" "y j gyj gt"r tgugpvn{"r c{cdng"qt"pqv+"ecnngf."qt"r c{cdng" cv"c"hkzgf "vko g. "kp"tgur gev'qh"yj cv"uj ctg"cpf "pq"gs wkxcdng"kpvgtguv"kp"cp{"uj ctg"uj cmi'dg"etgcvgf "gzegr v'wr qp"yj g"hqqvkpi " cpf "eqpf kxkqp"yj cv"yj ku"Ctvkeng"y kmi'j cxg"hwni'ghtgev'cpf "gzegr v'cu"r tqxkf gf "kp"Ctvkeng"3; "k+"d+="

*kk+ qp"cmluj ctgu"*pqv'dgkpi "hwm("rckf/wr"uj ctgu+"uvcpfkpi "tgi kuvgtgf"kp"vjg"pcog"ph'c"ukping 'rgtuqp. 'hqt"cmloqpg{"rtgugpvn("rc{cdng"d{"jko"qt"jku"guvcvg"vq"vjg"Eqorcp{"

 $Rtqxkf gf "ij cv'ij g"Dqctf "o c{."cv'cp{"vko g."f genctg"cp{"uj ctgu"y j qm{"qt"kpi"ctv'vq"dg"gzgo r v'htqo "ij g"r tqxkukqpu"qh'ij ku" Ctvkerg0'}} \\$

- *d+ Eqorcp{øu'hlgp.'hli'cp{."qp''yjg''ujctgu.''ujcm'gzvgpf''vq''cm'Fkxkfgpfu'rc{cdng''cpf''dqpwugu'fgenctgf'htqo''\kog''\q''\kog''\p'' tgurgev'qh'uwej''ujctgu0'
- *e+ Wprguu'qyi gty kug'ci tggf.''yi g'tgi kuxtcvkqp''qh''c'\tcpuhgt''qh''uj ctgu''uj cm''qr gtcvg''cu''c''y ckxgt''qh''yi g'Eqorcp{øu''hkgp.'kh''cp{." qp''uwej ''uj ctgu0Vj g'hwm' 'r ckf/wr ''uj ctgu''uj cm'dg'htgg'htqo ''cmhkgp''cpf ''yi cvlkp''ecug''qhi'r ctwl 'r ckf ''uj ctgu.''yi g'Eqorcp{øu'' nkgp''uj cm'dg''tguxtlevgf''vq''o qpg{"ecmgf ''qt''r c{cdng''cv'c'hkzgf ''kog'kp''tgur gev'qh'uwej ''uj ctgu0''
- *f + Hqt''y g'r wtr qug''qh''gphqtekpi 'luwej 'hkgp.''y g'Dqctf'o c{ 'lugm'y g''uj ctgu.''uwdlgev'y gtgvq''kp''uwej 'o cppgt''cu''y g{ 'luj cm'y kpm' hkv.''cpf 'hqt''y cv'r wtr qug''o c{ "ecwug''vq''dg''kuwgf ''c'f wr nkecvg''egt \khkecvg''kp''tgur gev''qh''uwej ''uj ctgu''cpf ''o c{ "cwyj qtkug''qpg'' qh''y gkt''Uj ctgj qnf gtu''vq''gzgewg''cpf ''tgi kuvgt''y g''vtcpuhgt''y gtgqh''qp''dgj cnh'qh''cpf ''kp''y g''pco g''qh''cp{ ''r wtej cugt0'Vj g''



r wtej cugt'uj cm'pqv'dg''dqwpf ''q''ugg''\q''yj g''crrnkecvkqp''qh''yj g''r wtej cug''o qpg{.'pqt'uj cm'j ku'\kurg'\q''yj g''uj ctgu''dg''chhgevgf ''
d{ "cp{'kttgi wrctkx{ ''qt'kpxcnkf kx{ ''kp''yj g''r tqeggf kpi u'kp''tghgtgpeg''\q''yj g''ucrg0''

Rtqxkf gf "vj cv"pq"ucng"uj cm'dg"o cf g<"

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llo Qp'F gdgpwtgu<"

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*kk+ qp"cm"F gdgpwtgu"*pqv"dgkpi "hwm{"r ckf/wr "F gdgpwtgu+"uvcpf kpi "tgi kuvgtgf kp"vj g"pco g"qh"c"ukpi rg"r gtuqp."hqt"cm" o qpg{"r tgugpvn{"r c{cdrg"d{"j ko "qt"j ku"guvcyg"vq"vj g"Eqo r cp{"

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*d+ Eqorcp{&u"rkgp."kh"cp{."qp"yig"Fgdgpwtgu."ujcm"gzvgpf"vq"cm"kpvgtguv'cpf"rtgo kwo "c{cdrg"kp"tgurgev'qh"uwej" Fgdgpwtgu0'Wprguu"qyigty kug"citggf."yig"tgi kutcvkqp"qh"c"vtcpuhgt"qh"Fgdgpwtgu0'ujcm"qrgtcvg"cu"c"yckxgt"qh"yig" Eqorcp{&u"rkgp."kh"cp{."qp"uwej"Fgdgpwtgu0'Vjg"hwn("rckf/wr"Fgdgpwtgu"ujcm'dg"htgg"htqo"cm'nkgp"cpf"yicv"kp"ecug" qh"rctvn("rckf"Fgdgpwtgu."yig"Eqorcp{&u"rkgp"ujcm'dg"tguvtkevgf"vq"oqpg{"ecmgf"qt"rc{cdrg"cv'c"hkzgf"vkog"kp"tgurgev'qh"uwej"Fgdgpwtgu0'

*e+ Hqt"ij g"r wtr qug"qh"gphqtekpi "uwej "hgp."ij g"Dqctf"o c{"ugm"ij g"F gdgpwtgu."uwdlgev"ij gtgvq"kp"uwej "o cppgt"cu"ij g" uj cm" ij kpm"hkv."cpf "hqt"ij cv"r wtr qug"o c{"ecwug"vq"dg"kuuwgf "c"f wr nkecvg"egt whkecvg"kp"tgur gev"qh"uwej "F gdgpwtgu"cpf "o c{" cwj qtk g"ij g"f gdgpwtg"t wuxgg"cevkpi "cu"vt wuxgg"hqt"ij g"j qnf gtu"qh"F gdgpwtgu"qt "qpg"qh"ij g"j qnf gt "qh"F gdgpwtgu"vq" gzgewg"cpf "tgi kuxgt "ij g"vtcpuhgt "ij gtgqh"qp"dgj cnh"qh"cpf "kp"ij g"pco g"qh"cp{"r wtej cugt0Vij g"r wtej cugt"uj cm"pqv"dg" dqwpf "vq"ugg"vq"ij g"crr nkecvkqp"qh"ij g"r wtej cug"o qpg{."pqt"uj cm"j ku"vkxrg"vq"ij g"F gdgpwtgu"dg"chhgevgf "d{"cp{" kttgi wctkx{"qt"kpxcnlf kx{"kp"ij g"r tqeggf kpi u"kp"tghgtgpeg"vq"ij g"ucrg0"

Rtqxkf gf "vj cv'pq"ucng"uj cm'dg'o cf g<"

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*kk+ wpvki'yi g"gzr ktcvkqp"qh"36"fc{u"chwgt"c"pqvkeg"kp"y tkxkpi "uvcvkpi "cpf"fgo cpfkpi "rc{o gpv"qh"uwej "rctv"qh"yi g"co qwpv" kp"tgur gev'qh"y j kej "yi gilkgp"gzkuvu"cu'ku"r tgugpvn{"rc{cdng."j cu'dggp"i kxgp"vq"yi g'ltgi kuvgtgf "j qnfgt "hqt" yi g" vko g" dgkpi "qh" yi g" Fgdgpwxtg"qt" yi g" rgtuqp"gpvkxngf" yi gtgvq" d{t'gcuqp"qh"j ku'f gcyj "qt"kpuqnxgpe{0"

 $\label{thm:composition} Vj\ g"pgv"r\ tqeggf\ u"qh"cp{"uwej\ "ucng"uj\ cm"dg"tgegkxgf\ "d{"ij\ g"Eqo\ r\ cp{"cpf\ "cr\ r\ ngf\ kp"r\ c{o}\ gpv'qh'uwej\ "r\ ctv'qh'ij\ g"co\ qwpv"\ kp"tgur\ gev'qh"y\ j\ kej\ "ij\ g"nkgp"gz\ knu"cu"ku"r\ tgugpvn{"r\ c{cdng0'Vj\ g"tgukf\ wg."kh"cp{."uj\ cml'*uwdlgev''q"c"nkng"nkgp"hqt"uwo\ u"pqv"r\ tgugpvn{"r\ c{cdng"cu"gz\ knvgf\ "wr\ qp"ij\ g"F\ gdgpwtgu"dghqtg"ij\ g"ucng+"dg"r\ ckf\ "vq"ij\ g"Rgtuqp"gpvkxngf\ "vq"ij\ g"F\ gdgpwtgu"cv'ij\ g"f\ cvg"qh'ij\ g"ucng0'}$

*f+" Pq"j qnf gt "qh"F gdgpwtgu"tij cm"gzgtekug"cp{"xqvkpi "tki j v"kp"tgur gev"qh"cp{"F gdgpwtgu"tgi kuvgtgf "kp"j ku"pco g"qp"y j kej "cp{"ecmu"qt "qyj gt "uwo u"r tgugpvn{"r c{cdng"d{"j ko "j cxg"pqv"dggp"r ckf."qt "kp"tgi ctf "vq"y j kej "yj g"Eqo r cp{"j cu"gzgtekugf"



cp{ 'tki j v'qh'hkgp0'

420 HQTHGKVWTG'QH'UJ CTGU''

- *c+ Ki'cp{"Uj ctgi qrf gt"hckni"vq"r c{"cp{"ecmi'qt"kpuvcmo gpv'qt"cp{"r ctv'vj gtgqh'qt"cp{"o qpg{"f wg"kp"tgur gev'qh"cp{"uj ctgu" gkvj gt"d{"y c{"qhi'r tkpekr cn'qt"kpvgtguv'qp"qt"dghqtg"vj g"f c{"cr r qkpvgf "hqt"vj g"r c{o gpv'qh'vj g"uco g"qt"cp{"uvej "gz vgpukqp" yj gtgqh'cu"chqtguckf."vj g"Dqctf"o c{."cv"cp{"vko g"vj gtgchxgt."f wtkpi "uvej "vko g"cu"vj g"ecmi'qt"kpuvcmo gpv'qt"cp{"r ctv" yj gtgqh'qt"qvj gt"o qpg{"tgo ckp"wpr ckf"qt"c"lwf i o gpv'qt"f getgg"kp"tgur gev'vj gtgqh'tgo ckp"wpucvkuhkgf.'i kxg"pqvkeg"q'j ko "qt"j ku"ngi cn'ttgr tgugpvcvkxgu"tgs wttkpi "j ko "vq"r c{"vj g"uco g"vqi gvj gt"y kyj "cp{"kpvgtguv"vj cv"o c{"j cxg"ceetwgf "cpf"cm" gzr gpugu'vj cv"o c{"j cxg"dggp"kpewttgf"d{"vj g"Eqo r cp{"d{"tgcuqp"qh'uwej "pqp/r c{o gpv0'
- *d+ Vj g'pq\leg'\uj cm'pco g'c'f' c {.'*pq\'dg\pi ''pguu'\uj cp''36'\understand ygp+f' c {u'Intqo "\uj g'f c\u'g\ph'\uj g'pq\leg+"cpf "c'r reeg''t'r reegu' qp"qt''dg\phtg'\uj j kej "uwej "ecm'qt''\upucmo gp\'qt''uwej "r ct\'qt''q\uj gt"o qpg{"cu''chqtguc\understand "cpf "\upucmo gp\'qt''\upucmo gp\'qt''uwej "tc\ug'' cu'\uj g'Dqctf "\uj cmlf g\upucmo gp\'qt''\upucmo gp\'qt''\upucmo gp\'q\uj g''f c\usu''qp"\upuc j kej "uwej "ecm'qt"\upucmo gp\'qwi j \u'\upucmo gp\'qwi j \u'\upucmo gp\'r c\understand +" cpf "gzr gpugu'cu'chqtguc\understand "ctg"\upucmo g'\upucmo g'\upucmo gp\'r c\understand 6'\upucmo gp\'r c\upucmo g
- *e+ Kt'ij g'tgs wktgo gpwi'qh'cp{"iwej "pqvkeg"cu"chqtguckf "ctg"pqv'dg"eqo r nkgf "y kj ."cp{"uj ctg"kp"tgur gev'qh'y j kej "uwej "pqvkeg" j cu'dggp'i kxgp."o c{"cv'cp{"ko g."vj gtgchgt "dghqtg"r c{o gpv'qhl'cmlecmu."kpuvcmo gpvu."qvj gt"o qpg{"f wg'kp"tgur gev'vj gtgqh" kpytguv'cpf "gzr gpugu"cu"tgs wktgf "d{"vj g"pqvkeg"j cu"dggp"o cf g."dg"hqthgkgf "d{"c"tguqnwkqp"qh"vj g"Dqctf "vq"vj cv"ghhgev0' Uvej "hqthgkwtg"uj cml'kpenwf g"cml'F kxkf gpf u"f genctgf "qt"cp{"qvj gt"o qpg{"r c{cdng"kpt"gur gev'qh'vj g"hqthgkwf "uj ctg"cpf" pqv'cewcm("r ckf "dghqtg"vj g"hqthgkwtg"uwdlgev'vq"vj g"cr r nkecdng"r tqxkukqpu"qh"vj g"Cev0'Vj gtg"uj cml'dg"pq"hqthgkwtg"qh" wpencko gf "F kxkf gpf u"dghqtg"vj g"encko "dgeqo gu"dcttgf "d{"Ncy 0"
- *f+ Y j gp"cp{"uj ctg"uj cmj cxg"dggp"uq l'qthgkgf."pqvkeg"qh"vj g"lqthgkwtg"uj cmidg"i kxgp"vq"vj g"Uj ctgj qnf gt"qp"vj j qug"pco g" kv"uvqqf "lo o gf kcvgn{"r tkqt"vq"vj g"lqthgkwtg"qt"kh"cp{"qh"j ku"ngi cni'tgr tgugpvcvkxgu"qt"vq"cp{"qh"vj g"Rgtuqpu"gpvkxngf "vq" vj g"uj ctgu"d{"vtcpuo kuukqp."cpf cp"gpvt{"qh"vj g"hqthgkwtg"y kj "vj g"f cvg"vj gtgqh"uj cmilqtvj y kj "dg"o cf g"kp"vj g"Tgi kuvgt" qh"O go dgtu."dw"pq"hqthgkwtg"uj cmildg"kp"cp{"o cppgt"kpxcnkf cvgf "d{"cp{"qo kuukqp"qt"pgi ngeviq"i kxg"uvej "pqvkeg"qt"vq" o cng"cp{"uvej "gpvt{"cu"chqtguckf 0"
- *g+ Cp{"uj ctg"uq"hqthgksgf "uj cm'dg"f ggo gf "vq"dg"vj g"r tqr gtv{ "qh'vj g"Eqo r cp{ "cpf "o c{ "dg"uqrf = "tg/cmqwgf ."qt"qvj gty kug" f kur qugf "qh"gksj gt"vq"vj g"qtki kpcn'j qrf gt"vj gtgqh"qt"vq"cp{ "qvj gt"Rgtuqp"wr qp"uwej "vgto u"cpf "kp"uwej "o cppgt"cu"vj g" Dqctf "uj cm'vj kpm'hko"
- The Cp{"Uj ctgj qrf gt"y j qug"uj ctgu"j cxg"dggp"hqthgksgf "uj cm"pqyy kij uvcpf kpi "vj g"hqthgkwtg."dg"nkcdrg"vq"r c{"cpf"uj cmi hqtvj y kij "r c{"vq"vj g"Eqo r cp{"qp"f go cpf "cmlecmu."kpuvcmo gpvu.kpvgtguv'cpf "gzr gpugu'cpf "qvj gt"o qpg{"qy kpi "wr qp"qt" kp"tgur gev"qh'uwej "uj ctgu"cv'vj g"ko g"qh'vj g"hqthgkwtg"vqi gyj gt "y kij "kpvgtguv'vj gtgqp"htqo "vj g"ko g"qh'vj g'hqthgkwtg"wpvkn" r c{o gpv'cv'uwej "tcvg"cu'vj g"Dqctf"o c{"f gvgto kpg"cpf "vj g"Dqctf"o c{"gphqteg." "th'kv'vj kpmulkv+: "r c{o gpv'vj gtgqh'cu'kh'kv'vy gtg"c'pgy "ecmlo cf g"cv'vj g"f cvg"qh'hqthgkwtg0"
- *1 + Vj g" hqthgkwtg" qh" c" uj ctg" uj cm' kpxqnxg" gzvkpevkqp" cv' yj g" vko g" qh" yj g" hqthgkwtg" qh" cmkpvgtguv'kp"cm'encko u'cpf "f go cpf u'ci ckpuv'yj g'Eqo r cp{."kp"tgur gev'qh'yj g'uj ctg"cpf "cm'qvj gt"tki j vu'kpekf gpvcn'vq"yj g'uj ctg."gzegr v'qpn("uwej "qh" yj gug'tki j vu'cu'd{'vj gug'Ctvkengu'ctg"gzr tguun("ucxgf 0'
- *j + C"f wn ("xgtkhkgf"f geneteskqp"kp"y tkkpi "vj ev'vj g"f genetepv'ku'c"F ktgevqt"qt"Ugetgvet ("qh'vj g"Eqorep ("cpf "vj ev'c"uj etg"kp" vj g"Eqorep ("qh'vj g"f geneteskqp."uj etg"kp" vj g"Eqorep ("ij eu'dggp"f wn ("hqthgkwef"kp"ceeqtf epeg"y kij "vj gug"Ctvkengu"qp"c"f evg"uvevgf "kp"vj g"f geneteskqp."uj em'dg" eqpenwukxg"gxkf gpeg"qh'vj g"hewu'vj gtgkp'uvevgf "cu'ci ekpuv'cm'Rgtuqpu'eneko kpi "vq"dg"gpvkngf "vq"vj g"uj etgu0"
- Wr qp"cp{"ucng"chgt"hqthgkwtg"qt"hqt"gphqtekpi "c"hlgp"kp"r wtr qt \tigf"gzgtekug"qh"\j g"r qy gtu"j gtgkpdghqtg"i kxgp."\j g"Dqctf" o c{"crrqkpv'uqo g"Rgtuqp"\q"gzgewg"cp"kputwo gpv'qh'\tcpulgt"qh'\j g"uj ctgu'uqnf"cpf "ecwug"\j g"r wtej cugt\u00fau"pco g"\q"dg" gp\u00fag" "kp"\j g"Tgi kn\u00fagt"qh'O go dgtu"kp"tgur gev'qh"\j g"uj ctgu'uqnf "cpf"\j g"r wtej cugt"uj cm'pqv'dg"dqwpf "\q"ugg"\q"\j g" tgi wctk\{"qh'\j g"r tqeggf kpi u."qt"\q"\j g"crrhec\u00faqpqh"\j g"r wtej cug"o qpg\{."cpf "ch\u00fat"\u00fa p"\u00faq\u00fagp"gp\u00fagp"gp\u00fagt"\u00fap"\j g" Tgi kn\u00fat"\u00fap"\u00fap"\u00fap\u00fap"\u00fap"\u00fap"\u00fap"\u00fap\u00fap"\u00fap"\u00fap\
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*m+ Vj g"Dqctf "o c{."cv'cp{"vko g."dghqtg"cp{"vij ctg"vq"hqthgkgf "vij cmi'j cxg"dggp"vqnf."tg/"cmqwgf "qt"qvj gty kug"f kur qugf "qh" cppwn'yi g'hqthgkwtg"vj gtgqh'wr qp"uwej "eqpf kwqpu"cu'kv'yi kpmu'hko''

430 HWTVJ GT'KUWG'QH'UJ CTG'ECRKVCN''

- $c+ \quad Y \ j \ gtg''cv'cp \{ \text{''ko g.''vj g'Eqo r cp {''r tqr qugu''vq' lpetgcug''kuu'uwduetklgf ''ecr kcn'd { ''vj g''kuuwg''qh'hwt vj gt''uj ctgu.''uwej ''uj ctgu''uj cm'dg''qhhgtgf ô ''}$
- k0 vq"r gtuqpu"y j q."cu"qp"vj g"f cvg"ur gekhlef "kp"cr r nkecdng"ncy "ctg"j qnf gtu"qh"gs wkx{"uj ctgu"qh"vj g"Eqo r cp{"kp"r tqr qt vkqp." cu"pgctn{"cu"ektewo uvcpegu"cf o kx."vq"vj g"Rckf"wr "Uj ctg"Ecr kxcn"qp"vj qug"uj ctgu"d{"ugpf kpi "c"ngwgt"qh"qhhgt"uwdlgev"vq" vj g"hqnnqy kpi "eqpf kxkqpu."pco gn{<"</p>
- c0 yi g"qhhgt"uj cmi'dg"o cf g"d{"pqvkeg"ur gekh{kpi "yi g"pwo dgt"qh"uj ctgu"qhhgtgf "cpf "rho kklpi "c"vko g"pqv'dgkpi "nguu"yi cp" 9*Ugxgp+"f c{u"cpf "pqv'gzeggf kpi "52"*yi ktv{+"f c{u"htqo "yi g"f cvg"qh"yi g"qhhgt"y kyi kp"y j kej "yi g"qhhgt."kh"pqv'ceegr vgf." uj cmi'dg"f ggo gf "vq"j cxg"dggp"f genkpgf ="
- d0 y g"qhhgt"chqtguchf "uj cmi'dg"f ggo gf "vq"hpenwf g"c"thi j v"gz.gtekucdng"d { "vj g"Rgtuqp"eqpegtpgf "vq"tgpqwpeg"yi g"uj ctgu" qhhgtgf "vq"j ko "qt"cp { "qhi'yi go "hp'hcxqwt "qhi'cp { "qvj gt "Rgtuqp="cpf" 'yj g"pqvkeg'tghgttgf "vq"hp"encwug"c0cdqxg"uj cmi'eqpvchp" c"uvcyo gpv'qh'yj ku'thi j v="
- e0 chwet "y g"gzr kt { "qh"y g "ko g"ur gekhlef "kp"y g"pqkeg"chqtguckf ."qt"qp"tgegkr v"qh"gctrhet "kpvko cvkqp"htqo "y g"Rgtuqp"vq" y j qo "lwej "pqkeg"ku'i kxgp"y cv'j g"f gerhpgu"vq"ceegr v'y g"uj ctgu"qhhetgf ."y g"Dqctf "o c { "f kur qug"qh'y go "kp"uwej "o cppgt" y j lej "ku"pqv"f kucf xcpvci gqwu"vq"y g"Uj ctgj qrf gtu"cpf "y g"Eqo r cp { ="
- $\label{eq:continuous} $$ \q^go r m_{ggu}' p g "c"uej go g"qh"go r m_{ggu}' uqem'qr vqp." uwdlgev'vq"Ur gekcn'T guqnwkqp"r cuugf "d{" iy g"Eqo r cp{"cpf" uwdlgev'vq"j g"Twrgu"cpf "uwej "qi gt"eqpf kkqpu." cu'o c{"dg"r tguetkdgf" wpf gt"Ncy = "qt" }$
- kkłó vq"cp{"r gtuqpu."kh'kı'kı"cwj qtkıgf "d{"c"Ur gelcn'Tguqnwkqp."y j gyj gt "qt "pqv'yj qug"Rgtuqpu'lpenwf g"yj g"Rgtuqpu'l' ghgttgf" vq"kp"encwig"*kk-"qt"encwig'*kk-"cdqxg."gkj gt 'hqt"ecuj "qt'hqt"c"eqpukf gtckqp"qyj gt "yj cp"ecuj ."kh''yj g'r tkeg'qh'iwej "uj ctgu'kı" f gygto kpgf "d{"yj g'xcnwckqp"tgr qtv'qh'c'tgi kıvgtgf "xcnwgt 'uwdlgev'vq''yj g'Twrgu''qt "qyj gty kıg''wpf gt 'Ncy 0'
 - d+ Vj g"pqvkeg"tghgttgf "vq"kp"uwd/encwug"c0'qh'encwug"¾kd"qh'uwd/ctvkeng"%cd"uj cm'dg"f kur cvej gf "vj tqwi j "tgi kuvgtgf "r quv'qt" ur ggf "r quv'qt" j tqwi j "gngevtqpke"o qf g"qt"cp{"qvj gt"o qf g"r tguetkdgf "wpf gt"Ncy "vq"cm'vj g"gzkuvkpi "Uj ctgj qnf gtu"cv" ngcuv'5"%j tgg+"f c{u'dghqtg"vj g'qr gpkpi "qh'vj g"kuuwg0'
 - e+ Pqy kpi "kp"y kı"Ctvkerg"uj cm'crrn ("vq"y g"kpetgcug"qh'y g"uwduetkdgf "ecrkscn'qh'y g"Eqorcp{"ecwugf "d{"y g"gzgtekug"qh" cp"qrvkqp"cu"c"vgto "cwcej gf "vq"y g"Fgdgpwtgu"kuwgf "qt"nqcp"tckugf "d{"y g"Eqorcp{"vq"eqpxgtv'uwej "Fgdgpwtgu"qt" nqcpu"kpvq"uj ctgu"kp"y g"Eqorcp{<"

 $Rtqxkf gf "ij cv'ij g' kgto u"qh'kuuwg"qh'uwej "F gdgpwtgu'qt"nqcp"eqpvckpkpi "uwej "cp"qr kqp"j cxg"dggp"crrtqxgf "dghqtg"ij g'kuuwg" qh'uwej "F gdgpwtgu'qt"ij g'tckukpi "qh'nqcp"d{ "c''Ur gekcn'T guqnwkqp"r cuugf "d{ "ij g'Eqo r cp{ "kp"c'I gpgtcn'O ggvkpi 0' u'' gekcn'T guqnwkqp"r cuugf "d{ "ij g'' kqb r cp{ "kp"c'I gpgtcn'O ggvkpi 0' u'' kqb r cp{ "kp"c'I gpgtcn'O ggvkpi 0' u'' kqb r cp{ "kp"c'I gpgtcn'O ggvkpi 0' u'' kqb r cp{ "kqb r cp" kqb r c$

- f+ Pqyi kpi "kp"uwd/Ctvkerg"*c+"k+"d+"qh"vj ku"Ctvkerg"uj cm'dg"f ggo gf<"
- *k⊬" Vq"gzvgpf" 'yj g"vko g"y kxj kp"y j kej "yj g"qhhgt" uj qwnf "dg"ceegr vgf ≕qt"
- *kki" Vq'cwj qtkj g'cp{'r gtuqp'vq'gzgtekug'y g'tki j v'qh'tgpwpekcvkqp'hqt'c'ugeqpf 'vko g.'qp''y g'i tqwpf 'vj cv'y g'r gtuqp'kp'y j qug'' hcxqwt'y g'tgpwpekcvkqp'y cu'hktuv'o cf g'j cu'f gerkpgf 'vq'vcng'y g'uj ctgu'eqo r tkugf 'kp'y g'tgpwpekcvkqp0'
- g+ Vj g"r tqxkukqpu"eqpvckpgf "kp" yj ku"Ctvkerg" uj cm'dg"uwdlgev' vq" yj g"r tqxkukqpu"qh"Ugevkqp"64"cpf "Ugevkqp"84"qh" yj g" Eqo r cpkgu'Cev."4235."cu'co gpf gf .''yj g"T wrgu'cpf ''yj g"cr r rkecdrg'r tqxkukqpu"qh'yj g"Cev0'

440 VTCPUHGT'CPF'VTCPUO KUKQP'QH'UJ CTGU'

- c+ Vj g'Eqo r cp{'tij cmlo ckpvckp''c'ŏTgi kuvgt''qh''Vtcpuhgtuö''cpf 'tij cmlj cxg'tgeqtf gf 'tij gtgkp'hcktn('cpf 'f kuvkpevn('r ctvkewrctu'' qh''gxgt{ "vtcpuhgt "qt 'vtcpuo kuvkqp''qh''cp{ 'Uj ctg. "F gdgpwtg''qt 'qvj gt 'Ugewtkv('j grf 'kp''c''o cvgtkcnlhqto 0'
- d+ Gxgt { 'lpuntwo gpv'qh'\tcpuhgt 'qh'\uj ctgu'\uj cm'\udg'\kp'\y tk\kpi "cpf "\uj g'r tqxkukqpu'qh'\Uge\kqp'78 "qh'\uj g'Eqo r cpkgu'Cev."\u235." cu'co gpf gf "cpf "qh'\cp { 'uncwnqt { "o qf khkeckqp"\u03d3 gtgqh "cpf "cm'\u03d3 gt"crrhecdng'r tqxkukqpu'qh'\u03d3 g'Cev'hqt"\u03d3 g'dgkpi " uj cm'\u03d3 g'r vn\u03d3 "eqo r n\u03d3 g' ky 'kp'tgur gev'qh'\u03d3 chulgt "qh'\u03d3 ctgu'cpf "\u03d3 g'tg knntckqp"\u03d3 gtgqh\u03d3 k\u03d5 "ecug'qh'\u03d3 ctgu' y j gtg'\u03d3 g'Eqo r cp { 'j cu'\u03d3 qv'kunwgf "cp { "egt\u03d3 khecvgu'cpf "\u03d3 j gtg'\u03d3 g'\u03d3 g'\u03d3 g'\u03d3 g'\u03d3 ctgu'ctg'\u03d3 gf' \u03d3 p' \u03d3 g'\u03d3 cvgtkcn\u03d4 gf 'hqto .'\u03d3 g'r tqxkukqpu' qh'\u03d3 g'F gr qukqtkgu'Cev'\u03d3 cm'\u03c3 rn\u03d3 0''



e+ *k+" Cp"crrnkecvkqp"hqt"'y g"tgi kuntcvkqp"qhl'c"\tcpuhgt"qhl'y g"uj ctgu"kp"'y g"Eqorcp{"oc{"dg"ocfg"gksjgt"d{"y g"\tcpuhgtqt" qt"'y g"\tcpuhgtgg"y ksj kp"y g"\tog"htcog"rtguetklgf "wpfgt" y g"Cev0"

Y j gtg"ij g"crrnlecvkqp"ku"o cf g"d{"ij g"tcpuhgtqt"cpf "tgrcvgu"vq"rctvn("rctvn("rctf"uj ctgu."ij g"tcpuhgt"uj cmi'pqv'dg"tgi kuvgtgf "wprguu" vj g"Eqo rcp{"i kxgu"pqvkeg"qh"vj g"crrnlecvkqp"vq"vj g"tcpuhgtgg"kp"c"rtguetkdgf "o cppgt"cpf"vj g"vtcpuhgtgg"eqo o wpkecvgu"pq" qdlgevkqp"vq"vj g"vtcpuhgt"y kij kp"4"*y q+"y ggmu'htqo "vj g"tgegkrv'qh'vj g"pqvkeg0"

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- y g'Dqctf "uj cmij cxg"r qy gt "qp"i kxkpi "pqv'nguu'yi cp"9"*ugxgp+"f c { u'r tgxkqwu'pqvkeg"d { "cf xgt vkugo gpv'kp"c"xgtpcewret" pgy ur cr gt "cpf "kp"cp"Gpi rkuj "pgy ur cr gt "j cxkpi "y kf g"ektewrevkqp"kp"yi g"ekv{."\qy p"qt"xkmci g"kp"y j kej "y g'Qhhkeg"qh"yi g" Eqo r cp { "ku"ukwcvgf. "cpf "r wdrkuj kpi "y g"pqvkeg"qp"yi g"y gduksg"cu"o c { "dg"pqvkhkgf"d { "vj g"Egpvtcn"I qxgtpo gpv'cpf "qp" yi g"y gduksg"qh"yi g"Eqo r cp { ."vq"enqug"yi g"vtcpuhgt"dqqnu. "vj g"Tgi krvgt"qh"O go dgtu"cpf kqt"Tgi krvgt "qh"F gdgpwtg/j qrf gtu"cv'uwej "vko g"qt"vko gu"cpf "hqt 'uwej 'r gtkqf 'u't 'r gtkqf u."pqv'gzeggf kpi "52"*vj ktv{+"f c { u'cv'c 'vko g'cpf 'pqv'gzeggf kpi "kp"yi g"ci i tgi cvg"67"*hqtv{/hkxg+"f c { u"kp"gcej "{ gct. "cu"kv'o c { "f ggo "gzr gf kgpv0"
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 xqvkpi 'tki j vu'qt''cp { ''qvj gt'tki j vu'kp'tgur gev'qh'vj g'Ugewtkkgu'j grf ''d { 'kx0'
- *kkk+" Gxgt{ 'r gtuqp'j qnf kpi 'tij ctgu'qh'\j g'Eqorcp{ 'cpf 'y j qug'pcog'ku'gpvgtgf 'cu'\j g'Dgpghkekcn'Qypgt'kp'\j g'tgeqtf u'qh'\j g'' Fgrqukxqt{ 'tij cm'dg'fggogf 'vq'dg''c''Ujctgj qnfgt'qh'\j g'Eqorcp{0'}
- i + Vj g"Dgpghlekcn'Qy pgt "qh'Ugewtkkgu"uj cm "kp"ceeqtf cpeg"y kij "vj g"r tqxkukqpu"qh"vj gug"Ctvkengu"cpf "vj g"Cev."dg"gpvkxngf "vq"cm'vj g"tki j vu"cpf "uvdlgev'vq"cm'vj g"nkcdkrkvkgu"kp"tgur gev'qh'j ku"Ugewtkvkgu. "vj j kej "ctg"j gnf "d{"c"F gr qukvqt{0"
- j+ Gzegr v'cu"qtf gtgf "d{"c"eqwtv'qh'eqo r gygpv'lwtkuf keylqp"qt"cu"o c{"dg"tgs wktgf "d{"Ncy "tgs wktgf "cpf "uwdlgev'vq"yj g" cr r necdng'r tqxkukqpu"qh'yj g"Eqo r cp{"tuj cmidg"gpvkngf "vq"ttgcv'yj g'r gtuqp"y j qug'pco g'cr r gctu'qp"yj g"Tgi knygt" cu'yj g'j qnf gt "qh'cp{"tuj ctg"qt"y j qug'pco g'cr r gctu'cu'yj g'DgpghkeknlQy pgt"qh'cp{"tuj ctg"kp"yj g'tgeqtf u'qh'yj g'F gr qukxqt{" cu'yj g'cduqnwg"qy pgt "yj gtgqh"cpf "ceeqtf kpi n("uj cmi'pqv'dg"dqwpf "vq"tgeqi pkl g"cp{"dgpco k'vtwuv'qt "gs wkx{."gs wkxcdng" eqpvkpi gpv."hwwtg."r ctvkcn'lkpvgtguv."qyj gt "encho "vq"qt "kpvgtguv"kp"tgur gev'qh'uwej "uj ctgu"qt"*gzegr v'qpn{"cu"d{"yj gug" Ctvkengu'qyj gty kug"gzr tguun("r tqxkf gf +"cp{"tki j vkp"tgur gev'qh'ic'ij ctg"qyj gt "yi cp"cp"cduqnwg"tki j vvj gtgqq'kp"ceeqtf cpeg" y kyj "yj gug"Ctvkengu."qp"yj g'r ctv'qh'cp{"qyj gt "r gtuqp"y j gyj gt "qt"pqv'kv'j cu"gzr tguugf "qt"ko r nkgf "pqvkeg"yj gtgqh'dwv'yj g" Dqctf "uj cm'cv'yj gkt"uqpg"f kuetgykqp"tgi kuvgt "cp{"uj ctg"kp"yj g'lqkpv'pco gu"qh"cp{"yy q"qt"o qtg"r gtuqpu"qt"yj g'uwtxkxqt"qt" uwtxkxqtu"qh'vj go 0'
- k+ Tgi kungt "cpf "Kpf gz "qh"Dgpghkelcn"Qy pgtu<"

 $\label{thm:conditional} Vj\ g"Eqo\ r\ cp\{"uj\ cm''ecwug"\ vq"dg"\ mgr\ v'c"tgi\ kuvgt"\ cpf\ "kpf\ gz"qh''o\ go\ dgtu"y\ kj\ "f\ gvckuu"qh''uj\ ctgu"\ cpf\ "f\ gdgpwtgu"j\ gnf\ "kp"\ o\ cvgtkcnk gf\ 'cpf\ 'f\ go\ cvgtkcnk gf\ 'hqto\ u'hp''cp{\{'o\ gf\ kc''cu''o\ c{'dg''r\ gto\ kwgf\ 'd{\{'Ncy\ 'kpenwf\ kpi\ 'cp{\{'hqto\ 'qh''gngevtqpke''o\ gf\ kc''cu''\ o\ gf\ kc''\ o\ gf\ kc''\ o\ gf\ kc''\ o\ gf\ kc'''\ o\ gf\ kc''\ o\ gf\ kc$

1+ Ecpegncvkqp"qh"Egtvkhlecvgu"wr qp"uwttgpf gt"d{ "Rgtuqp<"

...



Wr qp"tgegkr v'qh'egt khkecvg"qh'ugewtkkgu"qp"uwttgpf gt"d{"c"r gtuqp"y j q"j cu"gpvgtgf "kpvq"cp"ci tggo gpv'y kij "vj g"F gr qukvqt{" yj tqwi j "c"rctvkekrcpv."yj g"Eqorcp{"uj cm'ecpegn'uwej "egtvkhkecvgu"cpf "uj cm'uwduvkwwg"kp"ku"tgeqtf."yj g"pco g"qh"yj g" F gr qukqt { "cu'\j g'tgi knygtgf "qy pgt "kp'tgur gev'qh'\j g'uckf "Ugewtkkgu'cpf 'Uj cm'cnuq 'kphqto "\j g'F gr qukqt { "ceeqtf kpi n(0"

Ugtxkeg'qh'F qewo gpvu<

 $P \ qy \ kj \ uvcpf \ kpi \ "cp{\ yi \ kpi \ "eqpvc \ kpgf \ "kp" \ yi \ g'' \ Cev'qt" \ yi \ gug'' \ Ct \ v'ergu'' \ q''yj \ g'' \ eqpvc \ t{\ (."yj \ gtg'' \ Ugewt \ kkgu''ctg''j \ grf \ "kp" \ c''F \ gr \ qukqt \ {\ (."yj \ gtg'' \ Ugewt \ kkgu''ctg''j \ grf \ "kp" \ c''F \ gr \ qukqt \ {\ (."yj \ gtg'' \ Ugewt \ kkgu''ctg''j \ grf \ "kp" \ c''F \ gr \ qukqt \ {\ (."yj \ gtg'' \ Ugewt \ kkgu''ctg''j \ grf \ "kp" \ c''F \ gr \ qukqt \ {\ (."yj \ gtg'' \ Ugewt \ kkgu''ctg''j \ grf \ "kp" \ c''F \ gr \ qukqt \ {\ (."yj \ gtg'' \ Ugewt \ kkgu''ctg''j \ grf \ "kp" \ c''F \ gr \ qukqt \ {\ (."yj \ gtg'' \ Ugewt \ kkgu''ctg''j \ grf \ "kp" \ c''F \ gr \ qukqt \ {\ (."yj \ gtg'' \ Ugewt \ kkgu''ctg''j \ grf \ "kp" \ c''F \ gr \ qukqt \ {\ (."yj \ gtg'' \ Ugewt \ kkgu''ctg''j \ grf \ "kp" \ c''F \ gr \ qukqt \ {\ (."yj \ gtg'' \ Ugewt \ kkgu''ctg''j \ grf \ "kp" \ c''F \ gr \ qukqt \ {\ (."yj \ gtg'' \ Ugewt \ kkgu''ctg''j \ grf \ "kp" \ c''F \ gr \ qukqt \ {\ (."yj \ gtg'' \ Ugewt \ kkgu''ctg''j \ grf \ "kp" \ c''F \ gr \ qukqt \ {\ (."yj \ gtg'' \ Ugewt \ kkgu''ctg''j \ grf \ "kp" \ c''F \ gr \ qukqt \ {\ (."yj \ gtg'' \ Ugewt \ kkgu''ctg''j \ grf \ "kp" \ c''F \ gr \ qukqt \ {\ (."yj \ gtg'' \ Ugewt \ kkgu''ctg''j \ grf \ "kp" \ c''F \ gr \ qukqt \ {\ (."yj \ gtg'' \ Ugewt \ kkgu''ctg''j \ grf \ "kp" \ c''F \ gr \ qukqt \ {\ (."yj \ gtg'' \ Ugewt \ kkgu''ctg''j \ grf \ "kp" \ c''F \ gr \ qukqt \ {\ (."yj \ gtg'' \ Ugewt \ kkgu''ctg''j \ grf \ "kp" \ c''F \ gr \ qukqt \ {\ (."yj \ gtg'' \ ugewt \ kkgu''ctg''j \ grf \ "kp" \ c''F \ gr \ qukqt \ {\ (."yj \ gtg'' \ ugewt \ kkgu''ctg''j \ grf \ "kp" \ gr \ q'' \ ugewt \ {\ (."yj \ gtg'' \ ugewt \ kkgu''ctg''j \ grf \ "kp" \ gr \ gr \ q'' \ ugewt \ {\ (."yj \ gtg'' \ ugewt \ ug$ yjg"tgeqtfu"qh"yjg"dgpghkekcn"qypgtujkr"oc{"dg"ugtxgf"d{"uwej"Fgrqukqt{"qp"yjg"Eqorcp{"d{"ogcpu"qh"gngevtqpke"oqfg" qt 'd { 'f grkxgt { 'qh'hrqr r kgu'qt 'f kueu0'

- Vtcpuhgt "qh"Ugewtkukgu<" n+
- 10 Pqyi kpi "eqpvckpgf "kp"Ugevkqp"78"qh"vj g"Eqo r cpkgu"Cev."4235."cu"co gpf gf "qt"vj gug"Ctvkergu"uj cm'cr r n("vq"c"vtcpuhgt" qh"Ugewtkkgu"ghhgevgf "d{"\tcpuhgtqt"cpf "\tcpuhgtgg"dqyi "qh"y j qo "ctg"gpvgtgf "cu"Dgpghlekcn'Qy pgtu"kp"yj g'tgeqtf u"qh"c" F gr qukxqt {0'
- 140 Kp"ij g"ecug"qh"\tcpuhgt"qt"\tcpuo kuukqp"qh"uj ctgu"qt"qyj gt "o ctmgvcdng"Ugewtkkgu"y j gtg"j g"Eqorcp{"j cu"pqv'kuuwgf"cp{" egt \hkecvgu"cpf "y j gtg"\wej "\uj ctgu"qt "Ugewtk\kgu"ctg"dg\pi "j gnf "\p"cp { "gngevtqpke"qt "hwpi kdng"hqto "\p"c"F gr qu\kqt { ."\uj g" r tqxkukqpu'qh'yi g'F gr qukxqtkgu'Cev'uj cm'cr r n{0'
 - o + Cmqvo gpv'qh''Ugewtkklgu'f gcnv'y kij 'kp'c'F gr qukqt {<"

P qw kij uvcpf kpi "cp { yi kpi "kp" yi g"Cev'qt" yi gug"Ctvkergu. "y j gtg"Ugewtkskgu"ctg"f gcns'y kij "d { "c"F gr quksqt { ."yi g"Eqo r cp { 'uj cm' kpyko cyg"tj g"f gycknu"qh"cmqyo gpy"qh"t grgxcpy"Ugewt kykgu"tj gt gqh"yq "tj g"F gr qukyqt ("to o gf kcygn("qp"cmqyo gpy"qh"twej "Ugewt kykgu"t)

Egt vkhecvg"P wo dgt "cpf "qyj gt "f gvckru"qh"Ugewt kkgu "kp"F gr qukqt {<"

Pqy kpi "eqpvckpgf "kp" y g"Cev'qt" y gug"Ctvkergu't gi ctf kpi "y g"pgeguukv{"qh" j cxkpi "egtvkhlecvg" pwo dgt lf kuvkpevkxg" pwo dgtu"hqt" Ugewtkskgu 'kunwgf ''d { ''yj g'Eqorcp { ''uj cm'crrn (''vq'Ugewtkskgu''j grf ''y ksj ''c'F grqukqt { 0'

Tgi kuvgt "cpf "Kpf gz "qh'Dgpghkekcn'Qy pgtu≺"

Vj g"Tgi kurgt "cpf "Kpf gz "qh"Dgpghkelcn"Qy pgtu"o clpvckpgf "d{"c"F gr qukqt{"wpf gt"vj g"F gr qukqtkgu"Cev."uj cm'dg"f ggo gf "vq" dg'yj g'Tgi kuvgt"cpf "Kofgz" "kh'crrnkecdrg+"qh"Uj ctgj qrfgtu"cpf "Ugewtkv{/j qrfgtu"hqt'yj g'rwtrqugu"qh'yj gug"Ctvkergu0'

Rtqxkukqpu'qh'Ctvkengu'vq''crrn{'vq''Ujctgu'jgrf'kp'Fgrqukqt{<

Gzegr v'cu''ur gekhecm("r tqxkf gf "kp" yj gug" Ctvkengu. "yj g"r tqxkukqpu" tgncvkpi "vq" lqkpv"j qnf gtu" qh" uj ctgu. "ecmı. "nkgp" qp" uj ctgu. " hqthgkwtg"qh"uj ctgu"cpf "tcpuhgt"cpf "tcpuo kuukqp"qh"uj ctgu"uj cm"dg"cr r nkecdng"vq"uj ctgu"j grf "kp"F gr qukqt { "uq"hct"cu"vj g{" crrn("\q"ujctgu"j grf "kp"rj {ukecn'hqto "uwdlgev'\q"vjg"rtqxkukqpu"qh'vjg"Fgrquksqtkgu"Cev0"

s+ Fgrqukqt{"'\q"hwtpkuj "kphqto c\kqp<"

Gxgt{"F gr qukqt{"uj cm"hwtpkuj "vq"y g"Eqo r cp{"kphqto cvkqp"cdqwv"y g"tcpuhgt"qh"ugewtkkgu"kp"y g"pco g"qh"y g"Dgpghkelcn" Qy pgt "cv'luvej "kpvgtxcm"cpf "kp'uvej "o cppgt "cu'o c{ "dg'ur gekhkgf "d{ "Ncy "cpf "vj g'Eqo r cp{ 'kp''yj cv'dgj cnt0'

Qr vkqp"vq"qr v"qwv"kp"tgur gev"qh"cp{ "uwej "Ugewtkv{<"

Ki'c'Dgpghlekcn'Qy pgt'iuggmu'\q'qr v'qw'qh'c'F gr qukqt { 'kp't gur gev'qh'cp { 'Ugewt kv{ .'j g'tij cmlkphqto 'Vj g'F gr qukqt { 'ceeqtf kpi n{ 0' Vj g'F gr qukqt { 'uj cm'qp'tgegkr v'qh'uwej 'kphqto cwlqp'o cmg'crrtqrtkcvg'gpvtkgu'kp'kvu'tgeqtfu'cpf'uj cm'kphqto 'vj g'Eqorcp { 0' $eqpf \ kkqpu"cpf "qp"r \ c \{o \ gpv'qh'uwej \ "hggu"cu"o \ c \{"dg"ur \ gekhkgf "d \{"ij \ g"tgi \ wrc\cdot kqpu." kuuwg"ij \ g"egt \cdot khkecvg"qh'ugewt kkgu"vq"ij \ g'egt \cdot khkecvg"qh'ugewt kkgu vq \ g'egt \cdot khkecvg"qh'ugewt kkgu"vq \ g'egt \cdot khkecvg \ g'egt \cdot khkecvg \ g'egt \cdot khkecvg \ g'egt \ g'egt \cdot khkecvg \ g'egt \ g'egt \ g'egt \ g'egt$ Dgpghlelcn'Qy pgt "qt "y g"tcpulgtgg"cu 'y g"ecug"o c { "dg0"

Qxgttkfkpi 'ghhgev'qh'vj ku'Ctvkeng<'

Rtqxkıkqpu'qh'yi kıi'Ctvkerg'y krij cxg'hwnightgev'cpf 'hqteg'pqv'y kıj uvcpf kpi "cp{ yi kpi "vq'yi g'eqpvtct{ "qt'kpeqpukugpv'eqpvckpgf" kp"cp{"qyj gt"Ctvkergu0"

460 PQO IP CVIQP'D['UGEWI KVIGU'J QNF GTU'



- Gxgt{'j qrf gt'qh'Ugewtkkgu'qh''y g'Eqorcp{'vko g.'pqo kpcvg.'kp''y g'o cppgt'r tguetkdgf 'wpf gt''y g'Eqorcpkgu'' *Uj ctg'Ecrkcn'cpf 'F gdgpwtgu+'Twgu.''4236.''c'Rgtuqp''cu'j ku'pqo kpgg'kp''y j qo ''vj g'Ugewtkkgu''qh'yj g'Eqorcp{'j gnf''d{" j ko "uj cm'xguv'kp" yj g"gxgpv'qh'j ku"f gcyj 0'
- Y j gtg"y g"Ugewtkkgu"qh"y g"Eqo r cp{"ctg"j grf"d{"o qtg"y cp"qpg"Rgtuqp"lqkpv\{."y g"lqkpv\'j qrf gtu"o c{"vqi gyj gt" pqo kpcvg."kp"yj g"o cppgt"r tguetkdgf "wpf gt"yj g"Eqo r cpkgu"*Uj ctg"Ecr kxcn"cpf "F gdgpwtgu+"Twrgu."4236."c"Rgtuqp"cu" yj gkt "pqo kpgg"kp"y j qo "cm'yj g"tki j wu'kp"yj g"Ugewtkskgu"Eqo r cp{"uj cm'xguv'kp"yj g"gxgpv'qh'f gcyj "qh'cm'yj g"lqkpv'j qnf gtu0"
- $P \ q \ y \ k j \ u c p f \ k p \ "c p \{ \ ' j \ k p \ "c p \{ \ ' q \ j \ g t \ "N c y \ "h q t \ ' j \ g \ ' k p \ "d g \ ' h p \ "h q t e g \ ' q t \ ' k p \ "c p \{ \ ' f \ k u \ q u k k q p . "y \ j \ g v \ g \ t \ ' h q t e g \ ' k p \ ' h q t e g \ ' q t \ ' k p \ ' h q t e g \ ' q t \ ' k p \ ' h q t e g \ ' q t \ ' k p \ ' h q t e g \ ' q t \ ' k p \ ' h q t e g \ ' q t \ ' k p \ ' h q t e g \ ' q t \ ' k p \ ' h q t e g \ ' q t \ ' k p \ ' h q t e g \ ' q t \ ' k p \ ' h q t e g \ ' q t \ ' k p \ ' h q t e g \ ' q t \ ' k p \ ' h q t e g \ ' q t \ ' k p \ ' h q t e g \ ' q t \ ' k p \ ' h q t e g \ ' q t \ ' k p \ ' h q t e g \ ' q t \ ' k p \ ' h q t e g \ ' q t \ ' k p \ ' h q t e g \ ' q t \ ' k p \ ' h q t e g \ ' q t \ ' k p \ ' h q t e g \ ' q t \ ' k p \ ' h q t e g \ ' q t \ ' k p \ ' q t \ ' k p \ ' h q t e g \ ' q t \ ' k p \ ' q t \ ' k p \ ' q t \ ' k p \ ' q t \ ' q t \ ' k p \ ' q t \ ' k p \ ' q t \ ' k p \ ' q t \ ' k p \ ' q t \ ' q$ e+vguvco gpvct { "qt"qyj gty kug. "kp"tgur gev'qh"vj g"Ugewtkkgu"qh"vj g"Eqo r cp { ."y j gtg"c"pqo kpcvkqp"o cf g"kp"vj g"o cppgt" r tguetkdgf "wpf gt" y g"Eqo r cpkgu" "U ctg" Ecr kxcri'cpf "F gdgpwtgu+"Twgu." 4236. "r wtr qtw" vq" eqphgt" qp" cp { "Rgtuqp" y g" $tki\ j\ v'vq'xguv'vj\ g'Ugewtkkgu'qh'vj\ g'Eqo\ r\ cp\{.''vj\ g'pqo\ kpgg''vj\ cm''qp''vj\ g'f\ gcvj\ ''qh'vj\ g'f\ qrf\ gt''qh'Ugewtkkgu''qh'vj\ g'Eqo\ r\ cp\{.''vj\ g'pqo\ kpgg''vj\ cm''qp''vj\ g'f\ gcvj\ ''qh'vj\ g'f\ qrf\ gt''qh'Ugewtkkgu''qh'vj\ g'Eqo\ r\ cp\{.''vj\ g''pqo\ kpgg''vj\ cm''qp''vj\ g''f\ gcvj\ ''qh'vj\ g''pqrf\ gt''qh'Ugewtkkgu''qh'vj\ g''Eqo\ r\ cp\{.''vj\ g''pqo\ kpgg''vj\ cm''qp''vj\ g''f\ gcvj\ ''qh'vj\ g''pqrf\ gt''qh'Vgewtkkgu''qh'vj\ g''Eqo\ r\ cp\{.''vj\ g''pqo\ kpgg''vj\ cm''qp''vj\ g''pqrf\ gt''qh'Vgewtkkgu''qh'vj\ g''Eqo\ r\ cp\{.''vj\ g''pqo\ kpgg''vj\ cm''qp''vj\ g''pqrf\ gt''qh'Vgewtkkgu''qh'vj\ g''pqo\ kpgg''vj\ cm''qp''vj\ g''p$ qt. "cu'\j g"ecug"o c{ "dg. "qp"\j g"f gc\j "qh'\j g"lqkp\j qrf gtu"dgeqo g"gp\krgf "\q"cm\\j g'tki j \u'\kp"Ugewtk\kgu"qh'\j g'j qrf gt"qt." cu'yj g'ecug'o c{''dg.''qh''cm'yj g''lqkpv'j qrf gtu.''kp''tgrcvkqp''vq''uwej ''Ugewtkxkgu''qh''y g'Eqo r cp{''vq''yj g''gzenxukqp''qh''cm'qyj gt'' Rgtuqpu."wprguu"yj g"pqo kpckqp"ku"xctkgf "qt"ecpegmgf "kp"yj g"rtguetkdgf "o cppgt"wpf gt"yj g"Eqo r cpkgu"∜Uj ctg"Ecr kxcrl' cpf 'F gdgpwtgu+'Twrgu.'42360'
- Yjgtg"yjg"pqo~kpgg"ku"c"o~kpqt."yjg"j~qnf~gt"qh"yjg"Ugewtkkgu"eqpegtpgf."ecp"o~cmg"yjg"pqo~kpcvkqp"vq"crrqkpv"kp"r tguetkdgf "o cppgt" wpf gt" 'y g"Eqo r cpkgu" "Uj ctg" Ecr kxrl'cpf "F gdgpwtgu+" Twgu. "4236. "cp{"Rgtuqp" \q"dgeqo g"gpvkxrgf" vq''y g'Ugewtkkgu''qh''y g'Eqorcp{'kp''y g''gxgpv'qh''j ku'f gcyj.'f wtkpi ''y g''o kpqtkx{0'
- Vj g"tcpuo kuukqp"qh"Ugewtkskgu"qh"yj g"Eqorcp{"d{"yj g"j qrf gtu"qh"uvej "Ugewtkskgu"cpf "tcpuhgt"kp"ecug"qh"pqo kpcvkqp" g+ uj cm'dg"uwdlgev'vq"cpf "kp"ceeqtf cpeg"y kj "yj g"rtqxkukqpu"qh''yj g"Eqo r cpkgu"*Uj ctg"Ecr kcn'cpf "F gdgpwtgu+"Twgu."

470 PQO IP CVIQP 'HQT 'F GRQUIVU'

C'f gr qukqt'*y j q'uj cmidg'yj g'o go dgt'qh'yj g'Eqo r cp{+'o c{."cv'cp{ "vko g."o cng"c'pqo kpcvkqp"cpf "yj g'r tqxkukqpu'qh'Ugevkqp" 94"qh'yj g'Eqorcpkgu'Cev."4235."cu'co gpf gf "tıj cm"cu'hct "cu'o c{ "dg."crrn(" 'tq'yj g'pqo kpcvkqpu'o cf g'kp't grcvkqp''\q''yj g'f gr quksu" o cf g'uwdlgev'vq''y g'r tqxkukqpu''qh'y g'Twrgu''cu''o c{ ''dg''r tguetkdgf 'kp''y ku'tgi ctf 0'

480 PQO PPCVKQP'PP'EGTVCPP'QVJ GT'ECUGU''

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490 EQRKGU'QHO GO QTCPF WO 'CPF'CTVKENGU'VQ'DG'UGPV'VQ'O GO DGTU'

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a) Every Annual General Meeting shall be called during business hours, that is, between 9 A.M. and 6 P.M. on a day that is not a national holiday, and shall be held at the Office of the Company or at some other place within the city, town or village in which the Office of the Company is situated, as the Board may determine and the notices calling the Meeting shall specify it as the Annual General Meeting.

Provided a General Meeting of the Company may be held through video conferencing or other audio-visual means, subject to the Companies Act and relevant rules, circulars, notifications, guidelines issued by MCA from time to time.

b) Every Shareholder of the Company shall be entitled to attend the Annual General Meeting either in person or by proxy and the Auditor of the Company shall have the right to attend and to be heard at any General Meeting which he attends on any part of the business which concerns him as Auditor. At every Annual General Meeting of the Company there shall be laid on the table, the Directors' Report and Audited Statement of Accounts, Auditors' Report, (if not already incorporated in the Audited Statement of Accounts), the proxy Register with proxies and the Register of Directors' shareholdings which latter Register shall remain open and accessible during the continuance of the Meeting. The Board shall cause to be prepared the Annual Return and forward the same to the concerned Registrar of Companies, in accordance with Sections 92 and 137 of the Companies Act, 2013, as amended. The Directors are also entitled to attend the Annual General Meeting.

32. NOTICE OF GENERAL MEETINGS

a) Number of days' notice of General Meeting to be given: A General Meeting of the Company may be called by giving not less than 21 (twenty one) days clear notice in writing or in electronic mode, excluding the day on which notice is served or deemed to be served (i.e., on expiry of 48 (forty eight) hours after the letter containing the same is posted). However, a General Meeting may be called after giving shorter notice if consent is given in writing or by electronic mode by not less than 95 (ninety five) percent of the Shareholders entitled to vote at that meeting or in such other manner as may be prescribed under Law.

The notice of every meeting shall be given to:

- a. every Shareholder, legal representative of any deceased Shareholder or the assignee of an insolvent member of the Company,
- b. Auditor or Auditors of the Company, and
- c. all Directors.
- b) Notice of meeting to specify place, etc., and to contain statement of business: Notice of every meeting of the Company shall specify the place, date, day and hour of the meeting, and shall contain a statement of the business to be transacted thereat shall be given in the manner prescribed under Section 102 of the Companies Act, 2013, as amended.
- c) Contents and manner of service of notice and Persons on whom it is to be served: Every notice may be served by the Company on any Shareholder thereof as per Article 32 (a).
- d) Special Business: Subject to the applicable provisions of the Act, where any items of business to be transacted at the meeting are deemed to be special, there shall be annexed to the notice of the meeting a statement setting out all material facts concerning each item of business including any particular nature of the concern or interest if any therein of every Director or manager (as defined under the provisions of the Act), if any or key managerial personnel (as defined under the provisions of the Act) or the relatives of any of the aforesaid and where any item of special business relates to or affects any other company, the extent of shareholding interest in that other company of every Director or manager (as defined under the provisions of the Act) or the relatives of any of the aforesaid of the first mentioned company shall also be set out in the statement if the extent of such interest is not less than 2 per cent of the paid up share capital of that other company. All business transacted at any meeting of the Company shall be deemed to be special and all business transacted at the Annual General Meeting of the Company with the exception of the business specified in Section 102 of the Companies Act, 2013, as amended shall be deemed to be special.
- e) Resolution requiring Special Notice: With regard to resolutions in respect of which special notice is required to be given by the Act, a special notice shall be given as required by Section 115 of the Companies Act, 2013, as amended.
- f) Notice of Adjourned Meeting when necessary: When a meeting is adjourned for 30 (thirty) days or more, notice of the adjourned meeting shall be given as in the case of an original meeting in accordance with the applicable provisions of the Act.



- g) Notice when not necessary: Save as aforesaid, and as provided in Section 103 of the Companies Act, 2013, as amended, it shall not be necessary to give any notice of an adjournment or of the business to be transacted at an adjourned meeting.
- h) The notice of the General Meeting shall comply with the provisions of Companies (Management and Administration) Rules, 2014.

33. REQUISITION OF EXTRAORDINARY GENERAL MEETING

- a) The Board may, whenever it thinks fit, call an Extraordinary General Meeting.
- b) The Board may, whenever it thinks fit, call an Extraordinary General Meeting on receipt of requisition from such number of Shareholders who hold, on the date of receipt of the requisition, not less than one-tenth of such of the Paid up Share Capital of the Company as on that date carries the right of voting and such meeting shall be held at the Office or at such place and at such time as the Board thinks fit.
- c) Any valid requisition so made by Shareholders must state the object or objects of the meeting proposed to be called, and must be signed by the requisitionists and be deposited at the Office; provided that such requisition may consist of several documents in like form each signed by one or more requisitionists.
- d) Upon the receipt of any such valid requisition, the Board shall forthwith call an Extraordinary General Meeting and if they do not proceed within 21 (twenty-one) days from the date of the requisition being deposited at the Office to cause a meeting to be called on a day not later than 45 (forty-five) days from the date of deposit of the requisition, the requisitionists or such of their number as represent either a majority in value of the Paid up Share Capital held by all of them or not less than one-tenth of such of the Paid-up Share Capital of the Company as is referred to in Section 100 of the Companies Act, 2013, as amended, whichever is less, may themselves call the meeting, but in either case any meeting so called shall be held within three months from the date of the delivery of the requisition as aforesaid.
- e) Any meeting called under the foregoing sub-articles by the requisitionists, shall be called in the same manner, as nearly as possible, as that in which a meeting is to be called by the Board.
- f) The accidental omission to give any such notice as aforesaid to any of the Shareholders, or the non-receipt thereof, shall not invalidate any resolution passed at any such meeting.
- g) No General Meeting, Annual or Extraordinary, shall be competent to enter into, discuss or transact any business which has not been mentioned in the notice or notices by which it was convened.
- h) The Extraordinary General Meeting called under this article shall be subject to and in accordance with the provisions contained under the Companies (Management and Administration) Rules, 2014.

34. NO BUSINESS TO BE TRANSACTED IN GENERAL MEETING IF QUORUM IS NOT PRESENT

The quorum for the Shareholders' Meeting shall be in accordance with Section 103 of the Companies Act, 2013, as amended. Subject to the provisions of Section 103(2) of the Companies Act, 2013, as amended, if such a quorum is not present within half an hour from the time set for the Shareholders' Meeting, the Shareholders' Meeting shall be adjourned to the same time and place or to such other date and such other time and place as the Board may determine and the agenda for the adjourned Shareholders' Meeting shall remain the same. If at such adjourned meeting also, a quorum is not present, at the expiration of half an hour from the time appointed for holding the meeting, the members present shall be a quorum, and may transact the business for which the meeting was called.

35. CHAIRMAN OF THE GENERAL MEETING

The Chairman of the Board shall be entitled to take the Chair at every General Meeting, whether Annual or Extraordinary. If there is no such Chairman of the Board or if at any meeting he shall not be present within fifteen minutes of the time appointed for holding such meeting or if he is unable or unwilling to take the Chair, then the Directors present shall elect one of them as Chairman. If no Director is present or if all the Directors present decline to take the Chair, then the Shareholders present shall elect one of their member to be the Chairman of the meeting. No business shall be discussed at any General Meeting except the election of a Chairman while the Chair is vacant.

36. CHAIRMAN CAN ADJOURN THE GENERAL MEETING



The Chairman may, with the consent given in the meeting at which a quorum is present (and if so directed by the meeting) adjourn the General Meeting from time to time and from place to place within the city, town or village in which the Office of the Company is situate but no business shall be transacted at any adjourned meeting other than the business left unfinished at the meeting from which the adjournment took place.

37. QUESTIONS AT GENERAL MEETING HOW DECIDED

- a) At any General Meeting, a resolution put to the vote of the General Meeting shall, unless a poll is demanded, be decided by a show of hands. Before or on the declaration of the result of the voting on any resolution by a show of hands, a poll may be carried out in accordance with the applicable provisions of the Act or the voting is carried out electronically. Unless a poll is demanded, a declaration by the Chairman that a resolution has, on a show of hands, been carried or carried unanimously, or by a particular majority, or lost and an entry to that effect in the Minute Book of the Company shall be conclusive evidence of the fact, of passing of such resolution or otherwise.
- b) In the case of equal votes, the Chairman shall both on a show of hands and at a poll, (if any), have a casting vote in addition to the vote or votes to which he may be entitled as a Shareholder.
- c) If a poll is demanded as aforesaid, the same shall subject to anything stated in these Articles be taken at such time, (not later than forty-eight hours from the time when the demand was made), and place within the City, Town or Village in which the Office of the Company is situate and either by a show of hands or by ballot or by postal ballot, as the Chairman shall direct and either at once or after an interval or adjournment, or otherwise and the result of the poll shall be deemed to be the decision of the meeting at which the poll was demanded. Any business other than that upon which a poll has been demanded may be proceeded with, pending the taking of the poll. The demand for a poll may be withdrawn at any time by the Person or Persons who made the demand.
- d) Where a poll is to be taken, the Chairman of the meeting shall appoint two scrutinizers to scrutinise the votes given on the poll and to report thereon to him. One of the scrutinizers so appointed shall always be a Shareholder, (not being an officer or employee of the Company), present at the meeting provided such a Shareholder is available and willing to be appointed. The Chairman shall have power at any time before the result of the poll is declared, to remove a scrutinizer from office and fill vacancies in the office of scrutinizer arising from such removal or from any other cause.
- e) Any poll duly demanded on the election of a Chairman of a meeting or any question of adjournment, shall be taken at the meeting forthwith. A poll demanded on any other question shall be taken at such time not later than 48 hours from the time of demand, as the Chairman of the meeting directs.
- f) The demand for a poll except on the question of the election of the Chairman and of an adjournment shall not prevent the continuance of a meeting for the transaction of any business other than the question on which the poll has been demanded.
- g) No report of the proceedings of any General Meeting of the Company shall be circulated or advertised at the expense of the Company unless it includes the matters required by these Articles or Section 118 of the Companies Act, 2013, as amended to be contained in the Minutes of the proceedings of such meeting.
- h) The Shareholders will do nothing to prevent the taking of any action by the Company or act contrary to or with the intent to evade or defeat the terms as contained in these Articles.

38. PASSING RESOLUTIONS BY POSTAL BALLOT

- a) Notwithstanding any of the provisions of these Articles, the Company may, and in the case of resolutions relating to such business as notified under the Companies (Management and Administration) Rules, 2014, as amended, or other Law required to be passed by postal ballot, shall get any resolution passed by means of a postal ballot, instead of transacting the business in the General Meeting of the Company. Also, the Company may, in respect of any item of business other than ordinary business and any business in respect of which Directors or Auditors have a right to be heard at any meeting, transact the same by way of postal ballot.
- b) Where the Company decides to pass any resolution by resorting to postal ballot, it shall follow the procedures as prescribed under Section 110 of the Companies Act, 2013, as amended and the Companies (Management and Administration) Rules, 2014, as amended from time.

39. VOTES OF MEMBERS



- a) No Shareholder shall be entitled to vote either personally or by proxy at any General Meeting or meeting of a class of Shareholders either upon a show of hands or upon a poll in respect of any shares registered in his name on which calls or other sums presently payable by him have not been paid or in regard to which the Company has exercised any right of lien.
- b) No member shall be entitled to vote at a General Meeting unless all calls or other sums presently payable by him have been paid, or in regard to which the Company has lien and has exercised any right of lien.
- c) Subject to the provisions of these Articles, without prejudice to any special privilege or restrictions as to voting for the time being attached to any class of shares for the time being forming a part of the Capital of the Company, every Shareholder not disqualified by the last preceding Article, shall be entitled to be present, and to speak and vote at such meeting, and on a show of hands, every Shareholder present in person shall have one vote and upon a poll, the voting right of such Shareholder present, either in person or by proxy, shall be in proportion to his share of the Paid Up Share Capital of the Company held alone or jointly with any other Person or Persons.

Provided however, if any Shareholder holding Preference shares be present at any meeting of the Company, save as provided in Section 47(2) of the Companies Act, 2013, as amended, he shall have a right to vote only on resolutions placed before the Meeting, which directly affect the rights attached to his preference shares.

- d) On a poll taken at a meeting of the Company, a Shareholder entitled to more than one vote, or his proxy, or any other Person entitled to vote for him (as the case may be), need not, if he votes, use or cast all his votes in the same way.
- e) A Shareholder of unsound mind or in respect of whom an order has been made by any court having jurisdiction in lunacy, may vote, whether on a show of hands or on a poll, through a committee or through his legal guardian; and any such committee or guardian may, on a poll vote by proxy. If any Shareholder be a minor his vote in respect of his Share(s) shall be exercised by his guardian(s), who may be selected (in case of dispute) by the Chairman of the meeting.
- f) If there be joint registered holders of any shares, any one of such Persons may vote at any meeting or may appoint another Person, (whether a Shareholder or not) as his proxy in respect of such shares, as if he were solely entitled thereto; but the proxy so appointed shall not have any right to speak at the meeting and if more than one of such joint-holders be present at any meeting, then one of the said Persons so present whose name stands higher in the Register of Members shall alone be entitled to speak and to vote in respect of such shares, but the other joint-holders shall be entitled to be present at the meeting. Several Executors or Administrators of a deceased Shareholder in whose name shares stand shall for the purpose of these Articles be deemed joint-holders thereof.
- g) Subject to the provision of these Articles, votes may be given personally or by an attorney or by proxy. A body corporate, whether or not a Company within the meaning of the Act, being a Shareholder may vote either by a proxy or by a representative duly authorised in accordance with Section 113 of the Companies Act, 2013, as amended and such representative shall be entitled to exercise the same rights and powers, (including the right to vote by proxy), on behalf of the body corporate which he represents as that body could have exercised if it were an individual Shareholder.
- h) Any Person entitled to transfer any shares of the Company may vote at any General Meeting in respect thereof in the same manner as if he were the registered holder of such shares, provided that forty-eight hours at least before the time of holding the meeting or adjourned meeting, as the case may be, at which he proposes to vote, he shall satisfy the Board of his right to such shares and give such indemnity (if any) as the Board may require unless the Board shall have previously admitted his right to vote at such meeting in respect thereof.
- i) Every proxy, (whether a Shareholder or not), shall be appointed in writing under the hand of the appointer or his attorney, or if such appointer is a corporation under the Common Seal of such corporation or be signed by an officer or an attorney duly authorised by it, and any committee or guardian may appoint proxy. The proxy so appointed shall not have any right to speak at a meeting.
- j) An instrument of proxy may appoint a proxy either for (i) the purposes of a particular meeting (as specified in the instrument) or (ii) for any adjournment thereof or (iii) it may appoint a proxy for the purposes of every meeting of the Company, or (iv) of every meeting to be held before a date specified in the instrument for every adjournment of any such meeting.
- k) A Shareholder present by proxy shall be entitled to vote only on a poll.
- 1) An instrument appointing a proxy and a power of attorney or other authority (including by way of a Board Resolution, (if any),) under which it is signed or a notarially certified copy of that power or authority or resolution as the case may



be, shall be deposited at the Office not later than forty-eight hours before the time for holding the meeting at which the Person named in the instrument proposes to vote and in default the instrument of proxy shall not be treated as valid. No instrument appointing a proxy shall be valid after the expiration of 12 months from the date of its execution. An attorney shall not be entitled to vote unless the power of attorney or other instrument or resolution as the case may be appointing him or a notarially certified copy thereof has either been registered in the records of the Company at any time not less than forty-eight hours before the time for holding the meeting at which the attorney proposes to vote, or is deposited at the Office of the Company not less than forty-eight hours before the time fixed for such meeting as aforesaid. Notwithstanding that a power of attorney or other authority has been registered in the records of the Company, the Company may, by notice in writing addressed to the Shareholder or the attorney, given at least 48 (forty eight) hours before the meeting, require him to produce the original power of attorney or authority or resolution as the case may be and unless the same is deposited with the Company not less than forty-eight hours before the time fixed for the meeting, the attorney shall not be entitled to vote at such meeting unless the Board in their absolute discretion excuse such non-production and deposit.

- m) Every instrument of proxy whether for a specified meeting or otherwise should, as far as circumstances admit, be in any of the forms set out in the Companies (Management and Administration) Rules, 2014.
- n) If any such instrument of appointment be confined to the object of appointing an attorney or proxy for voting at meetings of the Company it shall remain permanently or for such time as the Directors may determine in the custody of the Company; if embracing other objects a copy thereof, examined with the original, shall be delivered to the Company to remain in the custody of the Company.
- o) A vote given in accordance with the terms of an instrument of proxy shall be valid notwithstanding the previous death of the principal, or revocation of the proxy or of any power of attorney under which such proxy was signed, or the transfer of the Share in respect of which the vote is given, provided that no intimation in writing of the death, revocation or transfer shall have been received at the Office before the meeting.
- p) No objection shall be made to the validity of any vote, except at the Meeting or poll at which such vote shall be tendered, and every vote whether given personally or by proxy, not disallowed at such meeting or poll shall be deemed valid for all purposes of such meeting or poll whatsoever.
- q) The Chairman of any meeting shall be the sole judge of the validity of every vote tendered at such meeting. The Chairman present at the taking of a poll shall be in the sole judge of the validity of every vote tendered at such poll.
- i. The Company shall cause minutes of all proceedings of every General Meeting to be kept by making within 30 (thirty) days of the conclusion of every such meeting concerned, entries thereof in books kept for that purpose with their pages consecutively numbered.
- ii. Each page of every such book shall be initialed or signed and the last page of the record of proceedings of each meeting in such book shall be dated and signed by the Chairman of the same meeting within the aforesaid period of 30 (thirty) days or in the event of the death or inability of that Chairman within that period, by a Director duly authorised by the Board for that purpose.
- In no case the minutes of proceedings of a meeting shall be attached to any such book as aforesaid by pasting or otherwise.
- iv. The Minutes of each meeting shall contain a fair and correct summary of the proceedings thereat.
- v. All appointments of Directors of the Company made at any meeting aforesaid shall be included in the minutes of the meeting.
- vi. Nothing herein contained shall require or be deemed to require the inclusion in any such Minutes of any matter which in the opinion of the Chairman of the Meeting (i) is or could reasonably be regarded as, defamatory of any person, or (ii) is irrelevant or immaterial to the proceedings, or (iii) is detrimental to the interests of the Company. The Chairman of the meeting shall exercise an absolute discretion in regard to the inclusion or non-inclusion of any matter in the Minutes on the aforesaid grounds.
- vii. Any such Minutes shall be evidence of the proceedings recorded therein.
- viii. The book containing the Minutes of proceedings of General Meetings shall be kept at the Office of the Company and shall be open, during business hours, for such periods not being less in the aggregate than two hours in each day as the Board determines, for the inspection of any Shareholder without charge.



- ix. The Company shall cause minutes to be duly entered in books provided for the purpose of:
 - a. the names of the Directors and Alternate Directors present at each General Meeting;
 - b. all Resolutions and proceedings of General Meeting.
 - r) The Shareholders shall vote (whether in person or by proxy) all of the shares owned or held on record by them at any Annual or Extraordinary General Meeting of the Company called for the purpose of filling positions to the Board, appointed as a Director of the Company under Sections 152 and 164(1) of the Companies Act, 2013, as amended in accordance with these Articles.
 - s) The Shareholders will do nothing to prevent the taking of any action by the Company or act contrary to or with the intent to evade or defeat the terms as contained in these Articles. All matters arising at a General Meeting of the Company, other than as specified in the Act or these Articles if any, shall be decided by a majority vote.
 - t) The Shareholders shall exercise their voting rights as shareholders of the Company to ensure that the Act or these Articles are implemented and acted upon by the Shareholders, and by the Company and to prevent the taking of any action by the Company or by any Shareholder, which is contrary to or with a view or intention to evade or defeat the terms as contained in these Articles.
 - u) Any corporation which is a Shareholder of the Company may, by resolution of the Board or other governing body, authorise such person as it thinks fit to act as its representative at any meeting of the Company and the said person so authorised shall be entitled to exercise the same powers on behalf of the corporation which he represents as that corporation could have exercised if it were an individual Shareholder in the Company (including the right to vote by proxy).
 - v) The Company shall also provide e-voting facility to the Shareholders of the Company in terms of the provisions of the Companies (Management and Administration) Rules, 2014, the SEBI Listing Regulations or any other Law, if applicable to the Company.

40. DIRECTORS

Subject to the applicable provisions of the Act, the number of Directors of the Company shall not be less than 3 (three) and not more than 15 (fifteen). The Company shall also comply with the provisions of the Companies (Appointment and Qualification of Directors) Rules, 2014 and the provisions of the SEBI Listing Regulations. The Board shall have an optimum combination of executive and Independent Directors with at least 1 (one) woman Director, as may be prescribed by Law from time to time.

41. CHAIRMAN OF THE BOARD OF DIRECTORS

- a) The members of the Board shall elect any one of them as the Chairman of the Board. The Chairman shall preside at all meetings of the Board and the General Meeting of the Company. The Chairman shall have a casting vote in the event of a tie.
- b) If for any reason the Chairman is not present at the meeting or is unwilling to act as Chairman, the members of the Board shall appoint any one of the remaining Directors as the Chairman.

42. APPOINTMENT OF ALTERNATE DIRECTORS

Subject to Section 161 of the Companies Act, 2013, as amended, any Director shall be entitled to nominate an alternate director to act for him during his absence for a period of not less than 3 (three) months. The Board may appoint such a person as an Alternate Director to act for a Director (hereinafter called "the Original Director") (subject to such person being acceptable to the Chairman) during the Original Director's absence for a period of not less than three months from India. An Alternate Director appointed under this Article shall not hold office for a period longer than that permissible to the Original Director in whose place he has been appointed and shall vacate office if and when the Original Director returns to India. If the term of the office of the Original Director is determined before he so returns to India, any provisions in the Act or in these Articles for automatic re-appointment shall apply to the Original Director and not to the Alternate Director.

43. CASUAL VACANCY AND ADDITIONAL DIRECTORS



Subject to the applicable provisions of the Act and these Articles, the Board shall have the power at any time and from time to time to appoint any qualified Person to be a Director either as an addition to the Board or to fill a casual vacancy but so that the total number of Directors shall not at any time exceed the maximum number fixed under Article 40. Any Person so appointed as an addition shall hold office only up to the earlier of the date of the next Annual General Meeting or at the last date on which the Annual General Meeting should have been held but shall be eligible for appointment by the Company as a Director at that meeting subject to the applicable provisions of the Act.

44. DEBENTURE DIRECTORS

If it is provided by a trust deed, securing or otherwise, in connection with any issue of Debentures of the Company, that any Person/lender or Persons/lenders shall have power to nominate a Director of the Company, then in the case of any and every such issue of Debentures, the Person/lender or Persons/lenders having such power may exercise such power from time to time and appoint a Director accordingly. Any Director so appointed is herein referred to a Debenture Director. A Debenture Director may be removed from office at any time by the Person/lender or Persons/lenders in whom for the time being is vested the power under which he was appointed and another Director may be appointed in his place. A Debenture Director shall not be bound to hold any qualification shares and shall not be liable to retire by rotation or be removed by the Company. The trust deed may contain ancillary provisions as may be arranged between the Company and the trustees and all such provisions shall have effect notwithstanding any other provisions contained herein.

45. INDEPENDENT DIRECTORS

The Company shall have such number of Independent Directors on the Board of the Company, as may be required in terms of the provisions of Section 149 of the Companies Act, 2013, as amended and the Companies (Appointment and Qualification of Directors) Rules, 2014 or any other Law, as may be applicable. Further, the appointment of such Independent Directors shall be in terms of the aforesaid provisions of Law and subject to the requirements prescribed under the SEBI Listing Regulations.

46. EQUAL POWER TO DIRECTOR

Except as otherwise provided in these Articles, all the Directors of the Company shall have in all matters, equal rights and privileges and shall be subject to equal obligations and duties in respect of the affairs of the Company.

47. NOMINEE DIRECTORS

Whenever the Board enters into a contract with any lenders for borrowing any money or for providing any guarantee or security or for technical collaboration or assistance or enter into any other arrangement, the Board shall have, subject to the provisions of Section 152 of the Companies Act, 2013, as amended the power to agree that such lenders shall have the right to appoint or nominate by a notice in writing addressed to the Company one or more Directors on the Board for such period and upon such conditions as may be mentioned in the common loan agreement/ facility agreement. The nominee director representing lenders shall not be required to hold qualification shares and not be liable to retire by rotation. The Directors may also agree that any such Director, or Directors may be removed from time to time by the lenders entitled to appoint or nominate them and such lenders may appoint another or other or others in his or their place and also fill in any vacancy which may occur as a result of any such Director, or Directors ceasing to hold that office for any reason whatsoever. The nominee director shall hold office only so long as any monies remain owed by the Company to such lenders.

The nominee director shall be entitled to all the rights and privileges of other Directors including the sitting fees and expenses as payable to other Directors but, if any other fees, commission, monies or remuneration in any form are payable to the Directors, the fees, commission, monies and remuneration in relation to such nominee director shall accrue to the lenders and the same shall accordingly be paid by the Company directly to the lenders.

Provided that if any such nominee director is an officer of any of the lenders, the sittings fees in relation to such nominee director shall also accrue to the lenders concerned and the same shall accordingly be paid by the Company directly to that lenders.

Any expenditure that may be incurred by the lenders or the nominee director in connection with the appointment or directorship shall be borne by the Company.

The nominee director so appointed shall be a member of the project management sub-committee, audit sub-committee and other sub-committees of the Board, if so desired by the lenders.



The nominee director shall be entitled to receive all notices, agenda, etc. and to attend all general meetings and Board meetings and meetings of any committee(s) of the Board of which he is a member and to receive all notices, agenda and minutes, etc. of the said meeting.

If at any time, the nominee director is not able to attend a meeting of Board or any of its committees, of which he is a member, the lenders may depute an observer to attend the meeting. The expenses incurred by the lenders in this connection shall be borne by the Company.

48. NO QUALIFICATION SHARES FOR DIRECTORS

A Director shall not be required to hold any qualification shares of the Company.

49. REMUNERATION OF DIRECTORS

- a) Subject to the applicable provisions of the Act, the Rules, Law including the provisions of the SEBI Listing Regulations, a Managing Director or Managing Directors, and any other Director/s who is/are in the whole time employment of the Company may be paid remuneration either by a way of monthly payment or at a specified percentage of the net profits of the Company or partly by one way and partly by the other, subject to the limits prescribed under the Act.
- b) Subject to the applicable provisions of the Act, a Director (other than a Managing Director or an executive Director) may receive a sitting fee not exceeding such sum as may be prescribed by the Act from time to time for each meeting of the Board or any Committee thereof attended by him.
- c) The remuneration payable to each Director for every meeting of the Board or Committee of the Board attended by them shall be such sum as may be determined by the Board from time to time within the maximum limits prescribed from time to under the Companies Act, 2013, as amended.
- d) All fees/compensation to be paid to non-executive Directors including Independent Directors shall be as fixed by the Board and shall require the prior approval of the Shareholders in a General meeting. Such approval shall also specify the limits for the maximum number of stock options that can be granted to a non-executive Director, in any financial year, and in aggregate. However, such prior approval of the Shareholders shall not be required in relation to the payment of sitting fees to non-executive Directors if the same is made within the prescribed limits under the Act for payment of sitting fees. Notwithstanding anything contained in this article, the Independent Directors shall not be eligible to receive any stock options.

50. SPECIAL REMUNERATION FOR EXTRASERVICES RENDERED BY A DIRECTOR

If any Director be called upon to perform extra services or special exertions or efforts (which expression shall include work done by a Director as a member of any Committee formed by the Directors), the Board may arrange with such Director for such special remuneration for such extra services or special exertions or efforts either by a fixed sum or otherwise as may be determined by the Board. Such remuneration may either be in addition, to or in substitution for his remuneration otherwise provided, subject to the applicable provisions of the Act.

51. TRAVEL EXPENSES OF DIRECTORS

The Board may allow and pay to any Director, who is not a bona fide resident of the place where the meetings of the Board/Committee meetings are ordinarily held; and who shall come to such place for the purpose of attending any meeting, such sum as the Board may consider fair compensation for travelling, lodging and/ or other expenses, in addition to his fee for attending such Board / Committee meetings as above specified; and if any Director be called upon to go or reside out of his ordinary place of his residence on the Company's business, he shall be entitled to be repaid and reimbursed travelling and other expenses incurred in connection with the business of the Company in accordance with the provisions of the Act.

52. CONTINUING DIRECTORS

The continuing Directors may act notwithstanding any vacancy in their body, but if, and so long as their number is reduced below the minimum number fixed by Article 40 hereof, the continuing Directors not being less than two may act for the purpose of increasing the number of Directors to that number, or for summoning a General Meeting, but for no other purpose.

53. VACATION OF OFFICE BY DIRECTOR



- a. Subject to relevant provisions of Sections 167 and 188 of the Companies Act, 2013, as amended, the office of a Director, shall ipso facto be vacated if:
- i. he is found to be of unsound mind by a court of competent jurisdiction; or
- ii. he applies to be adjudicated an insolvent; or
- iii. he is adjudged an insolvent; or
- iv. he is convicted by a court of any offence involving moral turpitude and is sentenced in respect thereof to imprisonment for not less than 6 (six) months; or
- v. he fails to pay any calls made on him in respect of shares of the Company held by him whether alone or jointly with others, within 6 (six) months from the date fixed for the payment of such call, unless the Central Government has by notification in the Official Gazette removed the disqualification incurred by such failure; or
- vi. he absents himself from 3 (three) consecutive meetings of the Board or from all Meetings of the Board for a continuous period of 3 (three) months, whichever is longer, without obtaining leave of absence from the Board; or
- vii. he, (whether by himself or by any Person for his benefit or on his account), or any firm in which he is a partner, or any private company of which he is a director, accepts a loan, or any guarantee or security for a loan, from the Company, in contravention of Section 185 of the Companies Act, 2013, as amended; or
- viii. having been appointed a Director by virtue of his holding any office or other employment in the Company, he ceases to hold such office or other employment in the Company; or
- ix. he acts in contravention of Section 184 of the Companies Act, 2013, as amended; or
- x. he becomes disqualified by an order of the court under Section 203 of the Companies Act, 1956; or
- xi. he is removed in pursuance of Section 169 of the Companies Act, 2013, as amended; or
- xii. he is disqualified under Section 164(2) of the Companies Act, 2013, as amended.

Subject to the applicable provisions of the Act, a Director may resign his office at any time by notice in writing addressed to the Board and such resignation shall become effective upon its acceptance by the Board.

54. RELATED PARTY TRANSACTIONS

- a) Except with the consent of the Board or the Shareholders, as may be required in terms of the provisions of section 188 of the Companies Act, 2013, as amended and the Companies (Meetings of Board and its Powers) Rules, 2014, no company shall enter into any contract or arrangement with a 'related party' with respect to:
- i. sale, purchase or supply of any goods or materials;
- ii. selling or otherwise disposing of, or buying, property of any kind;
- iii. leasing of property of any kind;
- iv. availing or rendering of any services;
- v. appointment of any agent for purchase or sale of goods, materials, services or property;
- vi. such Director's or its relative's appointment to any office or place of profit in the Company, its subsidiary company or associate company; and
- vii. underwriting the subscription of any securities or derivatives thereof, of the Company:

without the consent of the Shareholders by way of a Resolution in accordance with Section 188 of the Companies Act, 2013, as amended.



- b) No Shareholder of the Company shall vote on such Resolution, to approve any contract or arrangement which may be entered into by the Company, if such Shareholder is a related party.
- c) nothing in this Article shall apply to any transactions entered into by the Company in its ordinary course of business other than transactions which are not on an arm's length basis
- d) The Director, so contracting or being so interested shall not be liable to the Company for any profit realised by any such contract or the fiduciary relation thereby established.
- e) The terms "office of profit" and "arm's length basis" shall have the meaning ascribed to them under Section 188 of the Companies Act, 2013, as amended.
- f) The term 'related party' shall have the same meaning as ascribed to it under the Act.
- g) The compliance of the Companies (Meetings of Board and its Powers) Rules, 2014 shall be made for the aforesaid contracts and arrangements.

55. DISCLOSURE OF INTEREST

a) A Director of the Company who is in any way, whether directly or indirectly concerned or interested in a contract or arrangement, or proposed contract or arrangement entered into or to be entered into by or on behalf of the Company, shall disclose the nature of his concern or interest at a meeting of the Board in the manner provided in Section 184 of the Companies Act, 2013, as amended;

Provided that it shall not be necessary for a Director to disclose his concern or interest in any such contract or arrangement entered into or to be entered into with any other company where any of the Directors of the company or two or more of them together holds or hold not more than 2% (two per cent) of the Paid-up Share Capital in the other company or the Company as the case may be. A general notice given to the Board by the Director, to the effect that he is a director or member of a specified body corporate or is a member of a specified firm and is to be regarded as concerned or interested in any contract or arrangement which may, after the date of the notice, be entered into with that body corporate or firm, shall be deemed to be a sufficient disclosure of concern or interest in relation to any contract or arrangement so made. Any such general notice shall expire at the end of the Financial Year in which it is given but may be renewed for a further period of one Financial Year at a time by a fresh notice given in the last month of the Financial Year in which it would have otherwise expired. No such general notice, and no renewal thereof shall be of effect unless, either it is given at a meeting of the Board or the Director concerned takes reasonable steps to secure that it is brought up and read at the first meeting of the Board after it is given.

- i. No Director shall as a Director, take any part in the discussion of, vote on any contract or arrangement entered into or to be entered into by or on behalf of the Company, if he is in any way, whether directly or indirectly, concerned or interested in such contract or arrangements; nor shall his presence count for the purpose of forming a quorum at the time of any such discussion or vote; and if he does vote, his vote shall be void; provided however that nothing herein contained shall apply to:-any contract or indemnity against any loss which the Directors, or any one or more of them, may suffer by reason of becoming or being sureties or a surety for the Company;
- ii. any contract or arrangement entered into or to be entered into with a public company or a private company which is subsidiary of a public company in which the interest of the Director consists solely,
 - 1. in his being –
- I. a director of such company, and
- II. the holder of not more than shares of such number or value therein as is requisite to qualify him for appointment as a Director thereof, he having been nominated as such Director by this Company, or
 - 2. in his being a member holding not more than 2 (two) per cent of its Paid-up Share Capital.

Subject to the provisions of Section 188 of the Companies Act, 2013, as amended and other applicable provisions, if any, of the Act, any Director of the Company, any partner or relative of such Director, any firm in which such Director or a relative of such Director is a partner, any private company of which such Director is a director or member, and any director or manager of such private company, may hold any office or place of profit in the Company.



- b) The Company shall keep a Register in accordance with Section 189 of the Companies Act, 2013, as amended and shall within the time specified therein enter therein such of the particulars as may be. The Register aforesaid shall also specify, in relation to each Director of the Company, the names of the bodies corporate and firms of which notice has been given by him under Article 55(a). The Register shall be kept at the Office of the Company and shall be open to inspection at such Office, and extracts may be taken therefrom and copies thereof may be required by any Shareholder of the Company to the same extent, in the same manner, and on payment of the same fee as in the case of the Register of Members of the Company and the provisions of Section 94 of the Companies Act, 2013, as amended shall apply accordingly.
- c) A Director may be or become a Director of any Company promoted by the Company, or on which it may be interested as a vendor, shareholder, or otherwise, and no such Director shall be accountable for any benefits received as director or shareholder of such Company except in so far as Section 188 or Section 197 of the Companies Act, 2013, as amended as may be applicable.

56. ONE-THIRD OF DIRECTORS TO RETIRE EVERY YEAR

At the Annual General Meeting of the Company to be held in every year, one third of such of the Directors as are liable to retire by rotation for time being, or, if their number is not three or a multiple of three then the number nearest to one third shall retire from office, and they will be eligible for re-election. Provided nevertheless that the managing Director or whole-time Director(s), appointed or the Directors appointed as a Debenture Director, or the Directors appointed as Independent Director(s) under Articles hereto shall not retire by rotation under this Article nor shall they be included in calculating the total number of Directors of whom one third shall retire from office under this Article.

57. PROCEDURE, IF PLACE OF RETIRING DIRECTORS IS NOT FILLED UP

- a) If the place of the retiring Director is not so filled up and the meeting has not expressly resolved not to fill the vacancy, the meeting shall stand adjourned till the same day in the next week, at the same time and place, or if that day is a national holiday, till the next succeeding day which is not a national holiday, at the same time and place.
- b) If at the adjourned meeting also, the place of the retiring Director is not filled up and that meeting also has not expressly resolved not to fill the vacancy, the retiring Director shall be deemed to have been reappointed at the adjourned meeting, unless:-
- i. at that meeting or at the previous meeting a resolution for the reappointment of such Director has been put to the meeting and lost;
- ii. retiring Director has, by a notice in writing addressed to the Company or its Board, expressed his unwillingness to be so reappointed;
- iii. he is not qualified or is disqualified for appointment; or
- iv. a resolution whether special or ordinary is required for the appointment or reappointment by virtue of any applicable provisions of the Act.

58. COMPANY MAY INCREASE OR REDUCE THE NUMBER OF DIRECTORS.

Subject to Article 40 and Sections 149, 152 and 164 of the Companies Act, 2013, as amended, the Company may, by Ordinary Resolution, from time to time, increase or reduce the number of Directors, and may alter their qualifications and the Company may, (subject to the provisions of Section 169 of the Companies Act, 2013, as amended), remove any Director before the expiration of his period of office and appoint another qualified in his stead. The person so appointed shall hold office during such time as the Director in whose place he is appointed would have held the same if he had not been removed.

59. REGISTER OF DIRECTORS ETC.

- a) The Company shall keep at its Office, a Register containing the particulars of its Directors, Managing Directors, Manager, Secretaries and other Persons mentioned in Section 170 of the Companies Act, 2013, as amended and shall otherwise comply with the provisions of the said Section in all respects.
- b) The Company shall in respect of each of its Directors also keep at its Office a Register, as required by Section 170 of the Companies Act, 2013, as amended, and shall otherwise duly comply with the provisions of the said Section in all respects.



60. DISCLOSURE BY DIRECTOR OF APPOINTMENT TO ANY OTHER BODY CORPORATE

Every Director shall in accordance with the provisions of Companies (Meeting of Board and its Powers) Rules, 2014 shall disclose his concern or interest in any company or companies or bodies corporate (including shareholding interest), firms or other association of individuals by giving a notice in accordance with such rules.

61. MANAGING DIRECTOR(S)/WHOLE TIME DIRECTOR(S)/EXECUTIVE DIRECTOR(S)/ MANAGER

Subject to the provisions of Section 203 of the Companies Act, 2013, as amended and of these Articles, the Board shall have the power to appoint from time to time any full time employee of the Company as Managing Director/ whole time director or executive director or manager of the Company. The Managing Director(s) or the whole time director(s) manager or executive director(s), as the case may be, so appointed, shall be responsible for and in charge of the day to day management and affairs of the Company and subject to the applicable provisions of the Act and these Articles, the Board shall vest in such Managing Director/s or the whole time director(s) or manager or executive director(s), as the case may be, all the powers vested in the Board generally. The remuneration of a Managing Director/ whole time director or executive director or manager may be by way of monthly payment, fee for each meeting or participation in profits, or by any or all those modes or any other mode not expressly prohibited by the Act. Board, subject to the consent of the shareholders of the Company shall have the power to appoint Chairman of the Board as the Managing Director / whole time director or executive director of the Company.

62. PROVISIONS TO WHICH MANAGING DIRECTOR(S)/ WHOLE DIRECTOR(S) / EXECUTIVE DIRECTOR(S)/ MANAGER ARE SUBJECT

Notwithstanding anything contained herein, a Managing Director(s) / whole time director(s) / executive director(s) / manager shall subject to the provisions of any contract between him and the Company be subject to the same provisions as to resignation and removal as the other Directors of the Company, and if he ceases to hold the office of a Director he shall ipso facto and immediately cease to be a Managing Director(s) / whole time director(s) / executive director(s) / manager, and if he ceases to hold the office of a Managing Director(s) / whole time director(s) / executive director(s) / manager he shall ipso facto and immediately cease to be a Director.

63. REMUNERATION OF MANAGING DIRECTOR(S)/ WHOLE TIME DIRECTOR(S) / EXECUTIVE DIRECTOR(S)/ MANAGER

The remuneration of the Managing Director(s) / whole time director(s) / executive director(s) / manager shall (subject to Sections 196, 197 and 203 of the Companies Act, 2013, as amended and other applicable provisions of the Act and of these Articles and of any contract between him and the Company) be fixed by the Directors, from time to time and may be by way of fixed salary and/or perquisites or commission or profits of the Company or by participation in such profits, or by any or all these modes or any other mode not expressly prohibited by the Act.

64. POWER AND DUTIES OF MANAGING DIRECTOR(S)/ WHOLE TIME DIRECTOR(S) / EXECUTIVE DIRECTOR(S)/ MANAGER

Subject to the superintendence, control and direction of the Board, the day-to-day management of the Company shall be in the hands of the Managing Director(s) / whole time director(s) / executive director(s) / manager s in the manner as deemed fit by the Board and subject to the applicable provisions of the Act, and these Articles, the Board may by resolution vest any such Managing Director(s)/ whole time director(s) / executive director(s) / manager with such of the powers hereby vested in the Board generally as it thinks fit and such powers may be made exercisable for such period or periods and upon such conditions and subject to the applicable provisions of the Act, and these Articles confer such power either collaterally with or to the exclusion of or in substitution for all or any of the Directors in that behalf and may from time to time revoke, withdraw, alter or vary all or any of such powers.

65. POWER TO BE EXERCISED BY THE BOARD ONLY BY MEETING

The Board shall exercise the following powers on behalf of the Company and the said powers shall be exercised only by resolutions passed at the meeting of the Board: -

- a) to make calls on Shareholders in respect of money unpaid on their shares;
- b) to authorise buy-back of securities under Section 68 of the Companies Act, 2013, as amended;
- c) to issue securities, including debentures, whether in or outside India;



- d) to borrow money(ies);
- e) to invest the funds of the Company;
- f) to grant loans or give guarantee or provide security in respect of loans;
- g) to approve financial statements and the Board's report;
- h) to diversify the business of the Company;
- i) to approve amalgamation, merger or reconstruction;
- j) to take over a company or acquire a controlling or substantial stake in another company;
- k) fees/ compensation payable to non-executive directors including independent directors of the Company; and
- any other matter which may be prescribed under the Companies (Meetings of Board and its Powers) Rules, 2014 and the SEBI Listing Regulations.

The Board may, by a resolution passed at a meeting, delegate to any Committee of Directors, the Managing Director, or to any person permitted by Law the powers specified in sub clauses (d) to (f) above.

The aforesaid powers shall be exercised in accordance with the provisions of the Companies (Meetings of Board and its Powers) Rules, 2014 and shall be subject to the provisions of section 180 of the Companies Act, 2013, as amended.

In terms of Section 180 of the Companies Act, 2013, as amended, the Board may exercise the following powers subject to receipt of consent by the Company by way of a Special Resolution:

- a) to sell, lease or otherwise dispose of the whole or substantial part of the undertaking of the Company;
- b) to borrow money; and
- c) any such other matter as may be prescribed under the Act, the SEBI Listing Regulations and other applicable provisions of Law.

66. PROCEEDINGS OF MEETINGS OF THE BOARD OF DIRECTORS

- a) Board Meetings shall be held at least once in every 3 (three) month period and there shall be at least 4 (four) Board Meetings in any calendar year and there should not be a gap of more than 120 (one hundred twenty) days between two consecutive Board Meetings. Meetings shall be held at the Registered Office, or such a place as may be decided by the Board.
- b) The participation of Directors in a meeting of the Board may be either in person or through video conferencing or other audio visual means, as may be prescribed, which are capable of recording and recognizing the participation of the Directors and of recording and storing the proceedings of such meetings along with date and time. Any meeting of the Board held through video conferencing or other audio visual means shall only be held in accordance with the Companies (Meetings of Board and its Powers) Rules, 2014.
- c) The Company Secretary or any other Director shall, as and when directed by the Chairman or a Director convene a meeting of the Board by giving a notice in writing to every Director in accordance with the provisions of the Act and the Companies (Meetings of Board and its Powers) Rules, 2014.
- d) The Board may meet either at the Office of the Company, or at any other location in India or outside India as the Chairman or Director may determine.
- e) At least 7 (seven) days' notice of every meeting of the Board shall be given in writing to every Director for the time being at his address registered with the Company and such notice shall be sent by hand delivery or by post or by electronic means. A meeting of the Board may be convened in accordance with these Articles by a shorter notice in case of any emergency as directed by the Chairman or the Managing Director or the Executive Director, as the case may be, subject to the presence of 1 (one) Independent Director in the said meeting. If an Independent Director is not present in the said meeting, then decisions taken at the said meeting shall be circulated to all the Directors and shall



be final only upon ratification by one independent Director. Such notice or shorter notice may be sent by post or by fax or e-mail depending upon the circumstances.

f) At any Board Meeting, each Director may exercise 1 (one) vote. The adoption of any resolution of the Board shall require the affirmative vote of a majority of the Directors present at a duly constituted Board Meeting.

67. QUORUM FOR BOARD MEETING

a) Quorum for Board Meetings

Subject to the provisions of Section 174 of the Companies Act, 2013, as amended, the quorum for each Board Meeting shall be one-third of its total strength and the presence of Directors by video conferencing or by other audio visual means shall also be counted for the purposes of calculating quorum.

If any duly convened Board Meeting cannot be held for want of a quorum, then such a meeting shall automatically stand adjourned for 7 (seven) days after the original meeting at the same time and place, or if that day is a national holiday, on the succeeding day which is not a public holiday to the same time and place. Provided however, the adjourned meeting may be held on such other date and such other place as may be unanimously agreed to by all the Directors in accordance with the provisions of the Act.

b) If in the event of a quorum once again not being available at such an adjourned meeting, the Directors present shall constitute the quorum and may transact business for which the meeting has been called.

68. QUESTIONS AT THE BOARD MEETINGS HOW DECIDED

- a) Questions arising at any meeting of the Board, other than as specified in these Articles and the Act, if any, shall be decided by a majority vote. In the case of an equality of votes, the Chairman shall have a second or casting vote.
- b) No regulation made by the Company in General Meeting, shall invalidate any prior act of the Board, which would have been valid if that regulation had not been made.

69. ELECTION OF CHAIRMAN OF BOARD

- a) The Board may elect a chairman of its meeting and determine the period for which he is to hold office.
- b) If no such chairman is elected, or at any meeting the chairman is not present within five minutes after the time appointed for holding the meeting the Directors present may choose one among themselves to be the chairman of the meeting.

70. POWERS OF THE BOARD

Subject to the applicable provisions of the Act, these Articles and other applicable provisions of Law: -

- a) The Board shall be entitled to exercise all such power and to do all such acts and things as the Company is authorised to exercise and do under the applicable provisions of the Act or by the memorandum and articles of association of the Company.
- b) The Board is vested with the entire management and control of the Company, including as regards any and all decisions and resolutions to be passed, for and on behalf of the Company.
- c) Provided that the Board shall not, except with the consent of the Company by a Special Resolution:-
- i. Sell, lease or otherwise dispose of the whole, or substantially the whole, of the undertaking of the Company, or where the Company owns more than one undertaking, of the whole, or substantially the whole, of any such undertaking. The term 'undertaking' and the expression 'substantially the whole of the undertaking' shall have the meaning ascribed to them under the provisions of Section 180 of the Companies Act, 2013, as amended;
- ii. Remit, or give time for repayment of, any debt due by a Director;
- iii. Invest otherwise than in trust securities the amount of compensation received by the Company as a result of any merger or amalgamation; and



iv. Borrow money(ies) where the money(ies) to be borrowed together with the money(ies) already borrowed by the Company (apart from temporary loans obtained from the Company's bankers in the ordinary course of businesses), will exceed the aggregate of the paid-up capital of the Company and its free reserves.

71. COMMITTEES AND DELEGATION BY THE BOARD

- a) The Company shall constitute such Committees as may be required under the Act, applicable provisions of Law and the SEBI Listing Regulations. Without prejudice to the powers conferred by the other Articles and so as not to in any way to limit or restrict those powers, the Board may, subject to the provisions of Section 179 of the Companies Act, 2013, as amended, delegate any of its powers to the Managing Director(s), the executive director(s) or manager or the chief executive officer of the Company. The Managing Director(s), the executive director(s) or the manager or the chief executive officer(s) as aforesaid shall, in the exercise of the powers so delegated, conform to any regulations that may from time to time be imposed on them by the Board and all acts done by them in exercise of the powers so delegated and in conformity with such regulations shall have the like force and effect as if done by the Board.
- b) Subject to the applicable provisions of the Act, the requirements of Law and these Articles, the Board may delegate any of its powers to Committees of the Board consisting of such member or members of the Board as it thinks fit, and it may from time to time revoke and discharge any such committee of the Board either wholly or in part and either as to persons or purposes. Every Committee of the Board so formed shall, in the exercise of the powers so delegated, conform to any regulations that may from time to time be imposed on it by the Board. All acts done by any such Committee of the Board in conformity with such regulations and in fulfillment of the purposes of their appointment but not otherwise, shall have the like force and effect as if done by the Board.
- c) The meetings and proceedings of any such Committee of the Board consisting of two or more members shall be governed by the provisions herein contained for regulating the meetings and proceedings of the Directors, so far as the same are applicable thereto and are not superseded by any regulation made by the Directors under the last preceding Article.
- d) The Board of the Company shall in accordance with the provisions of the Companies (Meetings of the Board and its Powers) Rules, 2014 or any other Law and the provisions of the SEBI Listing Regulations, form such committees as may be required under such rules in the manner specified therein, if the same are applicable to the Company.

72. ACTS OF BOARD OR COMMITTEE VALID NOTWITHSTANDING INFORMAL APPOINTMENT

All acts undertaken at any meeting of the Board or of a Committee of the Board, or by any person acting as a Director shall, notwithstanding that it may afterwards be discovered that there was some defect in the appointment of such Director or persons acting as aforesaid, or that they or any of them were disqualified or had vacated office or that the appointment of any of them had been terminated by virtue of any provisions contained in the Act or in these Articles, be as valid as if every such person had been duly appointed, and was qualified to be a Director . Provided that nothing in this Article shall be deemed to give validity to the acts undertaken by a Director after his appointment has been shown to the Company to be invalid or to have been terminated.

73. PASSING OF RESOLUTION BY CIRCULATION

No resolution shall be deemed to have been duly passed by the Board or by a Committee thereof by circulation, unless the resolution has been circulated in draft form, together with the necessary papers, if any, to all the Directors, or members of the Committee, as the case may be, at their addresses registered with the Company in India by hand delivery or by post or by courier, or through such electronic means as may be provided under the Companies (Meetings of Board and its Powers) Rules, 2014 and has been approved by majority of Directors or members, who are entitled to vote on the resolution. However, in case one-third of the total number of Directors for the time being require that any resolution under circulation must be decided at a meeting, the chairperson shall put the resolution to be decided at a meeting of the Board.

A resolution mentioned above shall be noted at a subsequent meeting of the Board or the Committee thereof, as the case may be, and made part of the minutes of such meeting.

74. MINUTES OF THE PROCEEDINGS OF THE MEETING OF THE BOARD

a) The Company shall prepare minutes of each Board Meeting and the entries thereof in books kept for that purpose with their pages consecutively numbered. Such minutes shall contain a fair and correct summary of the proceedings conducted at the Board Meeting.



- b) The Company shall circulate the minutes of the meeting to each Director within 7 (seven) Business Days after the Board Meeting.
- c) Each page of every such book shall be initialed or signed and the last page of the record of proceedings of each meeting in such book shall be dated and signed by the Chairman of the said meeting or the Chairman of the next succeeding meeting.
- d) In no case the minutes of proceedings of a meeting shall be attached to any such book as aforesaid by pasting or otherwise.
- e) The minutes of each meeting shall contain a fair and correct summary of the proceedings thereat and shall also contain:
- i. all appointments of Officers;
- ii. the names of the Directors present at each meeting of the Board;
- iii. all resolutions and proceedings of the meetings of the Board;
- iv. the names of the Directors, if any, dissenting from, or not concurring in, any resolution passed by the Board.
 - f) Nothing contained in sub Articles (a) to (e) above shall be deemed to require the inclusion in any such minutes of any matter which in the opinion of the Chairman of the meeting: -
- i. is or could reasonably be regarded as defamatory of any person;
- ii. is irrelevant or immaterial to the proceedings; or
- iii. is detrimental to the interests of the Company.
 - g) The Chairman shall exercise absolute discretion in regard to the inclusion or non- inclusion of any matter in the minutes on the ground specified in sub Article (f) above.
 - h) Minutes of meetings kept in accordance with the aforesaid provisions shall be evidence of the proceedings recorded therein.
 - i) The minutes kept and recorded under this Article shall also comply with the provisions of Secretarial Standard 3 issued by the Institute of Company Secretaries of India constituted under the Company Secretaries Act, 1980 and approved as such by the Central Government and applicable provisions of the Act and Law.

75. REGISTER OF CHARGES

The Directors shall cause a proper register to be kept, in accordance with the applicable provisions of the Act, of all mortgages and charges specifically affecting the property of the Company and shall duly comply with the requirements of the applicable provisions of the Act in regard to the registration of mortgages and charges therein specified.

76. CHARGE OF UNCALLED CAPITAL

Where any uncalled capital of the Company is charged as security or other security is created on such uncalled capital, the Directors may authorize, subject to the applicable provisions of the Act and these Articles, making calls on the Shareholders in respect of such uncalled capital in trust for the person in whose favour such charge is executed.

77. SUBSEQUENT ASSIGNS OF UNCALLED CAPITAL

Where any uncalled capital of the Company is charged, all persons taking any subsequent charge thereon shall take the same subject to such prior charges and shall not be entitled to obtain priority over such prior charge.

78. CHARGE IN FAVOUR OF DIRECTOR FOR INDEMNITY

If the Director or any person, shall become personally liable for the payment of any sum primarily due from the Company, the Board may execute or cause to be executed, any mortgage, charge or security over or affecting the whole or part of the



assets of the Company by way of indemnity to secure the Directors or other persons so becoming liable as aforesaid from any loss in respect of such liability.

79. OFFICERS

- a) The Company shall have its own professional management and such officers shall be appointed from time to time as designated by its Board. The officers of the Company shall serve at the discretion of the Board.
- b) The officers of the Company shall be responsible for the implementation of the decisions of the Board, subject to the authority and directions of the Board and shall conduct the day to day business of the Company.
- c) The officers of the Company shall be the Persons in charge of and responsible to the Company for the conduct of the business of the Company and shall be concerned and responsible to ensure full and due compliance with all statutory laws, rules and regulations as are required to be complied with by the Company and/or by the Board of the Company.
- d) Qualified experienced managerial and marketing executives and other officers shall be appointed for the operation and conduct of the business of the Company.
- e) The Board shall appoint with the approval of the Chairman, the President and/or Chief Operating Officer of the Company, as well as persons who will be appointed to the posts of senior executive management.

80. THE SECRETARY

- a) Subject to the provisions of Section 203 of the Companies Act, 2013, as amended, the Board may, from time to time, appoint any individual as Secretary of the Company to perform such functions, which by the Act or these Articles for the time being of the Company are to be performed by the Secretary and to execute any other duties which may from time to time be assigned to him by the Board. The Board may confer upon the Secretary so appointed any powers and duties as are not by the Act or by these Articles required to be exercised by the Board and may from time to time revoke, withdraw, alter or vary all or any of them. The Board may also at any time appoint some individual (who need not be the Secretary), to maintain the Registers required to be kept by the Company.
- b) The Secretary shall be an individual responsible to ensure that there shall be no default, non-compliance, failure, refusal or contravention of any of the applicable provisions of the Act, or any rules, regulations or directions which the Company is required to conform to or which the Board of the Company are required to conform to and shall be designated as such and be the officer in default.

81. DIRECTORS' & OFFICERS' LIABILITY INSURANCE

Subject to the provisions of the Act and Law, the Company shall procure, at its own cost, comprehensive directors and officers liability insurance for each Director which shall not form a part of the remuneration payable to the Directors in the circumstances described under Section 197 of the Companies Act, 2013, as amended: -

- a) on terms approved by the Board;
- b) which includes each Director as a policyholder;
- c) is from an internationally recognised insurer approved by the Board; and
- d) for a coverage for claims of an amount as may be decided by the Board, from time to time.

82. SEAL

- a) The Company may have a Common Seal for the purposes of the Company, and shall have power from time to time to destroy the same and substitute a new Seal in lieu thereof, and the Board shall provide for the safe custody of the Seal for the time being, and the Seal shall never be used except by the authority of the Board or a Committee of the Board, previously given.
- b) The Company shall also be at liberty to have an official Seal(s) in accordance with Section 50 of the Companies Act, 1956, for use in any territory, district or place outside India.



c) Every deed or other instrument to which the Seal of the Company is required to be affixed shall unless the same is executed by a duly constituted attorney, be signed by any one of the Directors or the Secretary of the Company under an authority of a resolution.

83. ACCOUNTS

- a) The Company shall prepare and keep at the Office books of accounts or other relevant books and papers and financial statements for every financial year which give a true and fair view of the state of affairs of the Company, including its branch office or offices, if any, and explain the transactions effected both at the Office and its branches and such books shall be kept on accrual basis and according to the double entry system of accounting.
- b) Where the Board decides to keep all or any of the books of account at any place other than the Office, the Company shall, within 7 (seven) days of the decision, file with the Registrar, a notice in writing giving the full address of that other place. The Company may also keep such books of accounts or other relevant papers in electronic mode in accordance with the provisions of the Act.
- c) The Company shall preserve in good order the books of account relating to a period of not less than eight years preceding the current year.
- d) When the Company has a branch office, whether in or outside India, the Company shall be deemed to have complied with this Article if proper books of account relating to the transactions effected at the branch office are kept at the branch office and proper summarized returns made up to dates at intervals of not more than three months, are sent by the branch office to the Company at its office or at the other place in India, at which the Company's books of account are kept as aforesaid.
- e) No Shareholder (not being a Director) shall have any right of inspecting any account or books or documents of the Company except specified under the Act and Law.
- f) In accordance with the provisions of the Act, along with the financial statements laid before the Shareholders, there shall be laid a 'Board's report' which shall include:
- i. the extract of the annual return as provided under sub-section (3) of Section 92 of the Companies Act, 2013, as amended;
- ii. number of meetings of the Board;
- iii. Directors' responsibility statement as per the provisions of Section 134 (5) of the Companies Act, 2013, as amended;
- iv. a statement on declaration given by Independent Directors under sub-section (6) of Section 149 of the Companies Act, 2013, as amended;
- v. in the event applicable, as specified under sub-section (1) of Section 178 of the Companies Act, 2013, as amended, Company's policy on directors' appointment and remuneration including criteria for determining qualifications, positive attributes, independence of a director and other matters provided under sub-section (3) of Section 178 of the Companies Act, 2013, as amended;
- vi. explanations or comments by the Board on every qualification, reservation or adverse remark or disclaimer made-
 - 1. by the auditor in his report; and
 - 2. by the company secretary in practice in his secretarial audit report;
- vii. particulars of loans, guarantees or investments under Section 186 of the Companies Act, 2013, as amended;
- viii. particulars of contracts or arrangements with related parties referred to in sub- section (1) of Section 188 in the prescribed form;
- ix. the state of the Company's affairs;
- x. the amounts, if any, which it proposes to carry to any reserves;
- xi. the amount, if any, which it recommends should be paid by way of Dividends;



- xii. material changes and commitments, if any, affecting the financial position of the Company which have occurred between the end of the financial year of the Company to which the financial statements relate and the date of the report;
- xiii. the conservation of energy, technology absorption, foreign exchange earnings and outgo, in such manner as may be prescribed;
- xiv. a statement indicating development and implementation of a risk management policy for the Company including identification therein of elements of risk, if any, which in the opinion of the Board may threaten the existence of the Company;
- xv. the details about the policy developed and implemented by the Company on corporate social responsibility initiatives taken during the year;
- xvi. in case of a listed company and every other public company having such paid-up share capital as may be prescribed, a statement indicating the manner in which formal annual evaluation has been made by the Board of its own performance and that of its committees and individual directors; and
- xvii. such other matters as may be prescribed under the Law, from time to time.
 - g) All the aforesaid books shall give a fair and true view of the affairs of the Company or its branch office, as the case may be, with respect to the matters herein and explain its transactions.

84. AUDIT AND AUDITORS

- a) Auditors shall be appointed and their rights and duties shall be regulated in accordance with Sections 139 to 147 of the Companies Act, 2013, as amended and as specified under Law.
- b) Every account of the Company when audited shall be approved by a General Meeting and shall be conclusive except as regards any error discovered therein within three months next after the approval thereof. Whenever any such error is discovered within that period the account shall forthwith be corrected, and henceforth shall be conclusive.
- Every balance sheet and profit and loss account shall be audited by one or more Auditors to be appointed as hereinafter set out.
- d) The Company at the Annual General Meeting in each year shall appoint an Auditor or Auditors to hold office from the conclusion of that meeting until conclusion of the next Annual General Meeting and every Auditor so appointed shall be intimated of his appointment within 7 (seven) days.
- e) Where at an Annual General Meeting, no Auditors are appointed, the Central Government may appoint a person to fill the vacancy and fix the remuneration to be paid to him by the Company for his services.
- f) The Company shall within 7 (seven) days of the Central Government's power under sub clause (b) becoming exercisable, give notice of that fact to the Government.
- g) The Directors may fill any casual vacancy in the office of an Auditor but while any such vacancy continues, the remaining auditors (if any) may act. Where such a vacancy is caused by the resignation of an Auditor, the vacancy shall only be filled by the Company in General Meeting.
- h) A person, other than a retiring Auditor, shall not be capable of being appointed at an Annual General Meeting unless special notice of a resolution of appointment of that person to the office of Auditor has been given by a Shareholder to the Company not less than 14 (fourteen) days before the meeting in accordance with Section 115 of the Companies Act, 2013, as amended, and the Company shall send a copy of any such notice to the retiring Auditor and shall give notice thereof to the Shareholders in accordance with provisions of Section 115 of the Companies Act, 2013, as amended and all the other provision of Section 140 of the Companies Act, 2013, as amended shall apply in the matter. The provisions of this sub-clause shall also apply to a resolution that a retiring auditor shall not be re-appointed.
- i) The persons qualified for appointment as Auditors shall be only those referred to in Section 141 of the Companies Act, 2013, as amended.



j) None of the persons mentioned in Section 141 of the Companies Act, 2013, as amended as are not qualified for appointment as auditors shall be appointed as Auditors of the Company.

85. AUDIT OF BRANCH OFFICES

The Company shall comply with the applicable provisions of the Act and the Companies (Audit and Auditor) Rules, 2014 in relation to the audit of the accounts of branch offices of the Company.

86. REMUNERATION OF AUDITORS

The remuneration of the Auditors shall be fixed by the Company as authorized in General Meeting from time to time in accordance with the provisions of the Act and the Companies (Audit and Auditor) Rules, 2014.

87. DOCUMENTS AND NOTICES

- a) A document or notice may be given or served by the Company to or on any Shareholder whether having his registered address within or outside India either personally or by sending it by post to him to his registered address.
- b) Where a document or notice is sent by post, service of the document or notice shall be deemed to be effected by properly addressing, prepaying and posting a letter containing the document or notice, provided that where a Shareholder has intimated to the Company in advance that documents or notices should be sent to him under a certificate of posting or by registered post with or without acknowledgement due or by cable or telegram and has deposited with the Company a sum sufficient to defray the expenses of doing so, service of the document or notice shall be deemed to be effected unless it is sent in the manner intimated by the Shareholder. Such service shall be deemed to have effected in the case of a notice of a meeting, at the expiration of forty eight hours after the letter containing the document or notice is posted or after a telegram has been dispatched and in any case, at the time at which the letter would be delivered in the ordinary course of post or the cable or telegram would be transmitted in the ordinary course.
- c) A document or notice may be given or served by the Company to or on the joint-holders of a Share by giving or serving the document or notice to or on the joint-holder named first in the Register of Members in respect of the Share.
- d) Every person, who by operation of Law, transfer or other means whatsoever, shall become entitled to any Share, shall be bound by every document or notice in respect of such Share, which previous to his name and address being entered on the register of Shareholders, shall have been duly served on or given to the Person from whom he derives his title to such Share.
- e) Any document or notice to be given or served by the Company may be signed by a Director or the Secretary or some Person duly authorised by the Board for such purpose and the signature thereto may be written, printed, photostat or lithographed.
- f) All documents or notices to be given or served by Shareholders on or to the Company or to any officer thereof shall be served or given by sending the same to the Company or officer at the Office by post under a certificate of posting or by registered post or by leaving it at the Office.
- g) Where a Document is sent by electronic mail, service thereof shall be deemed to be effected properly, where a member has registered his electronic mail address with the Company and has intimated the Company that documents should be sent to his registered email address, without acknowledgement due. Provided that the Company, shall provide each member an opportunity to register his email address and change therein from time to time with the Company or the concerned depository. The Company shall fulfill all conditions required by Law, in this regard.

88. SHAREHOLDERS TO NOTIFY ADDRESS IN INDIA

Each registered Shareholder from time to time notify in writing to the Company such place in India to be registered as his address and such registered place of address shall for all purposes be deemed to be his place of residence.

89. SERVICE ON MEMBERS HAVING NO REGISTERED ADDRESS

If a Shareholder does not have registered address in India, and has not supplied to the Company any address within India, for the giving of the notices to him, a document advertised in a newspaper circulating in the neighbourhood of Office of the Company shall be deemed to be duly served to him on the day on which the advertisement appears.



90. SERVICE ON PERSONS ACQUIRING SHARES ON DEATH OR INSOLVENCY OF SHAREHOLDERS

A document may be served by the Company on the persons entitled to a share in consequence of the death or insolvency of a Shareholders by sending it through the post in a prepaid letter addressed to them by name or by the title or representatives of the deceased, assignees of the insolvent by any like description at the address (if any) in India supplied for the purpose by the persons claiming to be so entitled, or (until such an address has been so supplied) by serving the document in any manner in which the same might have been served as if the death or insolvency had not occurred.

91. PERSONS ENTITLED TO NOTICE OF GENERAL MEETINGS

Subject to the applicable provisions of the Act and these Articles, notice of General Meeting shall be given:

- i. To the Shareholders of the Company as provided by these Articles.
- ii. To the persons entitled to a share in consequence of the death or insolvency of a Shareholder.
- iii. To the Auditors for the time being of the Company; in the manner authorized by as in the case of any Shareholder of the Company.

92. NOTICE BY ADVERTISEMENT

Subject to the applicable provisions of the Act, any document required to be served or sent by the Company on or to the Shareholders, or any of them and not expressly provided for by these Articles, shall be deemed to be duly served or sent if advertised in a newspaper circulating in the District in which the Office is situated.

93. DIVIDEND POLICY

- a) The profits of the Company, subject to any special rights relating thereto being created or authorised to be created by the Memorandum or these Articles and subject to the provisions of these Articles shall be divisible among the Shareholders in proportion to the amount of Capital Paid-up or credited as Paid-up and to the period during the year for which the Capital is Paid-up on the shares held by them respectively. Provided always that, (subject as aforesaid), any Capital Paid-up on a Share during the period in respect of which a Dividend is declared, shall unless the Directors otherwise determine, only entitle the holder of such Share to an apportioned amount of such Dividend as from the date of payment.
- b) Subject to the provisions of Section 123 of the Companies Act, 2013, as amended the Company in General Meeting may declare Dividends, to be paid to Shareholders according to their respective rights and interests in the profits. No Dividends shall exceed the amount recommended by the Board, but the Company in General Meeting may, declare a smaller Dividend, and may fix the time for payments not exceeding 30 (thirty) days from the declaration thereof.
- c) (i) No Dividend shall be declared or paid otherwise than out of profits of the Financial Year arrived at after providing for depreciation in accordance with the provisions of Section 123 of the Companies Act, 2013, as amended or out of the profits of the Company for any previous Financial Year or years arrived at after providing for depreciation in accordance with those provisions and remaining undistributed or out of both provided that: -
- 1. if the Company has not provided for depreciation for any previous Financial Year or years it shall, before declaring or paying a Dividend for any Financial Year provide for such depreciation out of the profits of that Financial Year or out of the profits of any other previous Financial Year or years, and
- 2. if the Company has incurred any loss in any previous Financial Year or years the amount of the loss or an amount which is equal to the amount provided for depreciation for that year or those years whichever is less, shall be set off against the profits of the Company for the year for which the Dividend is proposed to be declared or paid or against the profits of the Company for any previous Financial Year or years arrived at in both cases after providing for depreciation in accordance with the provisions of Section 123 of the Companies Act, 2013, as amended or against both.
- (ii) The declaration of the Board as to the amount of the net profits shall be conclusive.
- d) The Board may, from time to time, pay to the Shareholders such interim Dividend as in their judgment the position of the Company justifies.



- e) Where Capital is paid in advance of calls upon the footing that the same shall carry interest, such Capital shall not whilst carrying interest, confer a right to participate in profits or Dividend.
- f) (i) Subject to the rights of Persons, if any, entitled to shares with special rights as to Dividend, all Dividends shall be declared and paid according to the amounts paid or credited as paid on the shares in respect whereof Dividend is paid but if and so long as nothing is Paid upon any shares in the Company, Dividends may be declared and paid according to the amount of the shares.
- (ii) No amount paid or credited as paid on shares in advance of calls shall be treated for the purpose of this regulation as paid on shares.
- (iii) All Dividends shall be apportioned and paid proportionately to the amounts paid or credited as paid on the shares during any portion or portions of the period in respect of which the Dividend is paid, but if any shares are issued on terms providing that it shall rank for Dividend as from a particular date such shares shall rank for Dividend accordingly.
- g) Subject to the applicable provisions of the Act and these Articles, the Board may retain the Dividends payable upon shares in respect of any Person, until such Person shall have become a Shareholder, in respect of such shares or until such shares shall have been duly transferred to him.
- h) Any one of several Persons who are registered as the joint-holders of any Share may give effectual receipts for all Dividends or bonus and payments on account of Dividends or bonus or sale proceeds of fractional certificates or other money(ies) payable in respect of such shares.
- i) Subject to the applicable provisions of the Act, no Shareholder shall be entitled to receive payment of any interest or Dividends in respect of his Share(s), whilst any money may be due or owing from him to the Company in respect of such Share(s); either alone or jointly with any other Person or Persons; and the Board may deduct from the interest or Dividend payable to any such Shareholder all sums of money so due from him to the Company.
- j) Subject to Section 126 of the Companies Act, 2013, as amended, a transfer of shares shall not pass the right to any Dividend declared thereon before the registration of the transfer.
- k) Unless otherwise directed any Dividend may be paid by cheque or warrant or by a pay slip or receipt (having the force of a cheque or warrant) and sent by post or courier or by any other legally permissible means to the registered address of the Shareholder or Person entitled or in case of joint-holders to that one of them first named in the Register of Members in respect of the joint-holding. Every such cheque or warrant shall be made payable to the order of the Person to whom it is sent and in case of joint-holders to that one of them first named in the Register of Members in respect of the joint-holding. The Company shall not be liable or responsible for any cheque or warrant or pay slip or receipt lost in transmission, or for any Dividend lost to a Shareholder or Person entitled thereto, by a forged endorsement of any cheque or warrant or a forged signature on any pay slip or receipt of a fraudulent recovery of Dividend. If 2 (two) or more Persons are registered as joint-holders of any Share(s) any one of them can give effectual receipts for any money(ies) payable in respect thereof. Several Executors or Administrators of a deceased Shareholder in whose sole name any Share stands shall for the purposes of this Article be deemed to be joint-holders thereof.
- 1) No unpaid Dividend shall bear interest as against the Company.
- m) Any General Meeting declaring a Dividend may on the recommendation of the Board, make a call on the Shareholders of such amount as the Meeting fixes, but so that the call on each Shareholder shall not exceed the Dividend payable to him, and so that the call will be made payable at the same time as the Dividend; and the Dividend may, if so, arranged as between the Company and the Shareholders, be set-off against such calls.
- n) Notwithstanding anything contained in this Article, the dividend policy of the Company shall be governed by the applicable provisions of the Act and Law.
- o) The Company may pay dividends on shares in proportion to the amount paid-up on each Share in accordance with Section 51 of the Companies Act, 2013, as amended.

94. UNPAID OR UNCLAIMED DIVIDEND

a) If the Company has declared a Dividend but which has not been paid or claimed within 30 (thirty) days from the date of declaration, the Company shall, within 7 (seven) days from the date of expiry of the said period of 30 (thirty) days, transfer the total amount of dividend, which remained so unpaid or unclaimed to a special account to be opened by the Company in that behalf in any scheduled bank to be called "Unpaid Dividend Account".



- b) Any money so transferred to the unpaid dividend account of the Company which remains unpaid or unclaimed for a period of 7 (seven) years from the date of such transfer, shall be transferred by the Company to the Fund established under sub-section (1) of Section 125 of the Companies Act, 2013, as amended, viz. "Investor Education and Protection Fund".
- c) Unless otherwise required for compliance with the provisions of the applicable laws, no unclaimed or unpaid dividend shall be forfeited by the Board, no unpaid or unclaimed Dividend shall be forfeited by the Board before the claim becomes barred by Law.

95. CAPITALIZATION OF PROFITS

The Company in General Meeting may, upon the recommendation of the Board, resolve:

- that it is desirable to capitalize any part of the amount for the time being standing to the credit of any of the Company's reserve accounts or to the credit of the Company's profit and loss account or otherwise, as available for distribution,
- b) that such sum be accordingly set free from distribution in the manner specified herein below in sub-article (iii) as amongst the Shareholders who would have been entitled thereto, if distributed by way of Dividends and in the same proportions.
- c) The sum aforesaid shall not be paid in cash but shall be applied either in or towards:
- i. paying up any amounts for the time being unpaid on any shares held by such Shareholders respectively;
- ii. paying up in full, un-issued shares of the Company to be allotted, distributed and credited as fully Paid up, to and amongst such Shareholders in the proportions aforesaid; or
- iii. partly in the way specified in sub-article (i) and partly in the way specified in sub-article (ii).
 - d) A share premium account may be applied as per Section 52 of the Companies Act, 2013, as amended, and a capital redemption reserve account may, duly be applied in paying up of unissued shares to be issued to Shareholders of the Company as fully paid bonus shares.

96. RESOLUTION FOR CAPITALISATION OF RESERVES AND ISSUE OF FRACTIONAL CERTIFICATE

- a) The Board shall give effect to a Resolution passed by the Company in pursuance of this regulation.
- b) Whenever such a Resolution as aforesaid shall have been passed, the Board shall:
- i. make all appropriation and applications of undivided profits (resolved to be capitalized thereby), and all allotments and issues of fully paid shares or Securities, if any; and
- ii. generally do all acts and things required to give effect thereto.
 - c) The Board shall have full power:
- i. to make such provisions, by the issue of fractional certificates or by payments in cash or otherwise as it thinks fit, in the case of shares or debentures becoming distributable in fraction; and
- ii. to authorize any person, on behalf of all the Shareholders entitled thereto, to enter into an agreement with the Company providing for the allotment to such Shareholders, credited as fully paid up, of any further shares or debentures to which they may be entitled upon such capitalization or (as the case may require) for the payment of by the Company on their behalf, by the application thereto of their respective proportions of the profits resolved to be capitalised of the amounts or any parts of the amounts remaining unpaid on the shares.
 - d) Any agreement made under such authority shall be effective and binding on all such shareholders.

97. DISTRIBUTION OF ASSETS IN SPECIE OR KIND UPON WINDING UP



- a) If the Company shall be wound up, the Liquidator may, with the sanction of a special Resolution of the Company and any other sanction required by the Act divide amongst the shareholders, in specie or kind the whole or any part of the assets of the Company, whether they shall consist of property of the same kind or not.
- b) For the purpose aforesaid, the Liquidator may set such value as he deems fair upon any property to be divided as aforesaid and may determine how such division shall be carried out as between the shareholders or different classes of shareholders.

98. DIRECTOR'S AND OTHER'S RIGHTS TO INDEMNITY

Subject to the provisions of Section 197 of the Companies Act, 2013, as amended, every Director, Manager and other officer or employee of the Company shall be indemnified by the Company against any liability incurred by him and it shall be the duty of the Directors to pay out the funds of the Company all costs, losses and expenses which any director, Manager, officer or employee may incur or become liable to by reason of any contact entered into by him on behalf of the Company or in any way in the discharge of his duties and in particular, and so as not to limit the generality of the foregoing provisions against all liabilities incurred by him as such Director, Manager, Officer or employee in defending any proceedings Whether civil or criminal in which judgement is given in his favour or he is acquitted or in connection with any application under Section 463 of the Companies Act, 2013, as amended in which relief is granted by the court and the amount for which such indemnity is provided shall immediately attach as a lien on the property of the Company and have priority as between the shareholders over all the claims.

99. DIRECTOR'S ETC. NOT LIABLE FOR CERTAIN ACTS

Subject to the provision of Section 197 of the Companies Act, 2013, as amended, no Director, Manager, Officer or Employee of the Company shall be liable for the acts, defaults, receipts and neglects of any other Director, Manager, Officer or employee or for joining in any receipts or other acts for the sake of conformity or for any loss or expenses happening to the Company through the insufficiency or deficiency of any security in or upon which any of the monies of the Company shall be invested or for any loss or damage arising from the bankruptcy, insolvency or tortuous act of any person with whom any monies, securities or effects shall be deposited or for any loss occasioned by an error of judgement or oversight on his part, or for any other loss, damage or misfortune whatsoever which shall happen in the execution thereof unless the same shall happen through negligence, default, misfeasance, breach of duty or breach of trust. Without prejudice to the generality foregoing it is hereby expressly declared that any filing fee payable or any document required to be filed with the registrar of the companies in respect of any act done or required to be done by any Director or other officer by reason of his holding the said office shall be paid and borne by the Company.

100. INSPECTION BY SHAREHOLDERS

The register of charges, register of investments, register of shareholders, books of accounts and the minutes of the meeting of the board and shareholders shall be kept at the office of the Company and shall be open, during business hours, for such periods not being less in the aggregate than two hours in each day as the board determines for inspection of any shareholder without charge. In the event such shareholder conducting inspection of the abovementioned documents requires extracts of the same, the Company may charge a fee which shall not exceed Rupees ten per page or such other limit as may be prescribed under the Act or other applicable provisions of law.

101. AMENDMENT TO MEMORANDUM AND ARTICLES OF ASSOCIATION

- a) The shareholders shall vote for all the equity shares owned or held on record by such shareholders at any annual or extraordinary General meeting of the Company in accordance with these Articles.
- b) The shareholders shall not pass any resolution or take any decision which is contrary to any of the terms of these Articles.
- c) The Articles of the Company shall not be amended unless (i) Shareholders holding not less than 75% of the Equity shares (and who are entitled to attend and vote) cast votes in favour of each such amendment/s to the Articles.

102. SECRECY

No shareholder shall be entitled to inspect the Company's work without permission of the managing Director/Directors or to require discovery of any information respectively any details of Company's trading or any matter which is or may be in the nature of a trade secret, history of trade or secret process which may be related to the conduct of the business of the Company and which in the opinion of the managing Director/Directors will be inexpedient in the interest of the shareholders of the Company to communicate to the public.



103. DUTIES OF THE OFFICER TO OBSERVE SECRECY

Every Director, managing Directors, manager, Secretary, Auditor, Trustee, members of the committee, officer, servant, agent, accountant or other persons employed in the business of the Company shall, if so required by the Director before entering upon his duties, or any time during his term of office, sign a declaration pledging himself to observe secrecy relating to all transactions of the Company and the state of accounts and in matters relating thereto and shall by such declaration pledge himself not to reveal any of such matters which may come to his knowledge in the discharge of his official duties except which are required so to do by the Directors or the Auditors, or by resolution of the Company in the general meeting or by a court of law and except so far as may be necessary in order to comply with any of the provision of these Articles or Law. Nothing herein contained shall affect the powers of the Central Government or any officer appointed by the government to require or to hold an investigation into the Company's affair



SECTION XIII: OTHER INFORMATION

MATERIAL CONTRACTS AND DOCUMENTS FOR INSPECTION

The following contracts (not being contracts entered into in the ordinary course of business carried on by our Company or contracts entered into more than two (2) years before the date of filing of the Draft Prospectus) which are or may be deemed material have been entered or are to be entered into by our Company. These contracts, copies of which will be attached to the copy of the Prospectus will be delivered to the ROC for filing and also the documents for inspection referred to hereunder, may be inspected at the Registered Office of our Company located at Ashuti Khanberia Maheshtala LP 20/83/46, Kolkata, Vivekanandapur, South 24 Parganas, Thakurpukur Mahestola, West Bengal, India, 700141 from date of filing the Draft Prospectus with ROC to Issue Closing Date on working days from 10:00 a.m. to 5:00 p.m.

A. MATERIAL CONTRACTS

- 1. Issuer Agreement dated December 23,2023 between our Company and the Lead Manager.
- 2. Registrar to the Issue Agreement dated December 23, 2023 between our Company and the Registrar to the Issue.
- 3. Underwriting Agreement dated December 23, 2023 between our Company, the Lead Manager and Underwriters.
- 4. Market Making Agreement dated December 23, 2023 between our Company, Lead Manager and Market Maker.
- 5. Bankers to the Issue Agreement dated [●] between our Company, the Lead Manager, Banker to the Issue / Sponsor Bank and Registrar to the Issue.
- 6. Tripartite agreement among the National Securities Depository Limited, our Company and the Registrar dated October 11, 2023.
- 7. Tripartite agreement among the Central Depository Services (India) Limited, our Company and the Registrar dated October 11, 2023.

B. MATERIAL DOCUMENTS

- 1. Memorandum and Articles of Association of our Company, as amended from time to time.
- 2. Certificate of Incorporation dated December 22, 2017 issued by Registrar of Companies, Kolkata.
- 3. Resolution of the Board of Directors of our Company, passed at the Meeting of the Board of Directors held on December 13, 2023, in relation to the Issue.
- 4. Resolution of the Shareholders of our Company, passed at the Extra Ordinary General Meeting held on December 18, 2023, relation to the Issue.
- 5. The Statement of Possible Tax Benefits dated December 26, 2023 by the Statutory Auditor included in this Draft Prospectus.
- 6. Statutory Auditor's report for Restated Financials December 26, 2023 included in this Draft Prospectus.
- 7. Consents of the Directors, Promoters, Company Secretary and Compliance Officer, Chief Financial Officer, Statutory Auditor, Lender, Lead Manager to the Issue, Legal Advisor to the Issue, Registrar to the Issue, Banker to the Company, Underwriters to the Issue and Market Maker to the Issue to include their names in the Draft Prospectus to act in their respective capacities.
- 8. Due Diligence Certificate dated [•] addressed to SEBI from Lead Manager.
- 9. Approval from BSE Limited vide letter dated [●] to use the name of BSE in this Offer Document for listing of Equity Shares on SME Platform of BSE Limited.

Any of the contracts or documents mentioned in the Draft Prospectus may be amended or modified at any time if so, required in the interest of our Company or if required by the other parties, with the consent of shareholders subject to compliance of the provisions contained in the Companies Act and other relevant provisions.



DECLARATION

We, hereby declare that, all the relevant provisions of the Companies Act, 2013 (to the extent notified) and the Guidelines issued by the Government of India or the Regulations or Guidelines issued by the Securities and Exchange Board of India, as the case may be, have been complied with and no statement made in the Draft Prospectus is contrary to the provisions of the Companies Act, 2013 (to the extent notified),the Securities and Exchange Board of India Act, 1992, each as Amended or Rules made there under or Guidelines / Regulations issued, as the case may be. We further certify that all the disclosures and statements made in the Draft Prospectus are true and correct.

SIGNED BY ALL THE DIRECTORS OF OUR COMPANY

NAME AND DESIGNATION	SIGNATURE
MR. JAGJIT SINGH DHILLON	Sd/-
Managing Director	
DIN: 07980441	
MR. HARBHAJAN SINGHTHETHI	Sd/-
Chairman & Whole Time Director	
DIN: 10416459	
MRS. NAVNEET KAUR	Sd/-
Non- Exécutive Director	
DIN: 07980468	
MR. JAY KUMAR SHAW	Sd/-
Additional Independent Director	
DIN: 09627535	
MS. CHETNA GUPTA	Sd/-
Additional Independent Director	
DIN: 02212440	

SIGNED BY THE CHIEF FINANCIAL OFFICER AND COMPANY SECRETARY & COMPLIANCE OFFICER OF OUR COMPANY

Sd/- Sd/-

MR. JAGJIT SINGH DHILLON

Chief Financial Officer

PAN: AIZPD9546

Ms. HEENAL HITESH RATHOD

Company Secretary & Compliance Officer

PAN: EVRPR0491A

Place: Kolkata

Date: December 30, 2023



ANNEXURE - A

DISCLOSURE OF PRICE INFORMATION OF PAST ISSUES HANDLED BY GRETEX CORPORATE SERVICES LIMITED

Sr. No.	Issuer Name	Issue Size (Cr)	Issue Price (In ₹)	Listing Date	Openin g Price on Listing Date	+/-% change in closing price, [+/- % change in Closing benchmark] 30th calendar days from listing	+/-% change in closing price, [+/- % change in Closing benchmark] 90th calendar days from listing	+/-% change in closing price, [+/- % change in Closing benchmark] 180th calendar days from listing
1	Reetech International Cargo and Courier Limited	11.71	105.00	October 10, 2022	82.00	-0.78, [5.25]	-7.89, [3.29]	-14.23, [3.18]
2	ResGen Limited	28.20	47.00	March 13, 2023	49.00	18.10, [3.70]	-2.75, [7.53]	67.49, [14.36]
3	Sudarshan Pharma Industries Limited	50.10	73.00	March 22, 2023	73.00	6.50, [2.47]	-1.23, [8.78]	13.21, [16.12]
4	Retina Paints Limited	11.10	30.00	May 3, 2023	29.05	32.82, [2.21]	55.54, [8.61]	96.72, [7.06]
5	Innokaiz India Limited	21.17	78.00	May 11, 2023	148.20	-21.86, [1.16]	-7.08, [6.61]	-22.88, [4.91]
6	Comrade Appliances Limited	12.30	54.00	June 13, 2023	87.00	15.80, [3.83]	80.62, [6.31]	51.89, [10.58]
7	Shelter Pharma Limited	16.03	42.00	August 23, 2023	39.97	4.62, [0.88]	54.72, [0.76]	N.A.
8	Transteel Seating Technologies Limited	49.98	70.00	November 6, 2023	88.90	-0.64, [10.53]	N.A.	N.A.
9	Kalyani Cast- Tech Limited	30.11	139.00	November 17, 2023	264.10	44.32, [8.65]	N.A.	N.A.
10	Amic Forging Limited	34.80	126.00	December 6, 2023	239.40	N.A.	N.A.	N.A.

Sources: All share price data is from www.bseindia.com and www.nseindia.com.

Note:

- a. The BSE SENSEX and NSE NIFTY are considered as the Benchmark Index.
- b. Price on BSE & NSE are considered for all the above calculations.
- c. In case 30th, 90th and 180th day is not a trading day, the price / index of the immediately preceding working day has been considered.
- d. In case 30th, 90th and 180th day, scripts are not traded then the share price is taken of the immediately preceding trading day.

As per SEBI Circular No. CIR/CFD/DIL/7/2015 dated October 30, 2015, the above table should reflect maximum 10 issues (Initial Public Offers) managed by the Lead Manager. Hence, disclosure pertaining to recent 10 issues handled by the Lead Manager are provided.



SUMMARY STATEMENT OF DISCLOSURE

Financial Year	Tota l no. of IPOs	Total Fund s Raise d ('in	at Discount-30 th calendar day from			No. of IPOs trading at Premium-30 th calendar day from listing day			No. of IPOs trading at Discount-180 th calendar day from listing day			No. of IPOs trading at Premium-180 th calendar day from listing day		
		Cr.)	Over 50%	Betw een 25- 50%	Less than 25%	Over 50%	Betw een 25- 50%	Less than 25%	Over 50%	Betw een 25- 50%	Less than 25%	Over 50%	Betw een 25- 50%	Less than 25%
2021-22	*3	46.39				2		1				2		1
2022-23	**9	179.7 0			3	2	1	3		2	1	5		1
2023-24	***7	175.4 8			2		2	2			1	2		

Upto December 30, 2023

^{*}The script with Listing date PlatinumOne Business Services Limited (September 16, 2021), Markolines Traffic Controls Limited (September 27, 2021) and Clara Industries Limited (December 29, 2021)

^{**}The scrip with Listing date Goel Food Products Limited (June 28, 2022), Sailani Tours N Travels Limited (July 08, 2022), Jayant Infratech Limited (July 13, 2022), B-Right RealEstate Limited (July 13, 2022), Shantidoot Infra Services Limited (September 19, 2022), Steelman Telecom Limited (October 10, 2022), Reetech International Cargo and Courier Limited (October 10, 2022), ResGen Limited (March 13, 2023) and Sudarshan Pharma Industries Limited (March 22, 2023).

^{***} The scrip with Listing date Retina Paints Limited (May 03, 2023), Innokaiz India Limited (May 11, 2023), Comrade Appliances Limited (June 13, 2023), Shelter Pharma Limited (August 23, 2023), Transteel Seating Technologies Limited (November 06, 2023), Kalyani Cast-Tech Limited (November 17, 2023) and Amic Forging Limited (December 06, 2023)

[^] The scrip of Shelter Pharma Limited, Transteel Seating Technologies Limited, Kalyani Cast-Tech Limited & Amic Forging Limited have not completed 180 Days from the date of listing and scrip of Amic Forging Limited have not completed 30 Days from the date of listing