EQP VTCEV'%66222336: 4 Y QTM'QTF GT'%RKV'237

EQOOQPYGCNVJ'QH'RGPPU NXCPKC FGRCTVOGPV'QH'VTCPURQTVCVKQP

D{ <'Lqp'Rgctrocp.''RjF'' Wpkxgtukv{''qh'Rkvudwtij

Cwi wuv'52.''423;

HKP CNTGRQTV

Ewtd/Tcor'F guki p'\*ETF+'cpf'Kpur gevkqp'U{uvgo '\*EKU+







<b>30'T gr qt v'P q0</b> HJ Y C/RC/423; /224/RKV''Y Q''37	401 qxgtpo gpv'Ceeguukqp'Pq0	50T gekr lgp vat 'Ec vengi 'P q0		
60VԽոց՝Երք 'UwdvԽոց	<b>70Tgr qt ⊮</b> ! 1521423;			
Ewtd/Tcor'Fgukip'*ETF+'cpf'Kpurgevkqp'U{uvgo'*EKU+		80Rgthqtokpi'Qticpk	cvkqp'Eqfg	
90Cwyj qt *u≺Y cvgtu."W"Xgncp."R0'O gcf qy Rgctm cp.'IΩ"Uy kuj gt."V0'[ cmwr mqxke."T0"C	u."Ш"Vqki q."\0'Føkppqegp q."О0" ){rgt."Ш'Оgrĸkng."F0	:0Rgthqtokpi'Qticpk	c vkqp'T gr qt v'P q0	
; 0Rgt hqt o lpi 'Qti cplt cvkqp'P co g'cpf 'Cf Uej qqn'qh'J gcnj "cpf 'Tgj cdktkcvkqp'Uelgpeg F gr ctvo gpv'qh'Tgj cdktkcvkqp'Uelgpeg"cpf "Vg	320Y qt niWpls/P q0*V]	ſĊ <b>ŀ</b> U+		
8647'Rgpp'Cxgpwg."Uwkg'623 Rkwudwti j."RC''37428	<b>330Еqpvt cev'qt 'I t сру</b> 66222336: 4."RK/"Y Q"3	<b>'P q0</b> 37		
<b>340Ur qpuqt lpi 'Ci gpe{ 'P co g'cpf 'Cf f tgu</b> Vj g'Rgppu{ nxcpkc'F gr ctvo gpv'qh'Vtcpur qtvc Dwtgcw'qh'Rncpplpi 'cpf 'T gugctej '' Eqo o qpy gcnj ''Mg{ uvqpg''Dwknf lpi	u" kqp"	<b>350V{ r g'qh'T gr qt v'c pi</b> Hlpcn'T gr qt v'817 14239'6	<b>f 'Rgt lqf 'E qxgt gf</b> " j": 1521423;	
622'P qt y 'Utggv.'8 <sup>3</sup> 'Hnqt J cttkudwti .'RC''39342/2286		360Ur qpuqt kpi 'Ci gpe{ 'Eqf g		
<b>370Uwrrngo gpwct{'Pqwgu&lt;</b> Eqpwcev <sup>i</sup> Kohqto cwlqp<'Tkejctf"U0[cmwrmqxka	e.''R0C0Rj qpg<**634+'64; /''6; 2: ''Go ckr	<u>tt{cmwrmqxkBrc0iqx</u>		
<b>380Cduxt cev</b> Kpceeguukdng'tqwgu'dgw ggp'n Gxgp'y kj 'tgi wrcykqpu.'kpceeguukdng'ukf gy cm c'eqo r tgj gpukxg'uqnwkqp'yq'y g'o gcuwtgo gg Vj g'Wpkxgtukx{ 'qh'Rkwudwti j 'y cu'ycungf 'yq'd hqewu'i tqwr u'cpf 'kpygtxkgy u'y kj 'kpf wuxt { 'uw etgcygf 0'Vj g'EKU'r tqyqv{rg'ku'tgcf { 'yq'dgi kp	lecvkqpu"ecp"dg"c"o çlqt"dcttkgt"vq"r ctvl u"eqpvkpwg"vq"etgcvg"r tqdrgo u"hqt"y j g ov."f cvc"eqmgevkqp."cpf "kphqto cvkqp"uvq wkrf "c"f gxkeg"vq"j grr"uvtgco nkpg"ewtd/t cmgj qrf gtu."vj g"ewtd/tco r "f guki p"cpf ' 'vj g"ko r ngo gpvcvkqp"r j cug"vq"j grr "dtkf	ekrcvkqp'hqt'rgqrng'ykoj'r gnejckt'wugtu0Gzkuvkoi'vge tcig'cpf'fkurnc{'qh'ewtd't cor'ogcuwtgogpvu0Vjtq kourgevkqp'u{uvgo'*#ETF1 ig'vjg'icr'kop'ewtd/tcor'f	j {ulecn'f kucdktkkgu" j pqrqi kgu'f q'pqv'qhtgt" co r u'cpf 'ukf gy crmt0' wi j 'f guki p'ej cpi gu." E KU#f gxleg'y cu" <sup>2</sup> guki p0	
<b>390Mg{ 'Y qtf u</b> <ewtd 'kour="" gevkqp.'y="" j<br="" r="" tco="">Gpxktqpo gpv.'Kohtcuvtwewtg.'J wo cp/Egpvgt y ky 'F kucdkrkskgu'Cev.'CF C.'Ugpuqtu.'Uqhy c Gpi kpggtkpi.'J wo cp'Hcevqtu</ewtd>	ggnej cktu. 'Oqdkrkx{ . 'Dvknv'' ff 'F guki p. 'Ceeguukdkrkx{ . 'Cogt lecpu'' tg'F gxgnqr ogpv. 'U{ uvgou''	<b>3: OF knt kl wkgp 'Uve vge</b> P q 'tgurt kevkqpu0'Vj ku'f q htqo ''y g 'P evkqpen'Vgej Ugtxkeg. "Ur tkpi hkgrf. "Xo	<b>) gpv</b> ewo gpv'ku'cxckrcdrg'' pkecn'Kohqto cvkqp C "44383.	
3; OUgewt ks{ 'Encuddlec ylqp'*qhlyj ku' t gr qt v+ Wpencuuldlgf	<b>420Ugewt k{ 'Encunktiec vlqp'*qh'vj kı</b> " <b>r ci g+</b> Wpencunktigf	<b>430P q0\thRci gu</b> 36:	<b>440Rt keg</b> P IC	
Hqto 'FQV'H'392209	*:/94+'' Tgrtqfwe	vkqp'qh'eqorngvgf'r c	∶i g'¢wyj qt k gf	

õVj g'eqpvgpvu''qhi'yj ku'tgr qtv'tghrgev'yj g''xkgy u''qhi'yj g''cwj qt\*u+'y j q''ku\*ctg+'tgur qpukdrg'hqt''yj g''hcevu'' cpf ''yj g''ceewtce{ ''qhi'yj g''f cvc''r tgugpvgf ''j gtgkp0'Vj g''eqpvgpvu'f q''pqv'pgeguuctkn{ ''tghrgev'yj g''qhhkekcn'' xkgy u''qt ''r qnkekgu''qhi'yj g''WU'F gr ctvo gpv'qhi'Vtcpur qtvcvkqp. ''Hgf gtcn'J ki j y c{ ''Cf o kpkwtcvkqp.''qt'' y g''Eqo o qpy gcnj ''qhi'Rgppu{nxcpkc''cv''yj g''vko g''qhi'r wdnkecvkqp0'Vj ku'tgr qtv'f qgu''pqv'eqpuvkwwg''c'' uvcpf ctf. ''ur gekhecvkqp''qt''tgi wrcvkqp0'o

 $\tilde{o}Vj$ ku'y qtmiy cu'ur qpuqtgf ''d{ ''y g''Rgppu{nxcpkc''F gr ctvo gpv'qh''Vtcpur qtvcvkqp''cpf ''y g''WUU' F gr ctvo gpv'qh''Vtcpur qtvcvkqp.''Hgf gtcn''J ki j y c{ 'Cf o kpkntcvkqp@o

#### Cdutcev

Koceeguukdıg'tqwgu'dgw ggp'mecvkqpu'ecp'dg'c'o clqt'dcttkgt''q'r ctvkekr cvkqp'hqt'r gqr ng'y kj " r j {ukecnif kucdktkkgu'Gxgp'y kj 'tgi wrcvkqpu 'kpceeguukdıg'ukf gy cmu'eqpvkpwg''q'etgcvg'r tqdıgo u'' hqt'y j ggrej ckt''wugtu0Gzkuvkpi ''vgej pqmi kgu'f q''pqv'qhigt''c''eqo r tgj gpukxg''uqnwkqp''q''yj g'' o gcuwtgo gpv.'f cvc''eqnigevkqp.''cpf 'kphqto cvkqp''uvqtci g''cpf 'f kur nc {''qhi'ewtd'tco r u''cpf ''ukf gy cmu0' Vj g''Wpkxgtukw{ ''qhi'Rkxudwti j ''y cu''cungf ''q''dwkrf 'c''f gxkeg''q''j gn ''uvtgco nkpg''ewtd/tco r '' o gcuwtgo gpv0Vj tqwi j 'f guki p''ej cpi gu.''hqewu'i tqwr u''cpf ''kpvgtxkgy u''y kj 'kpf wurt {''uvcngj qif gtu.'' y g''Ewtd/Tco r ''F guki p''\*ETF +''cpf ''Ewtd''Kpur gevkqp''U{uvgo ''\*EKU+'f gxkeg'y cu''etgcvgf 0'Vj g''EKU'' r tqvqv{r g'ku''pqy ''eqo r ngvgf ''cpf ''tgcf {''q''j gn ''dtkf i g''y g''i cr ''kp''ewtd/tco r ''kpur gevkqp''u{uvgo u0

*Mg{ y qtf u*<'Ewtd/Tco r 'Kpur gevkqp.''Y j ggnej cktu.'O qdkrkx{.'Dwkn/Gpxktqpo gpv.'' Kphtcurt wewtg.''J wo cp/Egpvgtgf 'F guki p.'Ceeguukdkrkx{.'Co gtkecpu'y kj 'F kucdkrkxkgu'Cev.''CF C.'' Ugpuqtu.''Uqhy ctg'F gxgrqr o gpv.''U{ uvgo u'Gpi kpggtkpi .''J wo cp'Hcevqtu

#### Kpvt qf wevkqp<

Koceeguukdng''tqwgu''dgw ggp''nqecvkqpu''ecp''dg''c''o clqt''dcttkgt''q''r ctvkekr cvkqp''hqt''r gqr ng'' y kj ''r j {ukecn'f kucdktkkgu0'Rwdnke''dwkff kpi u'\*3+''tgurcwtcpu'\*3+''hqqf ''uvqtgu'\*4+''dwukpguugu'\*5+''cpf '' f qevqtuø'qhhkegu'\*6+''ctg''htgs wgpvn{''hqwpf ''q''dg''kpceeguukdng.'f wg''kp''r ctv'vq''ctej kgewtcn'qdurcengu'' uwej ''cu'y g''cdugpeg''qh''uwkcdng''tco r u0'Utkr/cpf/hcm'ceekf gpwi'kpxqnxkpi ''uvcktu''qt''tco r u''ctg''c'' eqo o qp''ecwug''qh''kplwt {''co qpi ''y j ggrej ckt''wugtu'\*7.8+0'Kpceeguukdng''y qtm reegu''ecp''dg'' ej cmgpi kpi 'hqt'tgvckpkpi ''go r m{ o gpv'\*9+0'Y j ggrej ckt''wugtu''tgs wgpvn{''r tkqtkk{ g''tqwgu''y kj '' uo cmgt''unqr gu''cpf ''dgwgt''uwthceg''eqpf kkqpu''qxgt''uj qtvgt''tqwgu''kp''qtf gt''q''hcektkscg''tcxgn'\*: +0' Ewtd/tco r u''ctg''etgcvgf ''q''gpcdng''r gqr ng''y kj ''f kucdktkkgu''q''uchgn{''to r cktgf 'tgn{''o quv'j gcxkn{''qp'' ewtd/tco r u''\*; +''cm quv''cml'f guki p''dguv/r tcevkegu''ctg''etgcvgf ''y kj ''j gug''wgt''i tqwr u''kp''o kpf '\*32+0

#### Fkhlewnkgu'y ky 'Ewtd'Tcor'Cuuguo gpv

Gxgp'y kj 'tgi wækqpu.''kpceeguukdrg''ukf gy cmu''eqpvkpvg''q''etgcvg''r tqdrgo u''hqt''y j ggrej ckt'' wugtu0C''uwtxg{''kp''P gy ''[ qtmlhqwpf ''y cv': 2' ''qhi'kpf kxkf weni'kp''o cpwen'y j ggrej cktu''epf '95' ''qhi'' kpf kxkf weni'kp''o qvqtk gf 'y j ggrej cktu''eqpukf gtgf ''ewtd'tco r u''q''dg''c''dettkgt ''q''r j {ukecn'eevksk{ '''\*37+0Cpqy gt''uwf {'hqwpf '82' ''qhi'y j ggrej ckt''wugtu''pggf gf ''q''qxgteqo g''c''dmengf ''ewtd'tco r ''cpf '' 34' ''j cxg''dggp''wpedrg''q''qxgteqo g''c''dmengf ''ewtd'tco r u''hqt''Co gtkecpu'y kj ''F kucdkrkkgu''Cev<sup>\*</sup>CFC+'' eqo r ncpeg''eqpvckpu''kpghtkekgpekgu0V'j g''F gr ctvo gpv'qhi'Lwurkeg''\*F QL+'tgeqo o gpf u''y cv'' cuuguuo gpwl'qh''ewtd/tco r u''ctg''eqo r ngvgf ''kp''vgco u''qhi''j tgg0Qpg''o go dgt''qhi'y g''vgco '' u{ugo cvkecm{'tgcf u''y g''uvtxg{''kputwevkqpu''cmyrf.''c''ugeqpf ''o go dgt''engu''y g''ewtd'tco r '' o gcuwtgo gpwl'epf 'y g''y ktf ''vgco ''o go dgt''tgeqtf u''pqvgu''epf ''emgu''r j qvqi tcr j u'qhi'y g'' o gcuwtgo gpwl'\*36+0Vj g''F QL''cnq''tgeqo o gpf u''y cv''o gcuwtgo gpwl'etg''sengp''wukpi ''c''erg'' o gcuwtg.''f ki kcnl'ngxgn''epf ''f ki kcnl'eco gtc0'Vj gug''o gy qf u''etg'vgf kqwu ''gti qpqo kecm{''kpthkekgpv.'' cpf ''ko g''eqpuwo kpi 0

#### Gzkwipi 'Vgej pqnqi { 'hqt 'Ewt d'Tcor' Cuguto gpv

Vj g'wg''qhi'f cw''eqnge kqp''cpf ''ctej kxcn'uqhy ctg'ku'tgeqo o gpf gf 'hqt''ewtd'tco r '' cuuguuo gpv.''cnpi ''y kj ''y g''t tgugpeg''qhi'y qtngtu'y kj ''cf gs wwg''CF C''tckpkpi ''kp''y g''kgrf ='y g'' kpvgi tcvkqp''qhi'CF C''uvcpf ctf u'kpvq''r tqlgev'r mppkpi ''cpf ''f gxgnqr o gpv=''y g''wg''qhi'wgt/htkgpf n{ '' y gdukgu'r tqxkf kpi ''kphqto cvkqp''cdqwi'tgi wrevkqpu.''ncy u''cpf ''r tqegf wtgu=''cpf ''y g''r tkqtkkt cvkqp''qhi'' y g''ko r tqxgo gpv'qhi'necvkqpu'y kj ''i tgcvgt 'ko r qtvcpeg.''wg.''cpf ''wti gpe{ ''qhi'ko r tqxgo gpv'\*39+0C'' pwo dgt''qh'uqhiy ctg''qqnu''j cxg''dggp''f gxgnqr gf 'hqt 'i gpgtcn'o cpci go gpv'cpf ''o ckpvgpcpeg''qhi'' ukf gy cmu. 'kpenvf kpi ''y g''gxcnwcvkqp''qhi'ewtd'tco r u''hqt''CF C''eqo r nkcpeg0'UxtggvLcxgt 'ku''c''qqni'hqt'' kpxgpvqt{ ''cpf ''dwf i gv'r ncppkpi ''wugf 'hqt'tqcf ''cpf ''ukf gy cmi'o ckpvgpcpeg''cpf ''kpenvf gu''fgcwtgu''hqt'' tcvkpi ''ewtd'tco r ''CF C''eqo r nkcpeg''cpf ''c'i gqi tcr j ke 'kphqto cvkqp''u{ugo ''A KU+''hqt''f kur m{ kpi '' kpxgpvqt{ ''qhi'ewtd'tco r u''cpf ''y gk ''CF C''eqo r nkcpeg''\*3; +0Vj g''uxcg''qhi'P gy ''Igtug{ ''etgcvgf ''c''ftgg'' qprkpg''ecnewcvqt''hqt''f gvgto kpkpi ''y j gy gt ''c''ewtd'tco r ''y cu'CF C''eqo r nkcpv\*43+0Vj g''Rwdrke'' T'k j wi'qh'Y c{ ''Cuuguuo gpv'Rtqeguu'\*RTQY CR+'ku''wgf ''hqt''gxcnwcvkpi ''ukf gy cmm''cpf ''ewtd'tco r u'' hqt 'CFC''eqo r nkcpeg'\*44+0'Vj g''u{uvgo ''eqpukuvu''qh''c''ectv'y ky ''cp''cwcej gf ''kpenkpqo gvgt'hqt'' o gcuvtkpi 'i tcfg''cpf''c''y ktgnguu''tqm'c/y j ggn'hqt''o gcuvtkpi ''f kuvcpeg0'Fcvc''ku''vtcpuo kwgf ''q''cff f kur nc{gf ''qp''c''ncr vqr ''qt''cdngv'eqo r wgt''qp''y g''ectv'cpf ''ecp''cnuq''dg''wr nqcfgf ''vq''c'I gqi tcr j kecn'' Kohqto cvkqp''U{uvgo ''A KU+'fcvcdcug0

### Uj qt veqo kpi u'qh'Gz kuvkpi 'Vgej pqnqi {

Gz kukpi "vgej pqmi kgu"f q"pqv"qhigt"c"eqo r tgj gpuksg"uqnwkqp"vq"yj g"o gcuwtgo gpv"f cvc" eqmgevkqp."cpf "kphqto cvkqp"uvqtci g"cpf "f kur nc{"qhi"ewtd"tco r u"cpf "ukf gy cmu0Vj g"gz kukpi " uqhvy ctg"vgej pqmi kgu."uwej "cu"CteI KU"cpf "UvtggvUcxgt."ctg"wughwnhqt"vj g"o cpci go gpv"qh"ewtd" tco r "f cvc"cpf "hqt"f kur nc{u"qp"o cr u. "dwv"pqv"j gr hwnhqt"o gcuwtkpi "ewtd"tco r "f ko gpukqpu"cpf " cf f tguukpi "yj g"cuuqekcvgf "vko g"cpf "ghiqtv"vq"kpr wv"y cv'o gcuwtgo gpv"f cvc"kpvq"yj g"uqhvy ctg0' Cnj qwi j "RTQY CR"co ghqtcvgu"yj ku"r tqdrgo "d{ "kpvgi tcvkpi "f cvcdcug"uqhvy ctg"y kj "c" o gcuwtgo gpv"vqqn"yj g"u{ uvgo "ku"dwm{."tgs wktgu"cp"cf f kkqpcn"vqqnliqt"o gcuwtkpi "f kurcpegu."cpf " f qgu"pqv'cwqo cvkecm{ "wr mcf "kphqto cvkqp"kpvq"yj g"I KU"f cvcdcug0Vj wu."yj gtg"ku"cp" wpo gv"pggf " hqt"c"ewtd"tco r "cuuguuo gpv"vqqniy j kej "uveeguuhwn{ "cpf "ugco nguun{"kpvgi tcvgu"pgi yj "cpf "i tcf g" o gcuwtgo gpvu."cpf "uqhy ctg"hqt"uvqtci g"cpf "o cr r kpi "ewtd"tco r "kpurgevkqp"f cvC0

#### Hqewu'I t qwr 'O gyj qf qnqi {

Uwf gpul'htqo ''y g'Wpksgtuks{ ''qh'Rkvudwti j ''r ctvlekr cvgf ''kp''c''hqewu'i tqwr ''q'j gr ''dgvgt'' wpf gtuvcpf ''y g''wucdkts{ ''qh''y g''EKUETF ''f gxleg0'Gcej ''r ctvlekr cpv'y cvej gf ''c''u j qtv'tckpkpi ''xkf gq'' y cv'f go qpuvtcvgf ''y g''ni kuvleu''qh''y g''cr r ''cpf ''y g''EKU'f gxleg0'Gcej ''r ctvlekr cpv'cnq''o gcuwtgf ''hxg'' f khigtgpv'ewtd/tco r u'kp''Gcuv'Nkdgtv{. ''Rkvudwti j ''RC.''ugrgevgf ''d{ ''RgppF QV0'Gcej ''ewtd/tco r ''y cu'' o gcuwtgf ''kp''y q''y c{u0'Hktuv.''kv'y cu'o gcuwtgf ''kp''y g''tcf kkqpcn'o gy qf 'y kj ''c'f ki kcn'ngxgn'cpf '' o gcuwtpi ''cr g.''crupi ''y kj ''uwdugs wgpv'tgeqtf kpi ''kpvq''y g''RgppF QV'EU/6623''hqto 0'Ugeqpf .''kv'' y cu'o gcuwtgf ''y kj ''y g''EKU.''wukpi ''qpn{''y g''f gxkeg''hqt''cm'hqto u''qh''o gcuwtgo gpv0'Gcej ''uwdlgev'' y cu'tgur qpukdng'hqt''eqpf wevkpi ''hqwt''o gcuwtgo gpv1''qh''gcej ''kpf kxkf wcn'ewtd0'Vj ku'kpenvf gf ''y q'' j qtk qpvcn'f kuvcpeg''o gcuwtgo gpvu''cpf ''y q''i tcf g''o gcuwtgo gpv0

Vj g'hlpcn'o gcuwtgo gpv'cngp'hqt'ý ku'hqewu'i tqwr 'y cu'ko g0'Vko g'y cu'o gcuwtgf 'hqt'dqý " RgppF QV'o gy qf 'cpf 'EKU'ewtd'tco r 'o gcuwtgo gpvu0'Hqt'RgppF QV'ko g'o gcuwtgo gpvu.'ko g" y cu'tgeqtf gf 'y j gp'ý g'r ctvkekr cpv'dgi cp'ý g'o cpwcn'o gcuwtgo gpv'cpf 'chvgt'ý g'o gcuwtgo gpv" y cu'y tkwgp'f qy p'cpf ''uj glj g'xgtdcm{ ''ucvgf ''ý g'o gcuwtgo gpv0'Hqt'EKU'ko g'o gcuwtgo gpvu. ''ko g" y cu'tgeqtf gf ''chvgt'ecnkdtcvkqp''qh''y g'f gxkeg.''y j gp''y g'r ctvkekr cpv'r tguugf 'ôDgi kp'O gcuwtgo gpvo" qp''y g'EKU'cpf ''gpf gf ''y j gp''y g'r ctvkekr cpv'r tguugf 'ôGpf 'O gcuwtgo gpvö''qp''y g''EKU0'Vj tgg''qy gt'' vguvkpi ''o gcuwtgo gpvu''y gtg''cngp'f wtkpi ''y g'hqewu'i tqwr <'y g''EKU'VcuniCuuguuo gpv''J ggv'' f gxgqrq gf ''d{ ''y g''Wpkxgtukv{ ''qh''Rkwudwti j 'Tgj cdkrkcvkqp''Uekgpeg'( ''Vgej pqrqi { 'F gr ctvo gpv.''y g'' U{ urgo ''Wucdkrkv{ ''Uecrg'\*UWU+.''cpf ''y g'T cr kf ''Gpvktg''Dqf { ''Cuuguuo gpv'\*TGDC +0'Hqt ''o qtg''f gvckuu'' qp''y g'o gy qf qrqi { ''qh''y g''EKU'VcuniCuuguuo gpv''J ggv.''UWU'cpf 'TGDC''ugg''Cr r gpf kz ''E0

## HQEWU'I TQWR'TGUWNVU

Vj g'hqewu'i tqwr 'kpenwf gf ''y tgg''uwf gpv'xqnwpvggtu'htqo ''y g'Wpkxgtukw{ ''qh'Rkwudwti j 0'Cm' hqewu'i tqwr 'r ctvkekr cpvu'j cxg'r tgxkqwu''gpi kpggtkpi ''gzr gtkgpeg. ''dw''xct{kpi ''f go qi tcr j keu'hknyf '' dgrqy ''kp''Vcdrg''30

#### Vcdng'3<'Hqewu'I tqwr 'F go qi tcr j keu

	I gpf gt	J gki j v	Cig	Gf weevlqp	Fgitgg	Crr'Wug
					Tgj cdkrkxcvkqp"	
Uwdlgev'3	0	7); \$	47/56	O cuvgt)u'F gi tgg	Vgej 0	3/5'j tu0
					O gej 0	
Uwdlgev'4	Н	7)7\$	3:/46	Dcej gnqt)u'F gi tgg	Gpi kpggtkpi	3/5'j tu0
					O gej 0	
Uwdlgev'5	0	7); \$	47/56	Dcej gnqt)u'F gi tgg	Gpi kpggtkpi	3/5'j tu0

Ewtd/tco r 'i tcf g'o gcuwtgo gpwi'y gtg''xctkcdn{ 'ceewtcy'' f gr gpf kpi ''qp''y g'tco r ''{r g'cpf '' y g''ur gekhe''o gcuwtgo gpv0J qtk qpvcn'f kuvcpeg''o gcuwtgo gpvu''y gtg''cnq''xctkcdn{ ''ceewtcy.'' cnj qwi j ''q''c''nguugt ''gz vgpv0Kp''ygto u''qh''vo g''tgs wktgf ''hqt''o gcuwtgo gpv''kpkkcn'cpcn{ uku'uj qy u'y cv'' o cpwcn'o gcuwtgo gpv'ku''nguu''vo g''eqpuwo kpi ''y cp''o gcuwtgo gpv'y kyi ''y g''EKU'f gxkeg0J qy gxgt.'' ceeqwpvkpi ''hqt''y g''pwo dgt''qh''r gqr ng''y j qug''vo g''ku''tgs wktgf ''q''eqo r ngvg''gcej ''cum''c''o qf khgf '' cpcn{ uku'uj qy u'y cv'EKU'o gcuwtgo gpv'ku ''qxgtcm''o qtg''vo g''gthkekgpv'y cp''o cpwcn'o gcuwtgo gpv0' Y g''cnq''cpcn{ | gf ''y g''gthkekgpe{ ''cpf ''ceewtce{ ''qh'y g''EKU'f gxkeg'd{ ''o gcuwtkpi ''y g''hxg''ugngevgf '' ewtd'tco r u'kp''ygto u''qh''vo g''\*ugeqpf u+.''i tcf g'\*'r gtegpv+''cpf ''j qtk qpvcn'f kuvcpeg'\*kpej gu+0'Hqwt'' o gcuwtgo gpwi'y gtg''ugngevgf .''C.''R.''Y .''cpf ''E.''qwi'qh''y g''y grxg''qvcn'ewtd'tco r ''o gcuwtgo gpvu''q'' ucxg''vo g0'Gcej ''uwdlgevi'eqpf wevgf ''y tgg''tkcni'hqt''y g''hxg''ewtd'tco r u0'Cmi'y g''uvdlgevuø'f cvc''y gtg'' cxgtci gf ''dcugf ''qp''o gcuwtgo gpv'hqt''dqy ''EKU'cpf ''O cpwcn0'Vcdngu''308/307''y gtg''o cf g''hqt''gcej '' ewtd.''r tqf wekpi ''y g''I tcr j u''308/306'\*Crr gpf kz ''F +0'Cmi'gttqt''dctu'y gtg''dcugf ''qp''y g''RgppF QV'' f cvc''y ky kp''7' ''gttqt0

Cm<sup>1</sup>r ctvlekr cpul'ueqtgf "cv<sup>1</sup>ngcuv'36'r qkpul'qw'qh'37''qvcn'r qkpul'qp''y g''EKU'vcunicuuguuo gpv'' uj gg0Vj g'o ckp''ctgc''qh''eqpegtp'ku''ej qqukpi ''y g''{r g''qh''ewtd'tco r ''dgkpi ''o gcuwtgf ''qp''y g''cr r ''cpf'' mecvkpi ''y g''eqttgevi'gpf kpi ''r qukkqp''nqt''y g''EKU''cv'y g''gpf ''qh''y g''ewtd/tco r ''o gcuwtgo gpv0Vj gug'' ctgcu''qh''eqpegtp'y gtg''cf f tguugf ''kp''y g''EKU'tgf guki p'\*ugg'F guki p'Tguwnu+0Vj g''r ctvlekr cpvu)'UWU'' ueqtgu''hqt''y g''EKU'f gxkeg'y gtg''9: .'', 407''cpf ''97''qw'qh''c''qvcn'322''r qkpu. ''y kj ''cp''cxgtci g'ueqtg''qh'' : 3090Dcugf ''qp''y gug'tguwnu. ''nqt''y ku''nqewu''i tqwr .''y g''EKU'f gxkeg''ku''cdqxg''cxgtci <u>g''hqt''r ctvlekr c</u>pv'' wucdktkv{0Vj g'TGDC ''cp<u>cn{uku'y cu'uki</u> pkhecpvn{ 'j k j gt ''nqt''o cpwcn'o gcuwtgo gpvu'**'**(8.6 ± 0.6) y cp''EKU'o gcuwtgo gpui'**'**(2.6 ± 0.6)0'TGDC ''ueqtgu'y gtg''j k j gt ''nqt''o cpwcn'o gcuwtgo gpv'cpf kpf kecvgf ''c'j k j /tkuni'vcum'y j gtgcu''y g''ueqtgu'y gtg''ny gt ''nqt''o gcuwtgo gpv'y kj ''y g''EKU'f gxkeg.'' kpf kecvkpi ''ny ''tkuni'\*Cr r gpf kz''E+0

## F GUM P 'T GUWNVU

Cv'ý g''dgi kppkpi "qh'ý g''r tqlgev. 'ý g''kpkkch'Ueqqvgt/dcugf ''r tqvqv{ r g'\*Cr r gpf kz 'C+'y cu'' gxcnwcvgf ''cpf ''tgxkgy gf ''q''cuuguu'kwi'wucdktkv{ .''f wtcdktkv{ .''cpf ''kpvgi tkv{ ''qh'f cvc''eqmgevkqp0'Dcugf '' qp''y ku''cuuguuo gpv.''ctgcu''qhi'ko r tqxgo gpv'y gtg''kf gpvkhkgf 'hqt 'hwt y gt ''f gxgqqr o gpv'y tqwi j qw'y g'' r tqlgev0'Kp''vgto u''qh'wucdktkv{ .''y g''uk{ g''cpf ''uj cr g''qhi'y g''kpkkch'r tqvqv{ r g'o cf g''kv'f khhewn/'q'' o cpgwxgt0'Kp''cf f kkqp.''xqnwpvggt''r tqvqv{ r g''yguygtu''y gtg''htwntcvgf ''y kj ''y g''htuvi gpgtcvkqp''wgt'' kpvgthceg''f guki p0'Vq'ko r tqxg''y g''f guki p.''y g''qxgtcm'uk{ g''cpf ''ngpi y ''qh''y g''f gxkeg''y cu''tgf wegf .''cu'' y gm''cu'y g'y gki j v0'Vj g''wgt''kpvgthceg''y cu''cnq''o cf g''o qtg''kpwkkxg.''gur gekcm{''y j gp''gpvgtkpi '' o gcuwtgo gpvu''cpf ''pcxki cvkpi ''dgw ggp''qr vkqpu'y kj kp''y g''pkkkch'r tqvqv{ r g'Cpf tqkf ''o qdkrg crrnkecvkqp0Hwtyjgt. "xqnwpvggtu'uwi i guvgf "vj cv'f cvc"eqmgevgf "uj qwrf "cwqo cvkecm{"dg"ucxgf 0

Kp"\gto u"qh"f wtcdkrkv{. "yj g"kpvgteqppgevkqpu"dgwy ggp"eqo r qpgpvu"kp"yj g"kpkkcrhr tqvqv{r gu" y gtg'kf gpvkhkgf '\q'dg'r qvgpvkcnhcknvtg''ctgcu0Kp''r ctvkewrct. 'vj g'5F 'r tkpvgf ''dcwgt { ''ugewtgo gpv'y cu'' htci krg0Cffkkqpcm{."y g'uvggtkpi "eqnvo p"qh"y g"kpkkcn"rtqvqv{rg'y cu'rtqpg'vq"eqpukfgtcdrg" o qxgo gpv."y j kej "y qwf "kpvtqf weg"kpeqpukuvgpekgu"kp"o gcuwtgo gpv'cu"y gm'cu"r wi'y g"vcdrgv'cv" tkum'qh'f tqr r kpi 0'Qp''vqr "qh''y ku. 'y g''u (uvgo "pggf gf ''vq "dg "dg wgt "r tq vge vgf "cpf 'tgukuvcpv''vq "y gv' eqpf kkqpu'kp''y g'hlgff 0'Vq'ko r tqxg''y g'f guki p.'f khgtgpv'o cvgtkcnu'y gtg''vugf ''qp''y g'pgzv'' r tqvqv{r gu'vq'kpetgcug'uvtgpi y "cpf 'f wtcdkkkv{ 'y j kng"nggr kpi 'y gki j v'nqy 0'Vj gtg'y cu'cnuq" go r j cuku'qp''y g'eqppgevkqp''r qkpv'dgw ggp''y g'j cpf rg''cpf ''r rcvhqto ''dcug. ''y j gtg''o quv'qh''y g' tqvcvkqp"qeewtu0Vj g"r qy gt 'uwr r n{ 'y cu'o qxgf 'vqy ctf 'y g'j cpf rg. 'y j kej 'ku'erqugt 'vq'y g'vcdrgv' eqo r wgt0Vj g'ugpuqtu'y gtg'ngr v'cu'nqy ''vq''y g'i tqwpf "cu'r quukdng0Kp''ygto u'qh'kpygi tkx{ "qh'f cvc" eqngevkqp. 'y g'o gy qf u'qh'f cvc 'eqngevkqp 'wugf 'd { 'y g'kpkkcn'r tqvqv { r g'j cf 'hcwnu0Hktuv. 'y g'' gpeqf gt 'hqt 'j qt k qpvcn'f kncpeg 'gpeqwpvgt gf 'ceewtce { 'kuuwgu'dcugf ''qp'i gct ''unkrrci g0Ugeqpf .'' i tcfg'htqo ''y g''ceegngtqo gygt''qp''y g''cdngy'y cu''pqv'uwhkekgpv0'Vq'kortqxg'fcvc''eqngevkqp'(" gpuwtg'r tqr gt 'ceewtce {.'c'\ko kpi 'dqn/kpuvgcf ''qh'5F 'r tkpvgf 'i gct 'y cu'\q''dg 'wugf 'hqt 'y g''gpeqf gt '\q'' o gcuwtg'j qtk qpvcnlf kuvcpeg. "cpf "cp"gzvgtpcnlceegngtqo gvgt "y cu'vq"dg"wugf "cpf "nqecvgf "qp"vj g" dcug"qh'y g'r ncvhqto "vq"o koko k g'r qvgpvkcnhqt"gttqt"cpf "kpeqpukuvgpekgu0

Htqo ''y gug'i qcnı.''c''eqo r ngw''tgf guki p''qh''y g''EKU'y cu''eqo r ngwf 0'Vj g''r tqvqv{r g'' \*Cr r gpf kz ''D. ''Hki wtg'5+'y cu''o wej ''hki j vgt''cpf ''uo cmgt.''cpf ''y cu''pqy ''kpvgpf gf ''q''dg'j gnf ''kp''htqpv'' qh''y g''wugt.''o wej ''htng''c''o gvcn'f gvgevqt0'Ej cpi gu''y gtg''cnuq''o cf g''q''y g''vcdngv.''cpf ''y g''uqhvy ctg'' y cu''o ki tcvgf ''htqo ''I qqi ng'O cr u''q''CteI KU0Qvj gt''r ncppgf ''f guki p''ej cpi gu''y gtg''cnuq''eqo r ngvgf.'' uwej ''cu''o qxkpi ''y g''dcwgt {.''cff kpi ''cp''gz vgtpcn'ceegngtqo gvgt.''cpf ''wukpi ''r tgekukqp''i gctu''hqt'' o gcuwtgo gpv'j qtk qpvcn'f kuvcpegu0'Vj g''r j {ukecn'cpf ''uqhvy ctg'' qcmi'y gtg''qwnkpgf ''cpf ''eqo r ngvgf '' vq''tguqnxg''y g''kuuwgu'kf gpvkhkgf ''kp''y g''kpkkcn'r tqvqv{r g''\*ugg'Cr r gpf kz 'D+0

Dcugf "qp"y ku"eqo r ngvg"tgf guki p. "pgy "r tqvqv{r gu"y gtg"eqpuvtwevgf. "cpf "y gp"y gtg" gxcnxcvgf 'hqt "wucdktkv{ "wukpi "y g"EKU"Vcum'Cuuguuo gpv"U ggv"cpf "y g"U{ uvgo "Wucdktkv{ "Uecng" \*UWU+0'Vj g"r tqvqv{r g"y cu"gxcnxcvgf "gti qpqo kecm{. 'wukpi "y g"Tcr kf "Gpvktg"Dqf { "Cuuguuo gpv" \*TGDC+0'Vj g"tguwnu"htqo "y gug"gxcnxcvkqpu"u qy gf "y cv'y g"EKU"r tqvqv{r g"y cu"cdqxg"cxgtci g"kp" vgto u"qh"r ctvkekr cpv"wucdktkv{ "cpf "gpeqo r cuugf "nqy gt "kum'o qxgo gpvu"y cp"o cpwcn"ewtd"tco r " o gcuwtgo gpvu"<sup>%</sup>ugg"Cr r gpf kz "E+0'Gxcnxcvqtu"cnq"r tqxkf gf "hggf dcemihqt "y g"ko r tqxgo gpv"qh"y g" r tqvqv{r g. "y j kej "kpenxf gf "uwi i guvlqpu"htng"eqxgtkpi "gzr qugf "gngevtqpkeu."o qf kh{ kpi "y g"j cpf ng" i tkr. "uko r nth{ kpi "y g"wugt"kpvgthceg. "kpenxf kpi "c"o qtg"uxcdng"dcwgt { "eqo r ctvo gpv."cpf "r tqxkf kpi "c" dgwgt"gzr ncpcvkqp"qh'y g"qxgtcmif guki p"cpf "dwkn/kpvq"y g"hqcn'r tqvqv{r gu\*ugg"Cr r gpf kz" F+0

#### Fkewukqp

#### Hqewu'I tqwr 'Hggf dcenicpf 'Hwwtg'Kortqxgo gpv'Rncpu

Htqo "y g'hqewu'i tqwr "ygulpi ."y gtg"y gtg"o cp{ "cf xcpvci gu"qh"y g"EKU"qxgt"o cpwcn" o gcuwtgo gpv'lp"ygto u"qh"wucdktlw{0Vj g"EKU"y cu"o qtg"eqo hqtvcdng"yq"wug."cu"kv'y cu"pq"hqpi gt" pgeguuct{ "yq"us wcv'nqy "yq"y g"i tqwpf "yq"o gcuwtg."y j kej "ku"eqpulkuygpv'ly kj "y g"TGDC o gcuwtgo gpvl'tguwnu0l¥p'cf f kkqp. 'wukpi 'ý g'EKU'y cu'nguu'ncdqt 'kpvgpukxg'cpf 'o qtg''ko g'ghhekgpv' y cp'o cpwcn'o gcuwtgo gpv0Vj ku'ku'dgecwug''y g'EKU'qhhgtu'c''uko r ngt 'y qtnhnqy 'cpf 'f qgu'pqv' tgs wktg'o gcuwtgo gpvu''q'dg''y tkwgp''qw'y kj 'r gp''cpf 'r cr gt0Gngevtqpke''f cvc''eqngevkqp''cmqy u'hqt'' c''uo cngt ''ej cpeg''qhi'nqukpi 'r cr gt 'f cvc0Wugtu''cnq 'y qwi j v'y g'EKU'y cu'kpwkkxg''cpf 'o qtg''r tgekug'' hqt ''ngpi y ''o gcuwtgo gpv.''cu''vcr g''o gcuwtg''qpn{ 'i kxgu''ngpi y ''q'3138y ''qh''cp'kpej ''cpf ''o c{ kpvtqf weg''xctkcvkqp''dcugf ''qp''j qy ''y g''wugt''o gcuwtgu0ľ4p'y g''EKU'uqhy ctg''cr r necvkqp. ''wugtu'' cr r tgekcvgf ''y g''rc{qw''cpf ''f kci tco u.''cu''y gm''cu''y cv'y g''eqnqt''qh''c''o gcuwtgo gpv'pwo dgt''y j kej '' ko o gf kcvgn{ 'kpf kecvgu'y j gy gt''ky'eqo r ngu'y kj ''CFC''uvcpf ctf u0

Uqo g'f kucf xcpvci gu'kf gpvkhkgf 'f wtkpi ''y g''newu'i tqwr ''yuvkpi ''y gtg''kp''y g''cr r necvkqp''wugt'' kpvgthceg.''uwtf kpguu''qh''y g''u{uvgo .''ecnkdtcvkqp''r tqegf wtgu ''gti qpqo keu.''cpf ''y g''equv0'Hktuv.''newu'' i tqwr ''o go dgtu'y gtg''eqpegtpgf ''cdqwi'y g''u{uvgo ''equv'eqo r ctgf ''q''y g''kpgzr gpukxg''cngtpcvkxg''qh'' c''o gcuwtkpi ''cr g''cpf ''gxgt0'Dg{ qpf ''y ku.''uqo g''wugtu''y gtg''htwutcvgf ''d{ ''y g''pvo gtqwu''cpf '' uqo gvko gu''wpengct ''uvgr u''kp''y g''cr r necvkqp''cpf ''gzr tguugf ''c'f guktg''nt''c''o qtg''wugt/htkgpf n{ '' kpvgthceg''y kj ''y g''cdktw{ ''q''unhr ''uvgr u0'P qvg''y cv'wugtu''y gtg''pqv'r tqxkf gf ''gpqwi j ''ko g''q''hwm{ '' i tcur ''y g''hwpevkqpcnkw{ ''qhi'y g''cr r necvkqp0'Hwty gt.''wugtu''y qwi j v'y cv''gpvgtkpi ''kphqto cvkqp''y cu'' wpkpwkkkxg''cpf ''y cv'uo cm''wptgur qpukxg''dwwqpu'y gtg''cp''kuwg0'Wugtu'cnuq''uckf ''y cv'y g''uetggp''' y cu''uqo gvko gu'f kthkewn/'q''ugg''cu''c'tguwn''qh''i netg''htqo ''y g''uwp0

Ko'vgto u'qh'ý g''r j {ukecnf gxkeg.''wugtu'uckf 'ý cv'gzr qugf ''gngevtqpkeu'y qwf ''dg''c'hcdktk{ '' cpf ''uj qwf ''dg''eqxgtgf 0'Hwty gt.''y g{ ''y gtg''eqpegtpgf ''cdqwi'y g'f wtcdktk{ ''qh'y g'f gxkeg''cpf ''qhgp'' y gtg''chtckf ''q''dtgcmi'y g''u{uvgo 0'Vj g''wugtu''cnuq''uckf ''y cv'y g'f gxkeg'hgn/tki kf.''dwm{ .''cpf ''y cu'' f khhewn/''q''tcpur qtv0'Uqo g''wugtu''uwi i guvgf ''y cv'o qtg''y gki j v'uj qwf ''dg''cf f gf ''q'y g''dcug''qh'y g'' f gxkeg''q''kpetgcug''uvcdktkv{ 0'Gti qpqo kecm{ .''uqo g''wugtu''gzr gtkgpegf ''ki j vpguu''kp''y g''dcemi'cpf '' uj qwf gtu'f wtkpi ''wug''cpf ''uwi i guvgf ''y cv'c''dgwgt''j cpf ng''ku'kpeqtr qtcvgf ''cpf ''y cv''y g{ ''dg''cdng''q'' o qxg''kp''tghgtgpeg''q''y g''dcug''r rcvg0'Hqewu'i tqwr ''wugtu''gzr tguugf ''eqpegtp''cdqwi'y g''ecnkdtcvkqp''qh'' y g''f gxkeg''dcugf ''qp''c''dwddmg''ngxgn'cv'yj g''dcugr rcvg''qh''y g''f gxkeg0'Wugtu''uckf ''y cv'yj ku''ecnkdtcvkqp'' o gyi qf ''ku''uwdlgevkxg''cpf ''y cv'kv'o c{ ''kpvtqf weg''o qtg''gttqt''kpvq''y g''u{uvgo ''y cp''pgeguuct{0

Ej cpi gu'tgs wguvgf "d{ "y g'hqewu'i tqwr "y gtg"tgncvgf "vq"y g"j cpf ng"i tkr. "gngevtqpke" r tqvgevkqp. "cr r necvkqp"hwpevkqpcnkv{ "cpf "kpvgthceg. "uetggp"i nctg. "cpf "ecnkdtcvkqp"r tqegf wtguO Ko r tqxgo gpvu"y cv'wugtu'uckf "y gtg"c"j ki j "r tkqtkv{ "kpenvf gf "y g"f getgcugf "y gki j v'hqt "gcukgt "wug" cpf "r qtvcdktkv{. "c"dgwgt "cr r necvkqp"wugt "kpvgthceg. "uko r ngt "cpf "o qtg"ghigevkxg"ecnkdtcvkqp" r tqegf wtg. "ko r tqxgf "gti qpqo keu. "uvtcr u"cetquu"y g"cto "vq"o cng"y g"f gxkeg"gcukgt "vq"j qnf." kpetgcugf "f wtcdktkv{. "cpf "ncti gt"y j ggni'y kj "dgwgt"i tkr 0Wugtu"cnq"tgs wguvgf "c"uwo o ct{"r ci g"kp" y g"cr r necvkqp. "uvej "y cv"f cvc"y qwf "dg"gcukgt"vq"xkgy "cpf "kpvgtrtgv0

Uqo g'uwi i guvgf 'ko r tqxgo gpwi'htqo 'y g'hqewu'i tqwr 'y gtg<o qtg'engct'kputwevkqpu'kp'y g'' cr r nkecvkqp''cdqwi'j qy 'vq''wug'y g''EKU'f gxkeg."c''uko r ngt"cpf ''o qtg''wpkhkgf 'f guki p."c''uy kxgn'j cpf ng." cpf ''y g''cdktk{ ''vq''nqeni'y g'f gxkeg''vq''uvc{ 'kp''c''uvcki j v'nkpg0'kp''cf f kkqp."c''o qtg''uvcdng''dcwgt{ '' eqo r ctvo gpv'y cu''uwi i guvgf ."cu''y g''ewttgpv'qpg''qhxgp''o qxgf 'f wtkpi ''wug0'Cnq. ''wugtu'y qwf 'nkng''q'' dg''cdng''vq''tceni'y g''eqo r ngvkqp''uvcwu''qh'tco r u''vq''f gvgto kpg'y j kej 'j cxg''dggp''kpur gevgf ''cpf '' y j kej ''uvkni'tgs wttg''kpur gevkqp0'Wugtu''cnq''y qwi j v'y cv'y g''cr r nkecvkqp''o c{''dgpghkv'htqo ''c''uvgr/'' d{/uvgr ''r tqeguu''nc{qwv''tcy gt''y cp''tgs wtklpi ''wugtu''vq''ej qqug''gcej ''o gcuwtgo gpv'r ctco gvgt'' y go ugnxgu0Dcugf ''qp''y ku'hggf dcem''y g''r mp''q''o cmg'ko r tqxgo gpvu''q''y g''cr r nkecvkqp''kpvgthceg." ugpuqt"ecnkdtcvkqp"r tqegf wtg."cpf "o gej cpkecn'grgo gpvu'nkng"vj g'j cpf rg."dcwgt { "eqo r ctvo gpv."cpf " dcugr rcvg0

## Nko kscvkąpu

Vj g'EKU'f gxkeg''eqpvtkdwgf 'i tgcvn{ ''q''y g'r wtr qug''qh'y g'r tqlgev0'Vj g''wugt/htkgpf n{ " cr r nkecwqp''u{uvgo "cpf ''nki j w gki j v'o qf gn'o cf g''y g''o gcuwtgo gpv'r tqeguu''gti qpqo kecm{ "gcukgt" hqt'y g''uwdlgew0'Y kj 'o cp{ ''r qukkxg''cur gewi''q''y g'f gxkeg. 'c''hgy ''ho kcvkqpu''ctg''cf f tguugf ''cpf '' eqpukf gtgf 'hqt''y g''pgzv'tgf guki p''r j cug0'O cpwcn'o gcuwtgo gpwi'eqpf wevgf ''d{ ''y g''uwdlgewi'y gtg'' uki pkhecpvn{ ''f khigtgpv'htqo ''RgppF QV''o gcuwtgo gpw0'J qy gxgt.''y ku'o c{ ''dg''c' tguwn/'qh''qwf cvgf '' o gcuwtgo gpwi'd{ ''RgppF QV''qt ''kpceewtcvg''o gcuwtgo gpvd'{ ''y g''yguv'uwdlgew0'Vj g''yguv'uwdlgewi'' y gtg''pqv'r tqhguukqpcn'eqpvtcevqtu''qt ''uwtxg{ qtu'y kj ''gzr gtkgpeg''kp''CF C/eqo r nkcpv'ewtd'tco r u.'' cpf ''y ku'o c{ ''gzr nckp''y j { ''y gkt''o gcuwtgo gpvu'f q''pqv'ci tgg'y kj ''y qug''qh''r tqhguukqpcn0

Vjgtg"ygtg"cnuq"ugxgtcn"tguvtkevkqpu"fwtkpi "yg"vguvkpi "rjcug"yjcv"chhgevgf "yg"tguwnu0Ncem" qh'wpkhqto kx{ "kp''y g''y c{"ewtdu''y gtg''o gcuwtgf "kpvtqf wegf "o qtg''j wo cp"gttqt."cpf ''y ku''uwtgn{" kor cevgf "vjg"tgrkcdkrkv{ "qh"ogcuvtgogpvu0Kp"cffkkqp."tcoru"vpfgtiq"gtqukqp"cpf"oc{"ygct"qxgt" vko g"cu"yj g{ "ctg"uxt wemld{ "xgj kergu. "gpeqwpvgt litgs wgpv"eqpvcev"y kj "uj qr r kpi "ect vu. "f kut wr vgf "d{ " y g'i tqy y "qh'tgg"tqqvu."cpf "chigevgf "d{ "qy gt "ecwugu0RgppF QVøu"o gcuvtgo gpvu"y gtg" eqpf wevgf "kp"422: .'y j kej "o c{"j cxg"dggp"co r ng" ko g"hqt "ko r cevhwnlej cpi gu"vq"qeewt "vq" y g"ewtd" tco r 'untwewntg0'Hwtyi gt. "cmlo gcuwtgo gpvu'y gtg''cmgp''d { 'Wpkxgtukv{ "qh'Rkvudwti j 'uwwf gpvu'y kyi " nkwrg'vq"pq"dcemi tqwpf "kp"ewtd"tco r "eqpuvtwevkqp0'Y kj "xgt { "o kpko cn'mpqy ngf i g"kp"o gcuwtkpi " ewtd"tcoru"o cpwcm{"d{"tcfkkqpcn"o gcpu."y gkt"o gcuwtgf "f cvc"o c{"f khgt"htqo "RgppF QV"f cvc" o gcuwtgf "d{ "qhhkekcn'eqpvtcevqtu'hqt 'y ku'tgcuqp0Qp"c"tgncvgf "pqvg. 'y gtg'y cu'c"urqy "rgctpkpi " ewtxg'y j gp'wukpi 'y g'EKU."cpf 'gcej 'wugt 'qpn{ 'wugf 'y g'f gxkeg'hqt'c'uo cm'co qwpv'qh'wo g=" y gtghqtg. 'wugtu'y gtg'pqv'gpvktgn( 'hco krkct'y kj 'j g'f gxkeg'wr qp'ku'wug'kp'j g'vtkcn'cpf 'j ku'eqwrf " j cxg"ko r cevgf "vj gkt"o gcuwtgo gpv'ceewtce {0'Qp"vj g"cr r nkecvkqp"ukf g. "eqpukuvgpv'ecnkdtcvkqp"qh'vj g" f gxkeg'y cu'o cpf cvgf 'd{ 'y g'r tqvqeqn'cpf 'kpceewtcvg''qt 'kpeqttgev'ecrkdtcvkqpu'eqwrf 'j cxg'' ko r cevgf "kpf kxkf wcn'o gcuwtgo gpw0F wg'\q'\ko g'eqpuvtckpvu. "wugtu" y gtg"qpn{ "cdng" \q"echdtcvg" y g" f gxkeg"qpeg"dghqtg"gcej "o gcuwtgo gpv'tkcn"y j kej "eqwrf "j cxg"kpxtqf wegf "xctkcvkqp"kpvq"vj g"f cvc0

## Korngogpvcvkqp'Rncp

Vq'ko r ngo gpv'y g'EKUETF 'u{uvgo .'y g'r j {ukecn'cpf 'uqhvy ctg'f guki p'u j qwf 'dg'' eqpukf gtgf 'kp'y g'qxgtcm'eqpvgzv'qh'RgppF QVøu'kpvgtpcn'ewtd'tco r 'kpur gevkqp'r tqeguu.'cu'y gm'cu'' j qy 'y ku'u{uvgo 'kpvgtcewi'y kj 'eqpvtcevqtu'cpf 'ewtd'tco r 'f guki pgtu0Vj g'EKU'r tqvqv{r g.'cu'y gm'' cu'y g''ceeqo r cp{kpi 'vcdngv'cpf 'o ketqeqpvtqngt'uqhvy ctg.''ctg'hwn{ 'hvpevkqpcn'cpf 'y gm''' f qewo gpvgf 0Vj gug'vqnu'ecp'dg'tgr nkecvgf 'cpf 'f kutkdwgf 'vq'ewtd'tco r 'kpur gevqtu'y kj 'tgncvkxg'' gcug0Vj g'EKU'r tqvqv{r g.'j qy gxgt.''y cu'pqv'gpvktgn{ 'wughwn'vq'y g''ewtd'tco r 'f guki pgtu'y g'' kpvgtxkgy gf 'hqt'y gkt'ur gekhke'f guki p'r tqeguu'cpf 'ku'o quv'xcnvcdng'kp'y g'kpur gevkqp'r j cug0'Vq'' cf f tguu'y g'f guki p'r j cug'kp'y g'hvwxtg.''y g''ETF 'r tqeguu'ctej kgewtg''eqpegr wcn{ gu'y g''q gtcvkqp'' qh''c'ewtd'tco r 'f guki p''qqn'cpf ''qwrkpgu'y g''pgeguuct { 'uvgr u'cpf ''dguv'r cy ''hqty ctf ''hqt'ku''gxgpwcn'' etgcvkqp'\*ugg'Cr r gpf kz'I 'hqt'f gvckn+0/Qxgtcm 'y g''EKU'r tqvqv{r gu'cpf ''ETF ''r tqeguu'ctej kgewtg'' ctg'tgcf { '\q'dgi kp'y gkt 'ko r ngo gpvcvkqp'kpvq'y g''ewtd'tco r 'kpur gevkqp''cpf 'f guki p'r tqeguu'

# Eqpenvulqp

Ko'uwo o ct {.''y g'f gxgnqr o gpv'qh''y g'Ewtd'Tcor 'F guki p'\*ETF +'cpf 'Ewtd'Tcor

Kour gevlqp''u{uvgo '\*EKU+'htqo 'hktuv'i gpgtcvkqp''r tqvqv{r g'vq''c''o qtg''tqdwuv'cpf ''eqo r ngvg'hwpevlqp'' cpf ''gti qpqo ke''u{uvgo 'y cu''uweeguuhwn'dcugf ''qp''y g''gxcnxcvkqpu''cpf ''kpvgtxkgy u''eqpf wevgf 0'Vj g'' EKU'f gxkeg''j cu''y g''r qvgpvlcn'vq''f getgcug''y g''vko g''tgs wktgf 'hqt''ewtd''tco r ''kpur gevlqp'' o gcuwtgo gpvu.''cu''y gml'cu''vq''uvtgco nkpg''y g''ewtd''tco r 'f cvc''eqngevlqp.''uvqtci g.''cpf ''wug''qxgt''vko g0' Vj tqwi j ''kgtcvkxg''f guki p''cpf ''eqpukuvgpv'kpxqnxgo gpv'qh''ng{ ''uvcngj qrf gtu''kp''y g''ewtd''tco r ''f guki p'' cpf ''kpur gevlqp''r tqeguu.''y g''ewtd''tco r ''kpur gevlqp''u{uvgo ''j cu''r qvgpvlcn'vq''fcektkcvg''y g''kpetgcug''kp'' ceeguuldkhks{ ''qh'y g''dwkny'gpxktqpo gpv'y tqwi j ''uko r nkh{kpi ''cpf ''ewtd''tco r ''kpur gevlqp''r tqeguu0

# T gligt gpegu

- \*3+" O eEnclp. "Nkpf c. "gv'cn) oT guvcwt cpv'Y j ggnej ckt 'Ceeguukdkrkv{ 00'Co gt kecp 'Iqwtpcn'qh' Qeewr cvkqpcn'Vj gtcr {.'Co gt kecp 'Qeewr cvkqpcn'Vj gtcr { 'Cuuqekcvkqp.'3'Lvn{ '3; ; 5." clqv&qvcQti lct vkerg&ur z Act vkergkf ? 3: 967; 3
- \*4+" O eEnclp. 'Nkpf c. "cpf 'Ej tkuv{ "Vqf f 0õHqqf 'Uvqtg'Ceeguuldkrkv{ 0ö'Co gtkecp'Iqwtpcn'qh" Qeewr cvkqpcn'Vj gtcr {.'Co gtkecp'Qeewr cvkqpcn'Vj gtcr { 'Cuuqekcvkqp.'3'Lwpg'3; ; 2." clqv&qvcQti lctvkerg&ur z Actvkergkf ? 3: 98; 760
- \*5+" Cj p. 'J 'E. 'gv'cn0ôCtej kgewtcn'Dcttkgtu'\q'Rgtuqpu'y kj 'F kucdktkkgu'kp'Dwukpguugu'kp''cp'' Wtdcp'Eqo o wpkx{06'Ewttgpv'P gwtqnqi { 'cpf 'P gwtquekgpeg'T gr qtw0'WU0'P cvkqpcn'' Nkdtct { ''qh''O gf kekpg. '<u>y y y 0pedk0pm 0pkj 0 qx lr wdo gf 1: 3; 7483</u>0
- \*6+" I tcdqku. 'G'Y . 'gv'cn0öCeeguukdknk{ ''qh'Rtko ct { 'Ectg'Rj { ukekcpu)'Qhhkegu'hqt 'Rgqr m'y kj " F kucdknkkgu0Cp'Cpcn{ uku'qh'Eqo r nkcpeg'y kj ''y g'Co gtkecpu'Y kj 'F kucdknkkgu'Cev0ö" Ewttgpv'P gwtqnqi { ''cpf 'P gwtquekgpeg'Tgr qt u0''WU0'P cvkqpcn'Nkdtct { ''qh'O gf kekpg.'' y y y (bedkfpm (bkj 0 qx lr wdo gf 1; ; 542930)
- \*7+" Z kcpi .'J .'gv'cn/Ewttgpv'P gwtqnqi { 'cpf 'P gwtquekgpeg'T gr qtw0'WU0P cvkqpcn'Nkdtct { 'qh' O gf kekpg. 'Hgd04228. '<u>y y y (pedklpm (pkj () qx lr o e lctvkengulRO E4785729</u>10
- \*8+"TN."Matd{0öF gr ctvo gpv'qh'O gf lekpg."F cnj qwukg'"Wpkxgtukv{."J cnkhcz."P qxc"Ueqvkc."Ecpcf c0ö" Cff kevkqp"( "J gcnyj."UvcvRgctnu"Rwdrkuj kpi."<u>gwtqr gr o e0qti lcduvtcevlo gf 145: 559:</u>0
- \*9+" Mkej kp. 'Tqd. 'gv'cn0õQp''y g'O cti kpu< F kucdngf 'Rgqr ngu'Gzr gtkgpeg''qh'Go r nq {o gpv'kp'' F qpgi cn 'Y guv'Kgncpf & F kucdktk{ '( 'Uqekgv{.'xqn035.''pq07.'3; ;:.'r r 09: 76: 280'' f qk32082: 212; 8: 97; ;: 487370
- \*: +" Mcugo uwr r cmqtp. 'Rk{ cy cp. 'gv'cn/bowpf gtuvcpf kpi 'Tqwg'Ej qkegu'hqt 'Y j ggnej ckt" P cxki cvkqp/bo'F kucdktw{ 'cpf 'Tgj cdktkcvkqp<'Cuukuvkxg'Vgej pqnqi {.'xqn/32.'pq0'5.'4236." r r 0'3; : 64320'f qk/320532; 1396: 5329042360; : 3820
- \*; +" \*QFQV+."VOI 0\*4238+0F guki p"qh"CFC"Ewtd"Tco ru0Tgvtkgxgf "htqo <u>j wru<ly y y 6fqv0vcy0qj 0wuFkxkukqpuRreppkpi INqecrRtqi tco uINVCRICFCaEqwtugaO cv</u>" gtkcnaPqxgo dgta4238IF guki p"qh"CFC"Ewtd"Tco ru"/"42380 f h

- \*32+" Dgpghkelcn'F guki pu. "Kpe0'Lwrkg'D0'Mktuej dcwo. "Rgvgt "Y 0'C z gnuqp. "Rcvtkelc'G0'Nqpi o wkt." Mcyj nggp'O 0'O kur ci gn'Lwrkg'C0'Uvgkp. "F 0'C0[\_0\*4223+0'F guki pkpi "Ukf gy cmu'cpf "Vtcku" hqt 'Ceeguu'Rctv'KKqh"K&Dguv'Rtcevkegu'F guki p'I\_wkf g0'T gvtkgxgf "htqo " j wr u<1y y 0 hj y c0f qv0 qx 1gpxktqpo\_gpvldke { engar gf guvtkcp lr wdrkecvkqpulukf gy cm4 leqpvg" pv0eho
- \*33+" WUOCtej kgewtcn'cpf "Vtcpur qtvcvkqp"Dcttkgtu'Eqo r nkcpeg"Dqctf "\*Ceeguu'Dqctf +0\*3; ; 2+0' Co gtkecpu'y kj "F kucdkrkkgu'Cev\*\*CFC+'Ceeguukdkrkv{ "I wkf grkpgu'hqt"Dwkrf kpi u'cpf " Hcekrkkgu0T gvtkgxgf "htqo j wr <1y y @ceeguu/dqctf @ qx lcwcej o gpwlctvkerg13572 lcf cci @ f h</p>
- \*34+" Wpksgf "Ucvgu'F gr ctvo gpv'qh'Ci tkewnwtg0\*3; ; 6+0Gphqtego gpv'qh'P qpf kuetko kpcvkqp"qp"yj g" Dcuku'qh'J cpf kecr 'kp"Rtqi tco u'qt 'Cevkxkgu'Eqpf wevgf "d{ 'yj g"Wpkgf "Ucvgu'F gr ctvo gpv" qh'Ci tkewnwtg0Tgvtkgxgf 'htqo 'j wr u<br/>dly y y 0rcy 0rgtpgrn0gf whelt lvgz v19 137g0872
- \*35+"F gr ctvo gpv'qh'Vtcpur qtvcvkqp0<sup>%</sup>4228+0Co gtkecpu'y kj 'F kucdkrkvkgu'Cev'\*CFC+'Uvcpf ctfu''
  hqt 'Vtcpur qtvcvkqp'Hcekrkvkgu0Tgvtkgxgf 'htqo "
  j wr <1ly y y @ceeguu/dqctf0 qx lcvcej o gpvulctvkerg136; : 1CFCfqvvcpf ctfu0 fh</pre>
- \*36+" F gr ct vo gpv'qh'Lwurkeg0\*4229+0°CFC'Ceeguukdkrk{ 'hqto u'cpf 'kpurtwerkqpu'Crr gpf kegu'3"cpf " 40Tgvtkgxgf 'htqo '<u>j wr <1y y 0 cf c0 qx lr ecvqqmkvlkptqcr r 3cpf 40 f h</u>
- \*37+" Chicktu. 'Cuukuxcpv'Ugetgvct { 'hqt 'Rvdrke0öU{ uvgo 'Wucdkrkx{ 'Uecrg'\*UWU+06''<u>Wucdkrkx{ 0 qx</u>." F gr ctvo gpv'qh'J gcnj 'cpf 'J wo cp''Ugtxkegu.'8''Ugr v04235." <u>y y y 0wucdkrkx{ 0 qx lj qy /vq/cpf/vqqnulo gy qf ulu{ uvgo /wucdkrkx{/uecrg0 vo r0</u>
- \*38+" õF gvgto kpkpi "Y j cv"Kpf kxkf vcn"UWU"Ueqtgu"O gcp<Cff kpi "cp"Cf lgevkxg"Tcvkpi "Uecng@"LWU." vzr clqwtpcnQti lf gvgto kpkpi /y j cv/kpf kxkf vcn'uvu/ueqtgu/o gcp/cff kpi /" cp/cf lgevkxg/tcvkpi /uecng10
- \*39+" Ucpvqp. 'P gxkmg0J wo cp"Hcevqtu'kp"Eqpuwo gt "Rtqf wew0Vc { mt" ("Htcpeku."42260
- \*3: +" O kf f nguy qtyj .'O cw.''gv'cn0õJ qy '\q'Ugngev'yj g'Eqttgev'Gti qpqo ke'Tkum'Cuuguuo gpv'Vqqn0ö'' Gti qRnxu.''39'Lxn{ ''4237.''gti q/<u>r nxu@qo lugngev/gti qpqo ke/tkum/cuuguuo gpv/vqqn</u>0

## Crrgpf kz'C

## F grkxgtcdrg'3<Tgxkgy "qh'ý g'Ewtd/Tcor r "Kour gevkqp"U{uvgo "\*EKU+

#### U{ uvgo 'F guli p'Qxgt xlgy

Vj g'EKU'u{uvgo 'ku'c'eqo dkpcvkqp''qh''cp'Cpf tqkf ''dcugf 'P gz wu'vcdrgv.''o wnkr rg''ugpuqtu'vq'' o gcuwtg'f kuvcpegu.''cpf ''cp''Ctf wkpq''Wpq''o ketqeqpvtqrgt.''o qwpvgf ''qp''c''O ketq''Mkendqctf '' Eqo r cev'eqo o gtekcm{ ''cxckrcdrg''5/y j ggrgf ''ueqqvgt''\*Hki wtg'3+0Vj g''tco r 'ku''o gcuwtgf ''d{ ''o qxkpi '' y g''ueqqvgt''qxgt''xctkqwu''tgi kqpu''qh''y g''tco r .''cu'kf gpvkhkgf ''d{ ''y g''EU/6623'hqto 0'Vj g'' o ketqeqpvtqrgt ''eqpvtqrui'y g''ugpuqtu''cu''y gm'cu'tgegkxgu''cpf ''tcpuo ku'f cvc''q''y g''Cpf tqkf '' cr r nkecvkqp''\*Hki wtgu'4/6+0'Vj g''o gcuwtgo gpwi'vcrngp''d{ ''y g'kpf kxkf wcn'y km'cwqo cvkecm{ ''cr r gct'' y kj kp''y g''Cpf tqkf ''cr r nkecvkqp''\*Hki wtgu'7/9+0





Hki wtg"4<'Uqpct"Ugpuqt0'Vj ku"ugpuqt" o gcuwtgu"xgtvkecn'f kncpegu0'Vq" eqttgevn{"o gcuwtg"ewtd"j gki j v."yj g" kpf kxkf wcn'r qukskqpu"ks"qxgt"yj g"tqcf "cpf " vcngu'yj g"o gcuwtgo gpv0'Vj g{"yj gp" r qukskqp"ks"qxgt"yj g"ewtd"cpf "vcng"yj g" o gcuwtgo gpv0'Vj g'f khigtgpeg"dgw ggp" yj g"yy q"o gcuwtgo gpvu"ku"cwqo cvkecm{" ecrewncvgf "cpf "cr r gctu"y kyj kp"yj g"



Hki wtg'5<'Gpeqf gt0'Vj ku'ugpuqt" o gcuwtgu'j qtk qpvcn'f kuvcpegu0'Y j gp" y g'ueqqygt'ku'r wuj gf .'cp"gpeqf gt" o gcuwtgu'yj g'pwo dgt"qh'tqvcvkqpu'qh'yj g" y j ggn0'Vj g'f kuvcpeg'ku'cwvqo cvkecm{" ecnewrcvgf "dcugf "qp''yj g"ektewo hgtgpeg" qh''y g''y j ggn'cpf "cr r gctu'y ky kp''yj g" Cpf tqkf "cr r nkecvkqp0



Hki wtg"6<'Ceeggtqo gvgt0'Vj ku'ugpuqt" o gcuwtgu'ej cpi g"kp'i tcf g0'Vq"eqttgevn{" o gcuwtg"ewtd'i tcf g. "yj g"kpf kxkf wcn' r qukskqpu'yj g"ueqqvgt"qp"c"hrcv'uwthceg" cpf "vcngu"c"o gcuwtgo gpv0'Vj g" kpf kxkf wcn'yj gp'r qukskqpu'yj g"ueqqvgt"qp" yj g"f guktgf "uwthceg"cpf "yj g"vcdngvøu'dwkn/" kp"ceegngtqo gvgt"tgeqtf u'yj g"cpi ng0

L 0				930 V
📬 Site Info				
Site Title	J			
Date of Investigation:	07-18-2017			
Field Investigators 1:				
Field Investigators 2:				
Engineering District: County:	01 Crawford			
Municipality:			1	
Get Current Location			Store Data	
Site Coordinates:	40.4568927	-79.9161547		
9000	~	0		



Hki wtg'7<'Ukg''Kphqto cvkqp<'Vj ku'r ci g''qh'' y g''cr r nlecvkqp''cmqy u'y g''wugt''vq''kpr w'' f cvg. 'r gtuqppgn''cpf ''nqecvkqp''qh''y g''ewtd'' tco r ''kpur gevkqp0

Hki wtg'8<Tcor "Kphqto cvkqp<"Vj ku'r ci g'qh" y g''crr necvkqp''cmqy u''y g''wugt''\q''kpr w'' ej ctcevgtknvkeu''qh''y g''ewtd''tcor ''dgkpi '' kpur gevgf 0



Hki wtg'9<Tcor 'O gcuwtgo gpuk<Vj ku'r ci g'qh'y g'' cr r rkeckqp"cmqy u'y g'wugt '\q'ugrgev'y g'\{r g'qh'ewtd'' tcor ''y g{ "ctg'kpur ge\xpi 'kp'y g''wr r gt'tki j vj cpf '' eqtpgt'f tqr f qy p''ku\OCf f kkqpcm{.'k\'r tqxkf gu'y g'' wugt'y kj ''y g'f kci tco ''qh'gcej ''ewtd'tcor r 'hqwpf ''kp'y g'' EU/6623'hqto O'Vj g''wugt''ecp''ecrkdtcvg''y g''ugpuqtu'' dghqtg''cmkpi ''o gcuwtgo gpwO'P gzv.''y g{ ''ecp''ugrgev'' y g'hkgrf 'tgcf { '\q'dg''o gcuwtgf ''cpf ''wug'y g''uctv'cpf '' gpf ''o gcuwtgo gpw0' ku'wugf ''q'ucxg'y g'' o gcuwtgo gpv0

## O gyj qf u

## F guli p'T gxlgy 'T guwnu

Vj g'f guki p'tgxkgy 'tguwnu'ctg''dtqngp''wr 'kpvq''yj g''yj tgg'tgur gevkxg''ecvgi qtkgu<'wucdkrkx{." f wtcdkrkx{."cpf 'f cvc''eqngevkqp''cpf 'kpvgi tkx{0Gcej 'ugevkqp''htuv'f guetkdgu''yj g''hkpf kpi u''qh''y g'' tgxkgy ''eqpf wevgf ''cpf ''yj g''kuuwgu'yj kej ''pggf ''q''dg''cff tguugf ''kp''qtf gt ''q''cf cr v'yj g''u{uvgo '' crrtqrtkcvgn{0C''hkuv'qh''rtkqtkk{gf ''kortqxgo gpvu''hqmqy u'yj g''f guetkrvkqp''qh''hkpf kpi u.''vq'' tgeqo o gpf ''j qy ''yj qug'kuuwgu'ecp''dg''cff tguugf 'y kj ''f guki p''ej cpi gu0

## Wicdkrkv{

Y kj "tgi ctf u'\q''y g''wwcdktk{ "qh''y g''f gxleg''kugth ''y g''uk g''cpf ''uj cr g''qh''y g''f gxleg''r qugf " ugxgtcn'o cpgwxgtcdktk{ ''kuwgu0Cf f kkqpcm{. ''xqnwpvggtu''hqt ''ygwkpi ''kf gpvkhgf ''y g''wugt ''kpvgthceg''cu'' cp''ctgc''qh''ht wutcvkqp''y cv'y qwf ''kpj kdk''y gkt''cdktk{ ''\q''uko r n{ ''cf qr v'y g''EKU''kpvq''r tcevkeg0

# Kortqxgo gpvi≺

30' Tgf weg''y g''qxgt''ult g. 'r ctvlewnctn{ ''ngpi y . ''qh''y g''f gxleg

c0'Chigt ''wugt ''gukpi . ''kv'y cu''uvcygf ''y cv''y g''f gxkeg''ku''f khlewn/'vq''o cpgwxgt ''cpf ''qr gtcyg'' kp''uo cmgt ''ur cegu''cpf ''wtpu. 'hqtekpi ''yguygtu''q''r keni'wr ''y g''ueqqygt ''cpf 'tgqtkgpv'y g'' f gxkeg''kp''y cv''o cppgt0'Vj ku'kuuwg''ku''ecwugf ''d{ ''ku''ngpi y ''kp''eqo dkpcvkqp''y kj ''y g'' hkzgf ''czng''hqt''y g'' qtk qpvcn'f kuvcpeg''o gcuwtgo gpv''ugpuqt0'C ''ueqqygt ''y cu'' qtki kpcm{ ''ej qugp''cu''y g''dcug''qh''y g'f gxkeg''cuuwo kpi ''wugtu'y qwf ''r wuj ''cpf '' r qvgpvkcm{ ''tkf g''y g''f gxkeg''f wtkpi ''f cvc''eqmgevkqp. ''dw'f wtkpi ''yguvgtu''cny c{ u'' tgxgcngf ''y cv'y cu''pqv''y g''kf gcn'y c{ ''q''cmg''o gcuwtgo gpvu0'Vj g''guvgtu''cny c{ u'' y cmgf ''dgi kpf ''y g''f gxkeg''qt ''q' y g''ukf g''t {kpi ''q''uvcdkkt g'kv'f wtkpi ''f cvc''eqmgevkqp0' Vj g{ ''dgnkgxgf ''kv'y cu''qq''dwm{ ''cpf ''pqv'y g''kf gcn'eqphki wtcvkqp''hqt'kwi'r wtr qug0 wac'hi g''y di i y'ab'hi g''f gxleg

40' Tgf weg''y g'y gki j v'qh''y g''f gxleg

c0' Vj g'y gki j v'qh'y g'f gxkeg'y cu'c'ho kkpi 'hœvqt'hqt'vguvgtu'dgecvug'y g{ 'j cxg'vq'' eqpuvcpvn{ 'r keni'wr 'y g'f gxkeg0'Qxgt"cp"gzvgpf gf 'r gtkqf 'qh'vko g.'y g'y gki j v'' dgeco g'h wuxtcvkpi .'cu'y gm'cu'c'eqpegtp'hqt'vtcpur qtvcvkqp'r wtr qugu0

d0' Vj g'y gki j v'qh'y g'f gxkeg'uj qwrf 'dg'ngr v'wpf gt '7'r qwpf u'\q'gpuwtg''qr vko cn'wuci g0

- 50' Kortqxg''y g''wugt''kpygthceg''y o cmg'o qtg''kpwkkkxg''hqt''wugtu
  - c0' KVy cu'pqvgf ''y cv'kpf kxkf wcnu'j cf ''c''f khhkewn/'vko g''uy kej kpi ''dgw ggp''r ci gu'y kyj kp'' y g''cr r '\*Hki wtg'': +0

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Hki wtg": <P cxki cvkqp"Dct<Vj g"vugt"o wuv'uy krg"vq'yj g"tki j v'kp"vj g"wrrgt"nghv'eqtpgt" qh'yj g"crrnkecvkqp"vq"pcxki cvg"dgw ggp"rci gu0"Vj ku'y cu'f khkewnv'hqt"vugtu'vq'hki wtg" qwi'y kj qwi'kpuvtwevkqp0

- d0' Wugtu'qhigp''gtcugf ''y gkt''r tgxkqwu''o gcuwtgo gpvu''dgecwug''y g''ewtuqt''f qgu''pqv'' cwqo cvkecm{ ''o qxg''dgwy ggp''qr gp''hlgnf u0
- e0' Vj g'ng{u'cpf 'f kci tco u'ý tqwi j qwi'ý g''cr r 'f q''pqv'o qxg''y kj 'ý g''nqpi 'hkuv'qh'' tgs wktgf 'hkgrf u.'ý gtghqtg''wugtu''eqwrf ''pqv''eqpuvcpvn{ ''xkuvcn{ g''y g''o gcuwtgo gpv'' ý g{ ''y gtg''vcmkpi ''\*Hki wtg''; +0

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Ramp Info			1	n Ramp In	fo			1
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16				A:	in.		Clear All Fields	
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$\langle  $	E MAI			D:	%			
				E:	%		End Measurement	
A	$\langle \rangle$			F:	%			
	0			G:	%		Store Measurement	
				н:	%			
Longitudinal slo	pe in front of ramp:			l:	%			
Cross slope in fr	ront of remp:	Calibrate Sensor		J:	in.			
	%			К:	in.			
A:	in.	Clear All Fields		L:	in.			
В:	in.			M:	in.			
C:	%	Start Measurement		N:	in.			
D:	%			0:	in.			
E:	%	End Measurement		P:	in.			
F:	%			Q:	%			
G:	%	Store Measurement		R:	%			
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Hki wtg"; <'Ewtd'Tcor 'F kci tco <'Y j gp''y g''wugt''o qxgu'f qy p''y g''kuv'qh'' o gcuwtgo gpwu''q''cmg. ''y g{ ''ecp''pq''nqpi gt''xkuwcnk g''y g'f kci tco ''cdqxg0'Vj gtg''y gtg'' s wguvkqpu''cpf 'htwuvtcvkqpu''cu''q''y j kej ''o gcuwtgo gpv''eqttgur qpf gf ''q''y g'f khgtgpv'' ctgcu''qh''y g''ewtd''tcor 0

f 0' Gxgt { '\ko g''{qw'enlemi'qp''c'hlgrf .''y g'ng{dqctf 'y qwrf ''qr gp.''ecwulspi 'htwustcylqp'' y j krg''t { kpi ''\q''\cng''c'o gcuwtgo gpv'\*Hli wtg''32+0

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Longitudinal slop	e in front of ramp:	1 Ramp, 1 Orossing	
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q w 2	e <sup>s</sup> r <sup>4</sup> t <sup>5</sup> y	<sup>4</sup> u <sup>7</sup> i <sup>8</sup> o <sup>9</sup> p <sup>8</sup>	
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Hki wtg'32<'Mg{dqctf <'Y j gp"c'hkgrf 'y cu'ugrgevgf '\q'dgi kp"c"o gcuwtgo gpv.'y g" ng{dqctf 'y qwrf ''qr gp.'ko r gf kpi ''y g'xkukdktkv{ ''qh'y g'hkgrf u''qp''y g'uetggp0

g0' Wugtu'y cpvgf "c"pqvkhecvkqp"y j<br/> gp"cmlpgeguuct { "h<br/>gnf u'jcxg'dggp"eqor ngvgf 0

- 60' Kpenwf g'xkuwcn'ewg'y j gp'c'o gcuwtgo gpv'ku'dgkpi 'vcngp
  - c0'K/y cu'wpengct'y j gp''c''o gcuwtgo gpv'y cu'dgkpi 'vcmgp'y kj 'vj g'ugpuqtu.'y j kej 'o cf g'' eqo r ngvkqp''qh'ewtd'tco r ''cuuguuo gpv'vcmg''nqpi gt ''cpf 'y kj ''cf f kkqpcn'j gukcvkqp'' htqo ''vj g''kpf kxkf wcn'vguvkpi 0'Kpenwf kpi ''c''x kuwcn'ewg''vq ''kphqto ''wugtu'y j gp'' o gcuwtgo gpvu''ctg''dgkpi ''vcmgp''y kn'j gn ''ur ggf ''wr ''vj g''r tqeguu0
- 70' Kpenwf g''c''dtcmkpi ''o gej cpkuo ''qp''y g''f gxleg c0'Vj gtg''ctg''pq''dtcmgu''qp''y g''u{ uvgo .''y j kej ''ecwugf ''y g''f gxleg''vq''tqm'y j gp''pqv'dgkpi '' wugf ''kh''kv'y cu''pqv'ugewtgf 0'Wugtu''ygukpi ''y g''f gxkeg''hqwpf ''y cv''kv''y cu''f khhkewn/''q'' ugewtg''y g''f gxkeg'y j krg'y qtmkpi ''qp''y g''cr r ''uko wncpgqwun{0
- 80' Cwqo cvkecm{ 'ucxg'eqmgevgf 'f cvc
  - c0'Vj g''cr r 'f qgu''pqv''cwqo cvlecm{ 'ucxg''y j krg''cp''kpf kxkf wcn'ku''y qtmkpi .''uq''y gtg''y cu'' o wej ''eqpegtp''hqt''nqukpi 'f cvc''cmpi ''y g''y c{0
- 90' Kpenwf g"cm'pgeguuct { "kphqto cvkqp"htqo "RgppF QV"ewtd"tco r "kpur gevkqp"hqto "\*EU/6623+" c0Cr r "ku"ewttgpvn{ "o kuukpi <
  - k0' GEO U'%
    - kk0' Cni 'Fgnc'I tcfg'%
  - kkt0' Kpvgtugevkqp'tco r '%'qh'%
  - kx0' Rgf guvtkcp'r wuj 'dwwqpu'[ 1P
  - x0' Uccwu'ewtd'tco r u
  - xk0' Ctej kxg'tco r 'B 'meckqp'%
  - xkk0' Ngxgn'qh'ugtxkeg

#### Fwtcdkkv{

Y ký 'ý g''ewttgpv'r tqvqv{r g.'ý g''r qvgpvkcnlicknxtg''ctgcu''ctg'f wg'vq''kpcf gs wcvg'' kpvgteqppgevkqpu''dgw ggp''eqo r qpgpvu0'Vj g''5F ''r tkpvgf ''dcwgt { 'ugewtgo gpv'qp''y g''dqwqo ''qh''y g'' ueqqvgt 'ku''dtgcmkpi .''y j kej ''eqwf ''ecwug''y g''dcwgt { ''q''f kueqppgev'f wtkpi ''f cwc''eqmgevkqp0'' Cf f kkqpcm{ .''y gtg''ku''eqpukf gtcdmg'o qxgo gpv'kp''y g''uvggtkpi ''eqnvo p.''ecwukpi ''kpeqpukrvgpekgu''kp'' o gcuwtgo gpvu''cpf ''c''r qvgpvkcni'q'f tqr ''y g''vcdngv0'Vj g''cwcej o gpv'hqt''y g''uqpct''ugpuqt ''ku''nqug.'' ecwukpi ''wpy cpvgf ''o qxgo gpv'f wtkpi ''o gcuwtgo gpvu0'Vj g''j gki j v'cpf ''kpugewtg'o gy qf ''qh'' cwcej o gpv'ctg''hcknwtg''tkmm'f wtkpi ''wci g0'Vj g''gngevtqpkeu''cpf ''cdngv'pggf ''q''dg''dgwgt''r tqvgevgf ''qt'' tgukrvcpv'vq''y gv'eqpf kkqpu'kp''y g''kgrf 0'Ncuvn{ .''y g''wug''qh''tcr kf ''r tqvqv{r kpi ''q''r tqf weg''ugxgtcn'' nqy /s wcrkv{ ''utvewytcn'r kgegu''qh''y g''f gxkeg''ctg''r qvgpvkcnlicknytg''ctgcu0

## Kortqxgo gpu≺

- 30' Wug''cr r tqr tkcvg''o cvgtkcmi'hqt 'y gki j v.'v{r g''qh'wuci g. "cpf 'wuci g''eqpf kkqpu c0'Kp''qtf gt 'vq''gpuwtg''y g''uvtgpi y ''cpf 'f wtcdkkv{ ''qh''y g''f gxkeg.'j ki j gt ''s wcrkv{ ''5F '' r tkpvgtu''qt 'f khigtgpv'o cvgtkcmi'uj qwrf ''dg''wugf 0'Y g''cf f kkqpcm{ ''ctg''nqmkpi ''kpvq'' wukpi ''cnvo kpwo 'hqt''r ctwi'y cv'pggf ''vq''dg''rki j w gki j v'cpf ''j ki j gt ''uvtgpi y 0
- 40' Gpuwtg"ugewtg"eqppgevkqp"r qkpv'dgw ggp"yj g"j cpf ng"cpf "yj g"dcug"r ncvhqto
   c0C 'o clqtk/ "qh'yj g"y gki j v'qh'yj g"f gxkeg"cpf "tqvcvkqpcn'o qxgo gpv'y kn"qeewt"
   dgw ggp"yj g"j cpf ng"cpf "dcug"r ncvhqto 0F guki pkpi "c"eqppgevkqp"r qkpv'yj cv'ku'uvcdng."
   ugewtg."cpf 'o cf g"qh"j ki j /s wcnk/ "o cvgtkcnu'y km"j gr "gpuwtg"ncuvkpi "r gthqto cpeg0
- 50' Wug'y cvgt'tgukuvcpv'grgevtqpkeu'y j gtg'cxckrcdrg

- c0'Y j krg''y g"grgevtqpkeu'y km'dg"r tqvgevgf "d{ "c"eqxgt"qp"'y g"f gxkeg. "wukpi "r ctvu''y cv" ctg'y cvgt 'tgukuvcpv'y km'j grr "gpuwtg''y g{ "eqpvkpwg''y qtmkpi "r tqr gtn{ "cpf "ctg"pqv" f co ci gf 0
- 60' O qxg''r qy gt 'uwr r n{ '\q'o qtg''nqi kecn'r qukkqp"qp"f gxkeg c0O qxkpi '\j g''r qy gt 'uwr r n{ 'htqo '\wpf gtpgcyj '\j g'f gxkeg'y km'j gm ''gpuwtg'\j gtg''ctg'' pq'hcknwtgu'tgncvgf '\q'kwu'o gyj qf ''qh'ugewtgo gpv0
- 70' Mggr 'ugpuqtu'qp 'uco g'uwthceg''cu'hqy ''vq''y g'i tqwpf ''cu'r quukdng c0'D{ ''nggr kpi ''y g''gngevtqpkeu''vqi gyj gt ''cpf ''nqy ''vq''y g'i tqwpf . ''y g''ecp''j gn ''r tgxgpv''cp'' ctgc''qh'hcknwtg0

## Fcvc'Eqngevkqp'cpf 'Kpvgi tkv{

Y ký 'ý g''ewttgpv'r tqvqv{r g. 'ý gtg''ctg'r qvgpvkcnhcwnu'hqt''cm'ý tgg'o gý qf u''qh'f cvc'' eqngevkqp0Vj g''gpeqf gt'hqt'j qtk qpvchf kuvcpeg''o gcuwtgo gpvl'ku''pqv'ceewtcvgn{ 'vcmkpi '' o gcuwtgo gpvu0Vj g''i gctu''q''tcem'ý g'f kuvcpeg''ctg''ewttgpvn{ ''f kugpi ci kpi ''cpf ''umkr r kpi ''vgyj '' ecwukpi ''ý g''gpeqf gt ''q'hcmgn{ ''tgcf ''c''o gcuwtgo gpv0Vj g''i tcf g''o gcuwtgo gpvu''ctg''dgkpi ''vcmgp''d{ '' ý g''ceegngtqo gvgt ''y ký kp''ý g''vcdngv. 'y j kej 'ku''pqv'eqpukuvgpv'kp''ku''o gcuwtgo gpvu''pqt''ceewtcvg'' gpqwi j ''hqt''y ku''r wtr qug0Vj g''o qxgo gpv'qh''y g''vvggtkpi ''eqnvo p. 'y j gtg''y g''vcdngv'ku''o qwpvgf .''cmq'' r nc {u'kpvq''y g''kpeqpukuvgpv'i tcf g''o gcuwtgo gpvu0Ncuvn{ .''dgecwug''y g''uqpct''ugpuqt''ku''o qwpvgf ''j ki j '' cmpi ''y g''uvggtkpi ''eqnvo p. ''kv''eqwf ''dg''f gvgevkpi ''qy gt ''qdlgevu''kp''ku''r cy ''y j kng''t {kpi ''q''o gcuwtg'' ewtd''j gki j w0/Ki'ku''wpengct''y j cv'uwthcegu'kv'ku''r kenkpi ''wr 0

Kortqxgo gpu≺

- 30' Wug'c'\ko kpi 'dgn/kpuvgcf 'qh'5F 'r tkpvgf 'i gctu'hqt''y g'gpeqf gt
  - c0'Wukpi 'c''ko kpi "dgn/'\q''\tcenij qtk qp\cnif ku\cpeg'y kj ''y g"gpeqf gt'y knir tqxkf g'c'' dgwgt. 'urkr 'r tqqh'o gy qf ''qh'o gcuwtgo gp\0'Vj g''urqwi'hqt''y g''dgn/j grr 'r tgxgp\'k\'' htqo ''f kugpi ci kpi 0
- 40' Gzygtpcn'ceegngtqo gygt

c0'Wukpi "cp"gzvgtpcn'ceegngtqo gvgt"y km'cmqy "wu'j ki j gt"ceewtce{ "qh'ij g" o gcuwtgo gpvu0'Cf f kkqpcm{. "kv'y km'cmqy "wu'vq"o qwpv'ij g"ceegngtqo gvgt "f ktgevn{" qp"ij g"dcug'r ncvhqto ."y j kej "r ncegu'kv'r ctcmgn'vq"ij g"uwthceg"kv'ku"o gcuwtkpi 0

- 50' P gy .'tgr qukkqpgf 'uqpct'ugpuqt
  - c0D{ "o qxkpi "ý g"uqpet"ugpuqt"enqugt"vq"ý g"i tqwpf."meevgf "qp"ý g"deug"r nevhqto."y g" ecp"o kpko k g"ý g"r qvgpvkenhqt"r kemkpi "wr "gzvgtpen'qdlgevu"f wtkpi "f eve"eqnrgevkqp0' Cf f kkqpem{."r wtej cukpi "c"o qtg"ceewtevg"uqpet"ugpuqt"y km'j grr "ý g"eqpukuvgpe{ "qh" ý g"o geuwtgo gpvu0

## Crrgpf kz'D



Vcumi4<"Hkpcnk g'F guki p'F tcy kpi u'hqt"c"Dgvc"Rtqvqv(r g"qh'vj g"EKU

**Hki wt g'3**<Rtgxkqwu'xgtukqp"qh'y g'EKU0

## Wugt 'Vgumpi

Hxg'xqnxpvggtu'y j q'j cf 'pgxgt''wugf ''qt''y qtngf ''y kj ''y g'EKU'y gtg''tckpgf ''q''cuuguu''ewtd/ tco r u''d {'j cpf ''cpf ''wukpi ''y g'EKUV' j g''wugtu''pgzv'o gcuwtgf ''c''ewtd/tco r ''wukpi ''dqy ''o gy qf u ''y gp'' r tqxkf gf ''hggf dceni'tgi ctf kpi ''y g'EKU/au'wucdktk{ .'f wtcdktk{ .'cpf 'f cvc''eqngevkqp''cpf ''kpvgi tk{ 0' Wugtu''eqo o gpvgf ''cdqwi'y g''j gcx { ''y gki j v'cpf 'r qqt''o cpgwxgtcdktk{ ''qh''y g''f gxkeg0'Vj g''ngpi y '' cpf ''hzgf ''f ktgevkqpcn'y j ggni''hqtegf ''wugtu''q''tgr gcvgf n{ ''r kentwr ''cpf ''tgqtkgpv'y g''f gxkeg.''gur gekcm{ '' y j gp'kp''ki j v'ur cegu0Tgr gcvgf n{ ''r kentpi ''wr ''y g''ueqqvgt ''y cu''cnuq''ktkpi ''f wg''q''ku''y gki j v0' Wugtu''cnuq''tgr qtvgf 'f kthkewnkgu''y kj ''y g'Cpf tqkf ''cr r øu''wugt''kpythceg0'P cxki cvkpi ''dgw ggp''r ci gu'' y cu''vpkpwkkkg0'Wugtu''uqo gvlo gu''gtcugf ''y gkt''o gcuwtgo gpvu''d{ ''ceekf gpv0'Hki wtg''4''uj qy u'c'' uetggpuj qv'qhi'y g''r ci g''wugf ''y j kng''cntpi ''ewtd/tco r 'f ko gpukqpu0'Vcntpi ''o gcuwtgo gpvu''tgs vktgf '' wugtu''q'uetqm'y tqwi j ''c''nqpi ''kuv'qh''hkgrf u ''y wu''r neekpi ''y g''f kci tco ''qh'y g''ewtd/tco r ''qhh'uetggp.'' o cmtpi ''kv'f kthkewni'q''xkuwch{ g''y g''o gcuwtgo gpv'y g{ ''y gtg''cmtpi 0'Cp''qp/uetggp''ng{dqctf ''qr gpgf '' y j gp'uy kej kpi ''dgw ggp''o gcuwtgo gpv'hlgnf u.''y j kej ''htwurtcvgf ''wugtu0'Wugtu''cnuq''tgs wguvgf ''uqo g'' kpf kecvkqp''qh''y j gp''o gcuwtgo gpvu''y gtg''dgkpi ''vcngp.''c''pqvkhkecvkqp''hqt''y j gp''cm''pgeguuct{ ''htgnf u'' y gtg''eqo r ngvg.''cpf ''y cv''y g'f cvc''dg''ucxgf ''cwqo cvkecm{0



**Hi wt g'4**<Uetggpuj qv'qh'wugt "kpvgthceg''wugf 'hqt''cmkpi 'o gcuwtgo gpw0Gcej 'hkgff 'tgr tgugpw1c'f ko g'' qp"c''ewtd/tco r 0'Vj g''wugt 'o wuv'erkemi'qp"c'hkgff.''y gp"erkemi'::Uctv'O gcuwtgo gpvø'cpf '':Gpf 'O gcuwtg'' o gcuwtg''y g'f ko gpukqp0'C'f kci tco ''qh''c''ewtd/tco r ''y kj ''rcdgngf ''f ko gpukqpu''ku''r tqxkf gf.''dwi'y g''q'' qh''hkgff u'tgs wktgf ''y g''wugt ''q''uetqmi'f qy p''uq''y cv'y g''f kci tco ''y cu''qwi'qh''ukg.''o cmkpi ''kv'f khthewn/''q'' y j kej ''hkgff ''eqttgur qpf gf ''q''c''f ko gpukqp''qp''y g''ewtd/tco r 0

Vj g'f gxkegøu'f wtcdktw{ ''y cu'cnıq'r tqdıgo cvke0'Vj g'5F ''r tkpvgf ''ugewtgo gpv'cwcej kpi ''y g''dcwgt { ''q'' y g''wpf gtukf g''qh''y g''ueqqvgt ''y cu''r tqpg''q''dtgcnkpi 0'Vj g''uqpct''cwcej o gpv'y cu''cnıq''nqug. ''gcf kpi '' vq''wpy cpvgf ''o qxgo gpwi'y j krg''cnkpi ''j gki j v'o gcuwtgo gpvu0'O qxgo gpvu'kp''y g''uvggtkpi ''eqnvo p'' ngf ''q''kpeqpukuvgpekgu'kp''o gcuwtgo gpvu'cpf ''kpetgcugf ''y g''tkuni'qhi'f tqr r kpi ''y g''cdngv0'Vj g'' wpr tqvgevgf ''cdngv'cpf ''grgevtqpkeu''y gtg''cnuq''xwpgtcdng''q''y cygt''f co ci g0

Vj gtg'y gtg'ugxgtcn'r qvgpvkcn'ecwugu'qh'o gcuwtgo gpv'kpceewtce {0'Vj g'i gctu'eqppgevkpi 'vj g'o qvkqp'' qh'yj g'y j ggnu'vq'yj g''gpeqf gt''y gtg''r tqpg'vq''unkr r kpi .''ngcf kpi 'vq''kpeqttgev'j qtk qpvcn'f kncpeg'' o gcuwtgo gpvu0'Vj g''ceegngtqo gvgtu''wugf 'hqt''o gcuwtkpi 'i tcf g''y gtg''uqtgf 'kp''yj g''cdngv.''y j kej 'y cu'' o qwpvgf ''cv'vj g''vqr ''qh''yj g''uvggtkpi ''eqnwo p0'Cu''c'tguwnv.''y qddng''cpf ''f khigtgpegu'kp''yj g''cpi ng'' dgw ggp''yj g''ewtd''cpf ''yj g''dcug''qh''yj g''ueqqvgt''y gtg''co r nkhkgf ''wr ''yj g''uvggtkpi ''eqnwo p.''ngcf kpi ''q'' kpceewtcvg''i tcf g''o gcuwtgo gpvu0'Hwtyj gto qtg.''yj g''uqpct''y cu''o qwpvgf ''j ki j ''cnqpi ''yj g''uvggtkpi '' eqnwo p.''y j kej ''o cf g''kv'wpengct''cu''q''y j gyj gt''yj g''uqpct''y cu''o gcuwtkpi ''yj g''f kncpeg''q''yj g'' kpvgpf gf ''uwtficeg0



His wtg'5<Hwm{ "cuugo dngf "EKU

#### Fguli p'Ej cpi gu

Uvduvcpvkcn'o qf khecvkqpu'\q''y g''qxgtcm'uvtwewtg''qh''y g''EKU\*Hki wtg'5+'y gtg''o cf g''q'' tgf weg''y g''uk g''cpf ''y gki j v'\*ugg'O gej cpkecn'F guki p''cpf ''Hwpevkqpcnkv{ ''ugevkqp''hqt''o qtg''f gvckn+0' Vj g''EKU'ku''pqy ''kpvgpf gf ''q''dg''j grf ''kp''htqpv'qh''y g''wugt''hng''c''o gvcn'f gvgevqt0'Kpuvgcf ''qh''c''o gvcn'' ueqqvgt. ''y g''dcug''ku''eqo r qugf ''qh''c''y kp''uj ggv'qh''CDU'r ncuvke0'Vj g''uvggtkpi ''eqnvo p''ku''c'hki j  $\sqrt$ y gki j v'envo kpwo ''tqf 'y ky ''cp''cf lwuvcdng''ngpi y ''cpf ''ku''cvcej gf ''q''y g''dcug''r ncvg''d{''c''j kpi g. 'y wu'' cmqy kpi ''hqt''i tgcvgt''hngzkdktkv{.''o cpgwxgtcdktkv{.''cpf ''ceeqo o qf cvkqp''qh''c''xctkgv{ ''qh''wugt'' r tghgtgpegu0

Vj g'Cpf tqkf "Vcdrgv'j cu'dggp'tgr megf 'y kj "cp'kRcf 'O kpk "cpf 'CteI KJ'ku'dgkpi 'wugf 'kpuvgcf 'qh'' I qqi rg'o cr u'\q'uvqtg'cpf 'tgvtkgxg''nqcvkqp'f cvc0'Kpuvgcf 'qh'c'uetqrnkpi 'y tqwi j 'c''npi 'rkuv'qh'' hkgrf u. 'wugtu'pqy ''qwej ''cp'keqp''qp''y g'f kci tco ''qh'y g''ewtd'tco r ''q''vcng''cpf 'f kur m { '' o gcuvtgo gpwl\*'ugg''Uqhy ctg'F guki p''cpf ''U{uvgo ''Kpvgi tcvkqp''ugevkqp''hqt''o qtg'f gvcknl''cdqwl'y g'' lRcf ''uqhy ctg+0'Vj g'lRcf 'ku''cvcej gf ''q''y g''uvggtkpi ''eqnvo p''d{ ''cp''cf lwuvcdrg''cto .''cmy kpi ''y g'' wugt'\q''cf lwuv'y g''Rcf 'f kur m { ''q''y gkt''r tghgttgf ''nqevkqp''cpf ''cpi rg0

Vq'tgf weg'f wtcdktw{ ''r tqdrgo u.'y g''dcwgt { 'j cu''dggp''o qxgf ''cpf 'ku''pqy ''kpvgi tcvgf ''kpvq''c'' r tqvgevkxg''ecug''uwttqwpf kpi ''y g''kRcf 0'Vj g''o ketqeqpvtqngt''cpf ''cm''ugpuqtu''ctg''cwcej gf ''q''y g''dcug'' cpf ''f q''pqv'r tqvtwf g''qw0'Vj g''uqpct''f kncpeg''ugpuqt''ku''pqy ''cwcej gf ''q''y g''dcug''cpf ''ku''o wej ''enqugt'' q''y g'' tqvtwf g''qw0'Vj g''uqpct''f kncpeg''ugpuqt''ku''pqy ''cwcej gf ''q''y g''dcug''cpf ''ku''o wej ''enqugt'' q''y g'' tqvtwf g''qw0'Vj g''uqpct''f kncpeg''ugpuqt''ku''pqy ''cwcej gf ''q''y g''y tqpi ''uwthceg.''cu''y gn'' cu'tgf welpi ''o gcuwtgo gpv'kpeqpukrygpelgu''kpvtqf wegf ''d{ ''cvcej kpi ''y g''uqpct''q''c''nqug''uvgtkpi '' eqnvo p0'Vq'tgf weg''y g''r tqdrgo ''qhi'i gctu''unkr r kpi .''i gctu'y kni'pqy ''dg''r wtej cugf ''cpf ''j cxg''c'j ki j gt'' f gi tgg''qh''o cpwhcewtkpi ''r tgekukqp''y cp''y g''5F /'r tkpvgf ''i gctu''wugf 'kp''y g''r tgxkqwu''r tqvqv{r g0'Vj g'' ceegrgtqo gvgt''ku''pqy ''gzvgtpcni'q''y g''kRcf ''cpf ''ku''cvcej gf ''q''y g''dcug.''gnlo kpcvkpi ''y g''r tqdrgo ''qh'' y qddrg''dgkpi ''co r nkhgf ''cmpi ''y g''uggtkpi ''eqnvo p0

# Fgulip'Et løgt læ

Grgevt qp leu							
Et løgt kyp	Wpkau	Vcti gv'Ur ge	Ewttgpv' Urge				
Dcwgt { "ithig	j t0	@: D	320				
Gpeqf gt "f kuxcpeg"o gcuwtgo gpv"ceewtce{	kp	>"	>'3138				
Uqpct"f kucpeg"o gcuwtgo gpv'ceewtce{	kp	>'31:	31:				
Ceegngtqo gvgt "cpi ng"o gcuvetgo gpv'ceewtce{	f gi tggu	>'Ɓ	(B)				

Crr'Uqhyyctg'T	gs wikt goʻgp vu
Ugevkqp	Tgs what go gpv
O cr "Xkgy	<ul> <li>É' Vj g'o cr 'xkgy 'o wuv'f ghcwnv'uwej ''y cv'y g''wugtøu''ewttgpv'mecvkqp'ku''cv'' y g''egpygt0</li> <li>É' Vj g''wugt 'o wuv'dg''cdng''vq''hkngt ''y g'hgcwtgu''qp''f kur nc{ ''d{ ''ewtd''tco r '' v{r g. ''CF C ''eqo r nkcpeg. ''uvcwuu. ''cpf 'f cvg''ncuv'o qf khlgf 0</li> <li>É' C'o cr ''ngi gpf ''o wuv'dg''cxckncdng''vq''y g''wugt0</li> </ul>
O cr "Hgc wt gu	<ul> <li>É' Ewtd'tco r 'ecp''dg''etgcvgf ''cv''nqecvkqp''cr r gf ''qp''y g'kp/cr r 'o cr 0</li> <li>É' Wugt ''ecp''f grgvg''c'hgcwtg''htqo ''y g''o cr 'kp''y g''cr r 0</li> <li>É' Vj g''wugt ''ecp''ugrgev'cp''gzkuvkpi ''ewtd'tco r ''vq''gf kv''cwtkdwgu0</li> <li>É' Cm''gzkuvkpi ''cwtkdwgu'y kn'dg''xkgy cdrg''hqt ''y g''ugrgevgf ''ewtd''tco r 0</li> <li>É' Vj g''cr r 'o wuv'r tqxkf g''qr vkqpu''hqt ''eqp tqntkpi ''y j gp''urqr g''cpf ''f kuvcpeg'' o gcuwtgo gpwi'ctg''uctvgf ''cpf ''uvqr r gf 0</li> <li>É' Vj g''cr r ''o wuv''cmqy ''y g''wugt''vq''tgr gcv'c''o gcuwtgo gpv'kh'f guktgf 0</li> </ul>
Dnvgvqqyj " Ugtxkegu	<ul> <li>É' Vj g''cr r 'o wuv''cmqy ''y g''wugt ''vq''eqppgev''vq''cp{ 'EwtdO GV'f gxkeg''kp''y g'' xkekpkv{0</li> <li>É' Dnwgvqqy ''ugtxkegu''y km'dg''gpcdngf ''uwej ''y cv''y g''cr r ''ecp''tgegkxg''unqr g'' cpf 'f kncpeg''o gcuwtgo gpwi'htqo ''y g''EwtdO GV''f gxkeg0</li> </ul>
Eco gtc Ugtxkegu	<ul> <li>É' Vj g''wugt 'o wuv'dg''cdng''q''vcmg''r kewntgu''y kj kp''y g''cr r ''cpf ''ucxg''y go " hqt ''c''ur gekhkgf ''ewtd''tco r 0</li> <li>É' Vj g''wugt 'o wuv'dg''cdng''vq''wr nqcf ''gz kuvkpi ''r kewntgu''vq''y g''cr r ''cpf ''ucxg'' y go 'hqt ''c''ur gekhkgf ''ewtd''tco r 0</li> <li>É' Vj g''wugt 'o wuv'dg''cdng''vq''tgo qxg''cpf kqt''tgr nceg''r kewntgu''cuuqekcvgf " y kj ''c''ewtd''tco r 0</li> </ul>
Enqwf 'Ugtxlegu	É'Ki'yj gtg'ku'c''egmwnct''eqppgevkqp.''y gp''ewtd''tcor ''f cwc''owuv'dg''tgwtkgxgf'' cpf ''wr mqcf gf ''yq''y g'CteIKU'EwtdOGV''f cwcdcug''cv''ur gekhkgf ''r qkpwu'' y kyj kp''y g''crr0
P qp/Hwpevkqpcn' T gs wkt go gpvu	É'O cru''cpf''y gkt''f cvc''o wuv''qpn{"dg''xkukdng''vq''wugtu''y cv'j cxg''xkgy kpi" rgto kuukqpu0

J ctf y ctg			
Et kgt kyp	Wpkau	Vcti gv' Ur ge	Ewttgpv" Urge
Vqvcn'Y gkijv	ndh	>'8	707;

QxgtcmlNgpi y "*o gcuwtgf lhqo "gpf "qhi'i thr "vq'hqpv"	kр	Cf lwwcdrg"	Cf lwwcdrg"
y j ggn'y j gp''j cpf rg''cv'72/f gi tgg''cpi rg''vq''i tqwpf +		htqo '73'/'7;	htqo '73''/''
			79

#### EKTEWKV'FGUKLP'CPF'HWPEVKQPCNKV[

#### Ektewk/Qxgtxkgy

## I gpgtcnHgcvwtgu

Vj g'EKU'j ctf y ctg''eqpukuvu'qh'cp''J O/33'Dnvgvqqyi 'o qf wrg. 'NKU5NX24F NVT'' ceegrgtqo gygt. 'Ctf wkpq'P cpq'o ketqeqpvtqnrgt''U7''qr vkecn'gpeqf gt ''cpf ''J E/UT26''Uqpct'f kuvcpeg'' ugpuqt'\*Hki wtg'6c+0'Vj g'wugt''eqpvtqnr'yj g''ektewky'd{ ''qwej kpi 'keqpu''qp''yj g''kRcf ''cr r ''\*ugg''ugevkqp'' Cr r 'F gxgrqr gt''I wkf g''hqt'hwt yj gt'f gyckn+0'Vj g''cr r 'tcpuo ku''yj g''kphqto cvkqp''q''c'o ketqeqpvtqmgt'' xkc'Dnvgvqqyj 0'Vj g''Ctf wkpq''yj gp''f ktgevu''yj g''cr r tqr tkcvg''ugpuqt''q''cng''c'o gcuwtgo gpv.''y j kej ''yj g'' Ctf wkpq''r tqeguugu'cpf 'tgwtpu''q'yj g''cr r ''xkc''Dnvgvqqyj 0'Vj g''Ctf wkpq.''Dnvgvqqyj 'o qf wrg''cpf '' ceegrgtqo gygt''ctg''uqrf gtgf 'f ktgeva{ ''q''c''ukpi rg''RED''dqctf ''\*Hki wtg''6d+0'Vj g''uqpct''cpf ''gpeqf gt''ctg'' nqecvgf ''gngy j gtg''qp''yj g''RED''dqctf 0

## Rqy gt 'Uwr r n{

Vj g'r qy gt'uqwteg''qh''y g''ektewk/ku'uvqtgf 'kp''c'O qr j kg''Ur ceg''Rcemi/''c''r tqvgevkxg''ecug'' uwttqwpf kpi ''y g''kRcf ''o kpk'y j kej ''eqpvckpu'c''dwkn/kp''7X'': .222''o Cj ''dcvgt { .'y j kej ''ecp''ej cti g''y g'' kRcf ''y j krg''uko wncpgqwun{ ''r qy gtkpi ''y g''tguv'qh''y g''ektewkv'xkc''c''WUD''twppkpi ''htqo ''y g''dcvgt { '' f qy p''y g''EKU'j cpf rg''cpf ''kpvq''y g''Ctf wkpq'\*D( J .''õO qr j kg''Ur ceg''Rcemi'y kj ''Gz vgtpcn'Dcvgt { '' 54I D''Uqtci g''hqt''kRcf ''o kpk'\*Drcemiö+0'Vj g''EKU'j cu''c''dcvgt { ''htg''qh''cv'rgcuv'320 ''j qwtu''qh'' eqpvkpwqwu''wug0





**Hi wt g'6c '\*vqr** +{Uej go cvke''qh'EKU'ektewks0**Hi wt g'6d '\*dqwqo** +{RED''dqctf '\*gpektergf 'kp'tgf +" ku''cwcej gf ''vq''EKU''dcug''r rcvg0Ctf wkpq''wpky'ku''xkukdrg''qp''vqr ''qh''dcug''r rcvg0J gz ''uvcpf qhhu''ctg'' r rcegf ''dgwy ggp''yj g''RED''cpf ''dcug''r rcvg''vq''r tgxgpv''yj g''dqctf 'htqo ''tguvkpi ''qp''yj g''r kpu''qh'' grgevtqpke''eqo r qpgpvu. ''y j kej ''eqwrf ''qvj gty kug''f co ci g''yj g''r kpu0

#### Ctf wkpq'P cpq'O ket qeqpvt qngt

Vj g''ektewk/'ku''eqpvtqmgf ''d{ "cp''Ctf wkpq''P cpq. ''y j kej "cevkxcvgu''cpf ''f gcevkxcvgu''ugpuqtu." tgeqtf u''y gkt ''tgcf kpi u ''r gthqto u''pqkug''hkngt kpi ."ceegr vu''eqo o cpf u''ugpv'htqo ''y g''kRcf ''xkc'' Dnwgvqqy ''cpf ''tgwvtpu''f cvc''vq''dg''f kur re{gf 0'Y j gp''y g''wugt ''f gekf gu''vq''dgi kp''cnhpi ''c'' o gcuwtgo gpv.''y g''wugt ''qwej gu''cp''keqp''qp''y g''crr .''y j kej ''ecwugu''y g''kRcf ''q''ugpf ''c''uvtkpi ''q''y g'' Ctf wkpq''kpf kecvkpi ''y j kej ''ugpuqt''pggf u''vq''dg''cevkxcvgf .''y wu''ecwukpi ''y g''Ctf wkpq''vq''dgi kp''tgcf kpi '' htqo ''y g''crrtqrtkcvg''ugpuqt0'Y j gp''y g''o gcuwtgo gpv'ku''eqo r ngvg. ''y g''wugt ''qwej gu''c'f kthgtgpv'' keqp. ''ecwukpi ''y g''kRcf ''vq''ugpf ''c''uvtkpi ''kpf kecvkpi ''y g''gpf ''qh''y g''o gcuwtgo gpv''y wu''ecwukpi ''y g'' Ctf wkpq''vq''uqr ''tgcf kpi ''htqo ''y g''ugpuqt''cpf ''ugpf ''y g''cxgtci g''qh'y g''o gcuwtgo gpv''uco r ngu''dcem'' q''y g''kRcf ''xkc''Dnwgvqqy 0Vj g''Ctf wkpq''cnuq''ugtxgu''cu''c''r qy gt''uqwteg''hqt'y g''ugpuqtu0'Vj g''Ctf wkpq'' ku''r qy gtgf 'htqo ''y g''ur ceg''r cemi'y tqwi j ''ku'WUD'r qtv.'cpf ''r qy gtu''y g''guy'qh'y g''ektewkv'y tqwi j '' ku''7X''cpf ''505X''r qy gt'' kpu0

## Crrtqzko cvg'Tqmkpi 'Cxgtcig

Hkngtkpi "qh'y g'uqpet"cpf "ceegngtqo gygt"o geuwtgo gput"ku'f qpg"wukpi "cp"er r tqzko cyg" tqnkpi "exgtei g"\*enq"npqy p"cu"e<u>o qf khlgf "o qxkpi "exgtei g</u>+0Gs wevkqp"3"f kur ne{u'y g'tqnkpi " exgtei g"chygt"kuco r ngu<u>k</u><sub>i</sub>

$$\underline{s}_i = ((i-1) \times \underline{s}_{i-1} + s_i)/i \qquad *3+$$

Y j gtg'<u>ku''j</u> g'r tgxkqwu'cxgtci g''xcnwg'cpf 'ku''j **g**''pgy guv'uco r rg0'Vj ku''ecnewrcvkqp'ku'' r tghgtcdrg''q'c''uko r rg''o qxkpi ''cxgtci g''\*y j gtg''j g''cxgtci g''qh''uqo g''pwo dgt''qh''j g''o quv'tgegpv'' r tgxkqwu''xcnwgu'ku''cmgp+'hqt ''w q''tgcuqpu0'Vj g'htuv'dgpghk/ku''j cv'c''uko r rg''o qxkpi ''cxgtci g'' tgs wktgu''y g''uqtci g''qh'c''pwo dgt''qh'' tgxkqwu''xcnwgu. ''y j krg''cp''cr r tqzko cvg''tqnkpi ''cxgtci g''uqtgu'' qpn{ ''y g'' tgxkqwu''xcnwg''qh''y g''tqnkpi ''cxgtci g'<u>kcpf1</u>''y g''pwo dgt''qh''uco r rgu''cmgp''k0'Vj ku'' tgf wegu''y g''tgs wktgf ''o go qt{ ''cpf ''tgf wegu''y g''nkngkj qqf ''qh'kovgi gt''qxgthqy ''gttqtu''y cv'ecp''qeewt'' y j gp''cmkpi ''y g''uwo ''qh'c''rcti g''pwo dgt''qh''xcnwgu0'Vj g''ugeqpf ''dgpghkv'ku''y cv'y g''wugt''f qgu''pqv'' pggf ''q''y ckv'hqt''cp{ ''ugv'r gtkqf ''qh'ko g''q''cmg''c''egtvckp''pwo dgt''qh'uco r rgu0'C''uko r rg''o qxkpi '' cxgtci g'tgs wktgu''c''ugv'pwo dgt''qh'uco r rgu''q''dg''cmgp.''cpf ''kh'o gcuvtgo gpv'uqr u''dghqtg''y ku pwo dgt"qh'uco r ngu'ku'\cngp."\j g"tgo ckpkpi 'uco r ngu'y km'f ghcwn\'\q'2."ecwukpi '\j g"ecnewnc\gf" cxgtci g'\q"dg"gttqpgqwun{"uo cm0\Vj g"cr r tqzko cvg"o qxkpi "cxgtci g'y km'tgwtp"c"tgcuqpcdng"xcnwg" chvgt"gxgp"c"ukpi ng"uco r ng"\cnj qwi j "kv'ku'uvkm'r tghgtcdng"\q"\cng"o qtg+."\j wu"cxqkf kpi "gttqtu'f wg'\q" uvqr r kpi "o gcuwtgo gpv'chvgt"cp"kpuwhkekgpv'r gtkqf "qh'\ko g0

# J O/33'Dnwgvqqyi 'O qf wrg

Vj g'J O/33'Dnwgvqqyj 'o qf wrg'ku'wugf 'hqt'Dnwgvqqyj '602''eqo o wpłecykąp''dgwy ggp''yj g'Ctf wkpq'' cpf ''yj g'KRcf 0'Vj g'J O/33''cf xgtvkugu''c''eqppgevkqp. ''y j kej ''yj g'KRcf ''cr r ''f kueqxgtu''cpf ''eqppgevu''vq'' y j gp''yj g''cr r ''uvctvu''wr 0'Dnwgvqqyj ''f cwc''ku''tgrc { gf ''vq''cpf ''htqo ''yj g''Ctf wkpq''xkc''ugtkcn'' eqo o wpłecykqp''\*ugg''ugevkqp''Uqhwy ctg'F guki p''/'Dnwgvqqyj ''Eqppgevkqp''hqt''hwtyj gt'f gyckn+0

Uqpct 'F kucpeg''Ugpuqt



Hi wtg'7<J E/UT26'wntcuqpke'tcpi kpi 'o qf wrg'wugf 'hqt'o gcuwtkpi 'xgtvlecn'f kncpegu'' \*TqdqvUj qr.'õJ E/UT26'Wntcuqpke'Tcpi g'Hlpf gtö+0

Xgtvkecn'f kucpegu''ctg''o gcuwtgf ''wukpi ''cp'<u>J E/UT26'</u>'Wntcuqpke''Tcpi kpi 'O qf wg'\*Hki wtg'7+0'Vj g'' J E/UT26''wugu''uqpct''q''o gcuwtg''y g''f kucpeg'htqo ''kughi'q''y g''pgctguv'uqhf ''uwthceg''kp''htqpv'qh'k0' Vj g''ugpuqt'j cu'c'tcpi g''qh'4''/'622'eo ''cpf ''cp''ceewtce{ ''qh'5''o o '\*GNGEHtgcm.'ōWntcuqpke'' Tcpi kpi 'O qf wg'J E''/'UT26ö+0'Crrn{kpi ''c''r wug''qh'j ki j '\*7X+'xqnci g''q''y g''÷Vtki ø'r kp''cevkxcygu'' y g''ugpuqt''q''go kv'c''dwtuv'qh'wntcuqwpf.''cpf ''y g''÷Gej qø'r kp''dgeqo gu''ugv'q''j ki j ''xqnci g0'Qpeg''y g'' dwtuv'qh'wntcuqwpf ''dqwpegu''qhh''y g''pgctguv'uwthceg''cpf ''tgwtpu''q''y g''ugpuqt.''y g''÷Gej qø'r kp'' tgwtpu''q''ny '\*2X+'xqnci g0'Vj g''Ctf wkpq''f gvgewi''y j g'y gt ''y g''÷Gej qø'r kp''ku'j ki j ''qt''ny ''cpf '' tgeqtf u''y g''ko g''v'hqt''r kp''q''tgwtp''q''ny ''xqnci g0'F kucpeg''f ''ku''f gvgto kpgf ''wukpi ''gs wcvkqp''4<

$$d = t \times v/2$$

\*4+

Y j gtg'x'ku''y g''ur ggf ''qh''uqwpf ''kp''ft{''ckt''cv'tqqo ''yo r gtcwtg0 $t \times v$ tgwtpu''y g''qvcn'f kucpeg vtcxgngf ''d{''y g''wntcuqpke''r wng. ''y j kej ''ku''y gp''f kxkf gf ''d{''y q''q'ceeqwpv''hqt''y g''hcev'y cv'y g'' r wng''vtcxgni'y g''uco g'f kucpeg''y keg''\*qpeg''vtcxgnkpi ''htqo ''y g''ugpuqt''q''y g''uwthceg. ''y gp''ci ckp'' y j gp''tgwtpkpi ''q''y g''ugpuqt+0

Vj g'uqpct'ku'o qwpvgf ''cv'y g'htqpv'qh'y g'EKU'dcug'r mvg'\*Hki wtg'8c+0'Vq''cmg''c'o gcuwtgo gpv'qh'' xgt kecn'f kucpeg'\*'uwej ''cu'y g'j gki j v'qh''c''ewtd+.''y g''wugt'r megu'y g''dcug'r mvg''qp''y g''j ki j gt''qh''y q'' uwthcegu''uwej ''y cv'y g''uqpct''ku'f ktgevn{ ''cdqxg''y g''j ki j gt ''uwthceg.''y gp''qwej gu''cp''keqp''qp''y g''cr r .'' y j kej 'f ktgevu''y g''uqpct''q''o gcuwtg''y g''f kucpeg'htqo ''y g''uqpct''q''y g''j ki j gt''uwthceg''\*Hki wtg'8d+0' Chgt.''y g''wugt''o qxgu''y g''dcug''r mvg''uwej ''y cv'y g''dcug''r mvg''ku''uvkmtguvkpi ''qp''y g''j ki j gt''uwthceg.'' dwi'y g''uqpct''ku'f ktgevn{ ''cdqxg''y g''ny gt''qh'y g''y q''uwthcegu''\*Hki wtg'8e+0Vj g''wugt''y gp''qwej gu''cp'' keqp'y j kej ''f ktgevu''y g''uqpct''q''o gcuwtg''y g''f kucpeg''dgy ggp''kugth''cpf ''y g''ny gt''uwthceg0Vj g'' j gki j v'y kn'dg''gs wcn'q''y g''f khbgtgpeg''dgy ggp''y g''y q''o gcuwtgo gpv0



Hi wt g'8c '\*vqr +<'Uqpct '\*gpektengf 'kp'tgf +'ku'o qwpygf 'cv'y g'htqpy'qh'y g'dcug'r myg0Hi wt g'8d" \*dqwqo 'hghy+<Hkuv.''y g'f kucpeg'dgyy ggp'y g'uqpct'cpf ''y g'j ki j gt'uwthceg'ku'o gcuwtgf 'y j kg" y g'EKU'ku'tguvlpi ''qp'y g'j ki j gt'uwthceg0Hi wt g'8e'\*dqvvqo 'hghy+<'Chygt'y g'htuv'o gcuwtgo gpv." y g'EKU'ku'o qxgf ''uq'y cv'y g'uqpct'ku'cdqxg''y g''ny gt'uwthceg'cpf ''y g'f kucpeg''dgyy ggp''y g'' uqpct''cpf ''y g''ny gt''uwthceg'ku'o gcuwtgf 0'Vj g'j gki j v'qh''y g''ewtd'ku''gs wch'vq''y g'f kthgtgpeg'' dgyy ggp''y g''y q''o gcuwtgo gpvu0

# Ceegngtqo gvgt

I tcf g'y kn'ldg'o gcuwtgf 'wukpi ''c<u>'NKU5NX24F NVT''</u>ceegngtqo gvgt0Vj g''NKU5NX24F NVT''j cu'c'' tguqnwkqp''qh'0223'i '\*UV.'öO GO U'kpgtvkch'ugpuqtö+.''y j kej 'y kn'lcmyy 'hqt'i tcf g'o gcuwtgo gpwi' y kj ''cp''cxgtci g''ceewtce{ ''y kj kp'208'f gi tggu'y j gp''wugf ''q''o gcuwtg''cpi ngu''wpf gt'702'f gi tggu'' \*cnj qwi j ''y g''gzcev'ceewtce{ ''y kn'ldg'f gr gpf gpv'qp''y g''cpi ng+0Vj g''ceegngtqo gvgt''y kn'' eqpvkpwqwun{ ''o gcuwtg''cpf ''tcpuo kv'y g''ceegngtcvkqp'kp'y g''z.''{ ''cpf ''} ''f ktgevkqp''q''y g''Ctf wkpq''cu'' 38/dkv'dkpct{ ''pwo dgtu'tgr tgugpvkpi ''ceegngtcvkqpu''dgw ggp''402''cpf ''/402''i 0'Y j gp''y g''z.''{ ku'uvcvkqpct{.''y gug''o gcuwtgo gpwi'y kn'kpf kecvg''y g''eqo r qpgpwi'qh''y g''hqteg''qh'i tcxkv{ ''kp''y g''z.''{'' cpf '| 'f ktgevkqpu'\*z.''{ ''cpf '| .'tgur gevkxgn{+.'y j kej 'ecp''dg''wugf ''vq''o gcuwtg''y g''cpi ng'C''kp''f gi tggu'' ceeqtf kpi ''vq''gs wcvkqp''5<

 $A = C * \tan^{-1}(\sqrt{x^2 + y^2/z})$ 

\*5+

Y j gtg" $tan^{-1}$  ku'y g'kpxgtug''cpi gpv."cpf 'E 'ku'cp"gzr gtko gpvcm( 'f gvgto kpgf 'eqpuvcpv''wugf ''q ecnkdtcvg''y g''ceegngtqo gvgt0'V j g''cpi ng''ku''pgzv'eqpxgtvgf 'htqo ''f gi tggu''vq''r gtegpv'i tcf g''RI ''wukpi '' gs wcvkqp''6<

 $PG = 100 \times tan^{-1}(A)$ Y j gtg''tan<sup>-1</sup>()ku''y g'kpxgtug''cpi gpv0 \*б+

Vj g''ceegngtqo gvgt'ku''uqnf gtgf ''q''y g''RED''dqctf .''y j kej 'ku''cwcej gf ''q''y g''EKU''dcug''r ncvg0'Vq'' o gcuwtg'i tcf g.''y g''EKU'ku''r ncegf ''qp''y g''uwthceg.''cpf ''cp''keqp''qp''y g''crr 'ku''qwej gf ''y j kej ''ecwugu'' y g''EKU''q''eqpvkpwqwun{ ''cmg''cpi ng''o gcuwtgo gpvu''wpvkn'y g''wugt''qwej gu''c''f kthgtgpv'keqp.''y j kej ecwugu''y g''EKU''q''uvqr ''cmkpi ''cpi ng''o gcuwtgo gpvu.''cpf ''f kur nc { ''y g''crr tqzko cvg''tqmkpi ''cxgtci g''qh'' y g''cpi ng''o gcuwtgo gpvu'\*'ugg''ugevkqp''Ektevkk'F guki p''cpf ''Hwpevkqpcnkv{''/'Crr tqzko cvg''Tqmkpi '' Cxgtci g''qt''c''f guetkr vkqp''qh''y g''crr tqzko cvg''tqmkpi ''cxgtci g+0

# Gpeqf gt

J qtk qpvcn'f kncpegu'uwej "cu''y g'ngpi y "qh'c'ewtd"ctg"o gcuwtgf "wukpi ''y g'U7/'Qr vecn'Uj ch/' Gpeqf gt "<sup>\*</sup>ur gekhecm{ ''y g''U7/582/472/P G/U/D'o qf gnt0'Vj g''C ''cpf ''D'r kpu''qh'y g''gpeqf gt''uy kej '' dgw ggp'j ki j '\*7X+"cpf ''nqy ''\*2X+"xqnci g''cu''y g''gpeqf gt''uj ch/'tqvcvgu0Gcej 'r kp''ecp''uy kej 'htqo '' j ki j ''q''nqy ''cpf ''dceni\*entem+'582''ko gu''r gt 'hwn'tgxqnwkqp''qh''y g''gpeqf gt''uj ch/'\*WU'F ki kcn ''õU7'' Qr vecn'Uj ch/'Gpeqf gtö+.''i kxkpi ''y g''EKU'c'tguqnwkqp''qh''027'kp'\*ugg'ugevkqp''O gej cpkecn'F guki p'' cpf ''Hwpevkqpcnk{ ''/'Gpeqf gt''I gctu'hqt'hwty gt''f gvckn+0Vj g''uy kej ''htqo ''j ki j ''q''ny ''xqnci g'' dgw ggp''y g''y q''ej cppgn'ku'urki j vn{ ''qhugy'\*; 2'f gi tggu''qw''qh'rj cug+''uq''y cv'y j gy gt''ej cppgn'C'' ngcf u'D''qt'D'ngcf u'C''ecp''dg''wgf ''q''f gvgto kpg''y j gy gt''y g''uj ch/'ku''tqvcvkpi ''kp''c''empeny kug''qt''' eqwpygt/empeny kug''o qvkqp0

Vq"o cng"j qtk qpvcn'o gcuwtgo gpvu. "vj g"vugt"vqwej gu"cp"keqp"qp"vj g"crr"vj j kej "ecwugu"vj g"EKU"vq" dgi kp"eqwpvkpi "gpeqf gt"enkemu0"Y j gp"vj g"vugt"vqwej gu"cpqvj gt"dwvqp. "vj g"Ctf wkpq"vugu"vj g"vqvcn" gpeqf gt"enkemu"vq"ecnewacvg"vj g"f kuvcpeg"vtcxgrgf 0

# UQHVY CTG'FGUN P/'Ctel KU

# Kpvt qf wevkqp

Vj ku'ugevkqp'f guetkdgu'ýj g'uvgr u'vcngp'vq'f guki p''cpf 'r wdrkuj ''c''ewuvqo 'j quvgf 'hgcwutg'' ugtxkeg''y cv'uvqtgu''ewtd''tco r 'f cvc0'D{ 'kpvgtcevkpi ''y kyj ''c''o cr 'tgr tgugpvcvkqp''qh'y gug'f cvc. ''wugtu'' y kyj ''y g''eqttgev'r gto kuukqpu''ecp''xkgy 'hgcwutgu.''gf kv'cwutdwwgu.''cpf ''cff ''cwcej o gpvu''vq''y g''emwf '' f cvcugv'yj tqwi j ''CteO CR'hqt''F gumqr.''CteI KU''qprkpg.''qt''yj g''EwtdO GV''Crr0'Hgcwutg''cpf ''rc{gt'' f guki p''y cu''dcugf ''qp''yj g''Lwpg''4239''xgtukqp''qh''RgppF QVøu''EU/6623''Ewtd''Tco r ''Kpur gevkqp''hqto 0

Dtkgh'gzr ncpcvkqpu'qh'I KU/ur gekhe'vgto kpqnqi { "ctg'i kxgp'vq'qtkgpv'c'i gpgtcn'cwf kgpeg='j qy gxgt."

hqt''y qug'uggnlipi ''c''f ggr gt''wpf gtuvcpf lipi ''qh''y g''eqpegr wi'lipitqf wegf .''GUT Kr wdnluj gu'htgg''qpnlipg'' i wlf gu''cpf ''wwqtlicm''nqt''cm'y g''uqhiy ctg''o gpvliqpgf ''lip''y lu''ugevliqp0

# CteO CR

CteO CR'32060 'hqt 'F gumqr 'y kj 'cp'cf xcpegf 'hegpug'y cu'wugf '\q'i gpgtcvg'y g" htco gy qtmlhqt'y g'j quvgf 'hgcwtg'ugtxkeg'y cv'y g'EwtdO GV'cr r 'ceeguugu'cpf 'wr f cvguOC'ewtd" tco r 'hgcwtg'encuu'y cu'f guki pgf 'dcugf "qp'y g'Lwpg'4239'xgtukqp'qh'RgppF QVøu'EU/6623'Ewtd" Tco r 'Kpur gevkqp'Hqto 0Vj g'hgcwtg'encuu'ugtxgf 'cu'c'yo r ncvg'hqt'uwdencuugu'y cv'ctg'ugr ctcvgf " d{"ewtd'tco r 'v{r g'\*V{r g'3. 'V{r g'4. 'gveOOHgcwtg''nc{gtu'y gtg''etgcvgf 'htqo 'y g'uwdencuugu'cpf '' cff gf '\q'c'o cr .'y j kej 'y cu'r wdrkuj gf '\q'CteI KU'Qprkpg'cu'c'j quvgf 'hgcwtg'ugtxkeg0Vj ku'ugevkqp" r tgugpwl'f guetkr vkqpu'qh'y g''gngo gpwl'hkuvgf ''cdqxg''cpf ''j g'uvgr u'\cngp'\q''eqppgev'y go '\qi gy gt0

# Ewtd'Tcor'Hgcwtg'Ercuu

õHgcwatg"encuugu"ctg"j qo qi gpgqwu"eqmgevkqpu"qh"eqo o qp"hgcwatgu. "gcej "j cxkpi "vj g"uco g"ur cvkcn" tgr tgugpvcvkqp. "uwej "cu"r qkpvu. "kpgu. "qt"r qn{ i qpu. "cpf "c"eqo o qp"ugv"qh"cvatkdwwg"eqnvo pu. "hqt" gzco r ng. "c"hkpg"hgcwatg"encuu"hqt"tgr tgugpvkpi "tqcf "egpvgtnkpgu0ö

Vj g'ewtd'tco r 'hgcwtg'encuu'eqpvckpu''cm'r quukdng'hkgrf u''y cv'c''ewtd''tco r ''eqwrf ''j cxg0'Uwdencuugu'' y gtg''etgcvgf 'hqt''gcej ''ewtd''tco r ''v{r g''cpf ''cf f gf ''vq''c''i gqf cvcdcug0

# F qo clipu

F qo ckpu'y gtg''wugf ''q''nko ki'y g''pwo dgt''qh''xcnff ''xcn<br/>wgu''hqt''cwthdwgu''cpf ''eqttgur qpf ''y kj ''ftq<br/>r /f qy p''o gpwu''qp''y g''EU/66230

# Hlgrf u

Gcej 'hgcwtg'j cu'c'ugv'qh'pqp/ur cvkcn'kphqto cvkqp''ecngf ''cwtkdwgu''hkpngf ''vq''kv<u>\*\*Gutk</u>" <u>õCwtkdwg''~F ghkpkkqpö+0</u>'Vj g'hgcwtg''encuu''hkgnf u''f ghkpg''yj g''ugv''qh''cwtkdwgu''cuuqekcvgf ''y kj ''yj g'' ewtd''tco r 0

# Hgcwtg''Nc{gtu

õC 'hġcwtg'nc { gt 'ku'c'i tqwr kpi ''qh''uko krct'i gqi tcr j ke'hġcwtgu. 'hqt ''gzco r ŋ. ''dwkrf kpi u. 'r ctegn." ekkgu. 'tqcf u. ''cpf ''gcty' s wcng''gr kegpvgtu0Hgcwtgu''ecp''dg''r qkpvu. ''hpgu. ''qt ''r qn{ i qpu'\*ctgcu+0' Hgcwtg''nc { gtu''ctg''o quv''cr r tqr tkcvg''hqt ''xkuvcnk kpi ''f cvc''qp''vqr ''qh'' { qwt ''dcugo cr u0[ qw''ecp''ugv'' r tqr gtvkgu''hqt 'hġcwtg''nc { gtuô uwej ''cu''uv{ ng. ''tcpur ctgpe { .''xkukdng''tcpi g. ''tghtguj 'kpvgtxcn''cpf '' ncdgniô y cv'eqpvtqn'j qy ''y g''nc { gt ''cr r gctu''kp''y g''o cr 0Wukpi ''c''hgcwtg''nc { gt.''{ qw''ecp''xkgy .''gf kx.'' cpcn{ | g. ''cpf ''gzgewg''s wgtkgu''ci ckpuv'hgcwtgu''cpf ''y gkt ''cvtkdwgu<u>'\*Gutk 'õHgcwtg''Nc { gtuö+</u>tõ

 $Vq"ckf"s wgt \{ kpi "cpf"f kur m \{ ."hgcwatg"m \{ gtu"ctg"ugr ctcvgf"d \{ "v{r g0Vj g'hqmqy kpi "hgcwatg"m \{ gtu" y gtg"etgcvgf "hqt"E wtdO GV"/"V{r g"3."V{r g"3C."V{r g"4."V{r g"6."V{r g"6C."V{r g"7."V{r g"8."}} Drgpf gf "Vtcpukkqp."V{r g"C 'O gf kcp."V{r g"D'O gf kcp."cpf "Qy gt0Cmhgcwatg"m { gtu" j cxg'y g" uco g"hkgnf u"gzegr v'hqt"pwo dgtgf "f ko gpukqpu"s"C."D."E."gwe00Qpn{"vj g"tgs wktgf"pwo dgtgf" f ko gpukqpu"s"C."D."E."gwe00Qpn{"vj g"tgs wktgf"pwo dgtgf" f ko gpukqpu"s"C."D."E."gwe00Qpn{"vj g"tgs wktgf"pwo dgtgf" f ko gpukqpu"s"C."D."E."gwe00Qpn{"vj g"tgs wktgf" pwo dgtgf" f ko gpukqpu"s" f ko gpu$ 

Kp"cffkkqp."cm"rc{gtu"j cxg"y q"uwdrc{gtu"/"Eqo r rgvg"cpf"Kpeqo r rgvg0Hgcwtgu"kp"y g"kpeqo r rgvg"

## EwtdO GV'O cr

Cnj qwi j "gcej "qh'y g"eqo r qpgpvu'hknyf "cdqxg"/ 'hgcwtg"ercuugu"cpf "rc { gtu"/ "ctg"ucxgf "kp"ugr ctcvg" hknyu. 'y g{"ctg"dtqwi j v'vqi gy gt "kp"y g'EwtdO gv'O cr to zf 'hkng. "cp"CteI KU'CteO CR"f qewo gpv0' Nc { gtu"htqo "y g"ecvcmi "ctg"cff gf "vq"y g"o cr 0'Htqo "j gtg. "hgcwtgu"ecp"dg"cff gf "vq"c"rc { gt "kp"y g" o cr "kh'f guktgf ='y g{ "y kn'dg"ucxgf "kp"y g"rc { gtøu"cwtkdwg"vcdrg0'Hgcwtg"rc { gtu"ecp"cnq"dg"s wgtkgf " wukpi 'y g"öUgngev'Nc { gt"d { 'Cwtkdwgö"Vqqn0'Hqt"o qtg"kphqto cvkqp"qp"y g"s wgt { 'vqqn"ugg" j wr <lr tq0ctei ku0eqo lgp lr tq/cr r lvqn/tghgtgpeglf cc/o cpci go gpvlugngev/rc { gt/d {/cwtkdwg0} vo 0

Chigt 'hqi i kpi 'kpvq'cp'CteI KU'ceeqwpv'y kj 'r wdrkuj kpi 'r gto kuukqpu.''y g'o cr 'y cu'r wdrkuj gf ''cu'c'' ugtxkeg'pco gf 'õEwtdo gvaO cr ö''vq''CteI KU'Qprkpg0'KVj cu'322222''o czko wo ''tgeqtf u0'Hgcwtg'' ceeguu'ku''gpcdrgf 'y kj ''c''TGUV''WTN="eEtgcvg.''f grgvg.''s wgt{.''u{pe.''cpf ''wr f cvg''qr gtcvkqpu''ctg'' gpcdrgf 0

# Ctel KUQphpg

C'y gd'o cr 'pco gf 'õEwtdO GVaO cr ö'y cu'etgcvgf ''qp'CteI KU'Qprkpg."cpf ''y g'r wdrkuj gf '' hgcwtg''ugtxkeg'y cu'cf f gf ''vq'kv0Vj g'o cr øu''ugtxkeg''WTN'ku'wugf ''vq''ceeguu''kv''y tqwi j ''cp''CteI KU'' Rqtvcn'Kgo ''y kj kp''y g''cr r 0

# Crr'Fgxgnqrgt'I wlfg

# Kpvt qf wevlqp

Vj ku'ugevkqp'ku'c'f gxgrqr gtøu'i vkf g'hqt'vj qug'y j q'uggnivq'wpf gtuvcpf ''qt'o qf kh{ ''vj g'' uvt wewtg''qh'y g'E wtdO GV'kQU'cr r ''uqwteg''eqf g0'Vq''ceeqo r nkuj ''yj ku'i qcn'hkuvu''qh'f gr gpf gpekgu." encuu'f kci tco u ''wugt''gzr gtkgpeg''hrqy ''ej ctvu ''cpf''cp''cr r gpf kz''qh''cm''cr r ''xkgy u''ctg''kpenwf gf 0

C'dcuke'npqy ngf i g'qh'Crrngøu'ZEqf g'kpvgi tcvgf 'f gxgnqro gpv'gpxktqpo gpv'\*KFG+'cpf 'Uy khv' rtqi tco o kpi 'ncpi vci g'ku'cuuvo gf0

# Fgrgpfgpelgu'cpf '5tf 'Rctv{ 'Cenpqy ngf i go gpvu

Crr 'Dwkff 'Kphqto cvkqp F gr m{o gpv'Vcti gv<'kQU'3202 Dcug'UF M<'Ncvguv'kQU'\*kQU'3303+ F gxkegu<'Wpkxgtucn'\*kRj qpg''cpf 'kRcf + Uy khv'Ncpi wci g'Xgtukqp<'Uy khv'504

Crrng'Nkdtctkgu'cpf 'Htco gy qtmu

Pco g	Xgtukqp	<b>F</b> qewo gpvc wkqp	Crrdecwqp'lp'EwtdOGV'Crr	
Eqtg Dnwgvqqyj	Uy khv/508	<u>Crrng'Fgxgnqrgt</u> " <u>Fqewogpvcvkqp</u>	Vj g'Eqtg'Dnwgvqqvj 'htco gy qtm'r tqxkf gu'vj g'' encuugu'pggf gf 'hqt"{ qwt 'cr r u'vq''eqo o wpkecvg'' Dnwgvqqyj ''nqy ''gpgti { 'f gxkegu.''y j kej ''vj g'' EwtdO GV'EKU'wugu'vq'hcekrkscvg''eqo o wpkecvkqp'' dgw ggp''yj g''o gcuwtkpi ''f gxkeg''cpf ''vj g''kQU'cr r 0	
WKMkv	Uy khv/508	<u>Crrng'Fgxgnqrgt</u> " <u>Fqewogpvcvkqp</u>	Rctcr j tcugf 'htqo 'Crrngøu'F gxgnqrgt'' F qewo gpvcvkqp É'Y kpf qy 'cpf 'xkgy ''ctej kgewtg'*xkgy '' eqpvtqngtu.''cdgn.''cdng'xkgy u.''gve0+ É'Gxgpv'j cpf nkpi 'kphtcuxt wewtg'hqt'' f grkxgtkpi 'Ownkkqwej ''cpf ''qvjgt''v{rgu''qh'' kprw''q''{qwt''crr É'õO ckp''twp''nqr ''pggfgf ''vq''o cpcig'' kpvgtcevkqpu''coqpi ''vjg''wgt.''yg''u{uvgo.'' cpf ''yjg''crr0o	
Hqwpf cwlqp	Uy khiv'508	<u>Crrng"Fgxgmprgt</u> " <u>Fqewogpvcvkqp</u>	õCeeguu"guugpvkcnlfcvc"v{rgu."eqmgevkqpu."cpf" qrgtcvkpi/u{uvgo"ugtxkegu"vq"fghkpg"vjg"dcug"rc{gt" qhihvpevkqpcnkv{"hqt"{qvt"crr06	

EqeqcRqfu'cpf '5tf 'Rctv{ 'Nkdtctkgu

# Walpi 'Eqeqcrqfu

õEqeqcRqf u'ku'c'f gr gpf gpe{ 'o cpci gt'hqt'Uy khv'cpf 'Qdlgevkxg/E'Eqeqc'r tqlgev0'K'j cu'' qxgt'62''y qwucpf 'kdtctkgu'cpf 'ku'wugf 'kp''qxgt''40 'o knkqp''cr r u<u>'\*EqeqcRqf u'F gx''Vgco .</u>" <u>EqeqcRqf uQti +(ö</u>''Rqf u'ctg''cf f gf ''q''y g'Z Eqf g''r tqlgev'd{ 'etgcvkpi ''c''gf kkpi ''y g''r tqlgevdu'' Rqf hkrg0'F gvckrgf 'kpuvt wevkqpu'hqt'kpuvcnkpi ''r qf u'ecp''dg''xkgy gf ''qp''y <u>g''Eqeqcr qf u'y gdukg0'</u>Rqf u'' ecp''qpn{ ''dg'tghgtgpegf ''y j gp''y qtmkpi 'htqo ''y g'>Rtqlgev'P co g@zeqf gy qtmr ceg'hkrg0

 $\begin{array}{l} Eqeqcr qf u'y qtmu'd \{ "etgcvkpi" qt'wr f cvkpi" c'y qtmur ceg"cpf "cffkpi" y g"Eqeqcr qfu'uvcvke "hdtct \{ "rtqlgev'vq" y g"y qtmur ceg"kh"pggf gf 0P gzv." kv"cffu'ndRqfu & "cpf" Zeqfg" eqphki wtcvkqp" hkrg" vq" y g"rtqlgev0 Qpeg" y g"crr øu" vcti gv" eqphki wtcvkqpu" ctg" ej cpi gf" vq" dg" dcugf "qp" EqeqcRqfu u. 'c" dvkrf" rj cug" ku"cff gf" vq" eqr { "tguqwtegu" htqo" {qut "rqfu" vq" y g"crr "dwpf ng" EqeqcRqfu" Fgx" Vgco." <u>oCffkpi" Rqfu" vq" cp" Zeqfg" Rtqlgev0</u>$ 

# Rqf u'Wugf 'lp'E wt dO GV

Pqvg<"Cny qwi j "uqo g"hkdtctkgu"ctg"y tkwgp"kp"Qdlgevkxg/E."cm"ecp"dg"gcukn{ "wugf "kp"Uy khw0

Pcog Ncpiwcig Xgtuką Fąewo gpycykąp Crrnlecykąp'kp'EwtdOG	V'Crr
---	-------

		р		
CteI KU	Uy khv	3220803	<u>Ctel KUTwpyko g</u> <u>UF M'hqt'kQU</u>	Rtqxkf gu'xkgy kpi "cpf "gf kkpi " ceeguu'vq"y g"EwtdO GV'CteI KU" j quvgf "hgcwtg"ugtxkeg0Rtqxkf gu" nqi kp'CRKhqt'CteI KU'qpnkpg" ceeqwpw0
UXRtqitguuJ WF	Qdlgevkxg/" E	40404	<u>I kJ wd'Rci g</u>	Fkurnc{u'rtqitguu."gttqt"cpf" uweeguu"oguucigu0
TzUykhv	Uy khv	502	<u>TzUy ki</u> v <u>Eqeqcrqfu'Rcig</u>	Rtqxlf gu'hwpf cogpvcn'hwpevkqpcn' tgcevkxg'r tqi tcookpi 'encuugu.'' uwej ''cu''qdugtxcdngu0
TzEqeqc	Uy khv	502	<u>TzEqeqc</u> <u>Eqeqcrqfu'Rcig</u>	Gzvgpfu'Crrngøu'Eqeqc"cpf" EqeqcVqwej "htcogyqtmu'vq'vcmg" cfxcpvcig"qh'TzUykhv0
OOFtcy gtEqpv'' tqmgt	Uy khv	20802	<u>I kyi wd''Rci g</u>	Gcukn{ ''etgcvg''cpf ''kpvgtcev''y kvj '' ukfg''ogpwu0
Gwtgmc	Uy khv'5	50802	I kj vd"Rci g	Etgcvg"f{pcoke"hqtou."yjkej" ctg"wugf"vq"rqrwncvg"eqpvgpv"kp" ugwkpiu"rcig"cpf"uqog"ukfg" ogpwu0

Vj ktf 'Rctv{ 'Ko ci gu'cpf 'Keqpu

Tco r 'ko ci gu'y gtg''eqr kgf 'htqo ''RgppF QVøu'EU/6623'hqto 0 Cm'qyj gt'ko ci gu''pqv'nkuvgf 'kp''yj g''vcdrg''dgrqy ''y gtg''etgcvgf ''d{''\ qg''Vqki q0

Pco g	Uqwteg	Hkgpco g'kp'Crr
Dnvgvqqyj "keqp	Ocfg"d{ <u>'Okpj"Jqcpi</u> "htqo <u>"yyy0mcvkeqp0eqo</u>	Dnwgvqqyj († pi
<u>Ngi gpf "keqp</u>	Ocfg'd{ <u>''Rcxgn'Mq  mx'</u> htqo <u>''y y y 0mcvkeqp0eqo</u>	ngi gpf 0 pi
Ogpw'keqp	Ocfg'd{ <u>''Uo cuj keqpu'</u> htqo <u>''y y y 0mcvkeqp@qo</u>	o gpw0rpi
Gf k/keqp	Ocfg'd{ <u>''Uo cuj keqpu'</u> htqo <u>'y y y 0mcvkeqp@qo</u>	gf kŵ pi
Hkngt "keqp	Ocfg'd{ <u>''Uo cuj keqpu'</u> hiqo <u>''y y y 0mcvkeqp0eqo</u>	hknygt0rpi
<u>O cr 'keqp</u>	Ocfg'd{ <u>''Keqppleg</u> 'htqo <u>''y y y (hrcvleqp(leqo</u>	o cr 0 pi

<u>Rj qvq"cndwo "keqp</u>	Ocfg'd{ <u>''Uoctwkpg'</u> htqo <u>''yyy0mcwkeqp0keqo</u>	rjqvqCndwo0rpi
<u>Tg/egpvgt</u> " etquujckt"keqp	Ocfg"d{ <u>"Htggrkm</u> htqo <u>"yyy0ncvkeqp@qo</u>	etquuj ckt (r pi
S wguvkqp'keqp	Ocfg"d{ <u>"Nkpj"Rjco"</u> htqo <u>"yyy(hncvkeqp(kqo</u>	s wguvkqp0r pi

# Crr'Ctej kvgevvtg

# Vj gqtgvlecn'Kpvtqf vevlqp

õUqhy ctg"ctej kgewtg"gpeqo r cuugu"yj g"ugy'qh"uki pkhecpy'f gekukqpu"cdqwi'yj g"qti cpk cvkqp" qh"c"uqhy ctg"u{ uvgo "kpenvf kpi "yj g"uggevkqp"qh"yj g"utvewutcn"gngo gpvu"cpf "yj gkt"kpvgthcegu"d{ " y j kej "yj g"u{ uvgo "ku"eqo r qugf ="dgj cxkqt"cu"ur gekhgf "kp"eqncdqtcvkqp"co qpi "yj qug"gngo gpvu=" eqo r qukkqp"qh"yj gug"utvewutcn"cpf "dgj cxkqtcn"gngo gpvu"kpvq"rcti gt"uvdu{ uvgo u="cpf "cp" ctej kgewtcn"uv{ ng'yj cv'i vkf gu'yj ku"qti cpk cvkqp0"Uqhyy ctg"ctej kgewtg"cnnq"kpxqnxgu"hwpevkqpcnk{." wucdktkv{."tguktkgpeg."r gthqto cpeg."tgwug."eqo r tgj gpukdktkv{."geqpqo ke"cpf "vgej pqnqi { " eqputckpvu."tcf gqhhu"cpf "cguj gvke"eqpegtpu"\*Uj cy "cpf "I ctmp"3; ; 8+00

KV ku'pgeguuct { "\q"qti cpk g"eqf g"uvej "\j cv'\j gtg"ku'c"engct "uvt wewstg"hqt"etgcvkpi "qdlgevu'cpf" tgrcvkqpu'dgw ggp"\j go 0Qvj gty kug."y j cv'qhygp"tguwnu"ku'ur ci j gwk'eqf g0D{ "vukpi "c"uvcpf ctf "cr r " ctej kgewstg."kv'dgeqo gu'gcukgt '\q"hkpf "ur gekhke"ugevkqpu"qh'eqf g. "\guv."cpf "kpkvkcvg"ej cpi gu'\j cv'f q" pqv'tgs wktg"o qf khkecvkqp"kp"qy gt "f qewo gpvu0

# $O~XXO~^{\prime\prime}O~qf~gn~^{\prime}Xkgy~^{\prime}O~qf~gn$

OXXO 'ku'c'r qr wrct''cr r ''ctej kgewstg'y j kej ''ugr ctcvgu''eqo r qpgpvu''y cv'o cng''wr ''c''uvqt { dqctf ''kpvq'' y tgg''ugr ctcvg''ecvgi qtkgu''qh''hkrgu<

- 30' O qf gni'/ "eqpvckpu'f cvc"cpf lqt "ceeguugu'htqo "f cvcdcugu'qt "qpnhpg'ugtxkegu0Hqt "gzco r m." Cwj qtk cvkqpCeeguuRtqxkf gt0uy khv'ku'c"o qf gn'y cv'ceeguugu'QCwj "cwj qtk cvkqp" ugtxkegu. 'y j kej "gpcdngu'nqi i kpi 'kp'wukpi 'CteI KU'ceeqwpw0Vj gtg'ku'v{ r kecm{ "qpg'o qf gn' r gt "xkgy "o qf gn"cpf 'kv'ku'kpuvcpvkcvgf "cu'c"ukpi ngvqp 'y kj kp''y g''xkgy "o qf gn0Ugg'õVcdng'qh" O qf gni. "Xkgy ."cpf 'Xkgy 'O qf gni'kp'EwtdO GVö''qp''r ci g'470P gxgt'ko r qtv'WKMkv'kpvq''y g" o qf gn1hrg=kv'uj qwrf "qpn{ "dg''wugf 'hqt 'xkgy u'cpf 'xkgy 'o qf gn0
- 40' Xkgy u'/'c''WKXkgy Eqpvtqmgt "encuu. 'y j kej "eqpvckpu''WKXkgy u'\*dwwqpu. 'vgzv'hkgnf u. 'ncdgnı." WKVcdngXkgy u. "gve0#0Cml'eqf g'y kj kp'yj g''Xkgy "uj qwrf "dg"f ktgevn{ "f gcnkpi 'y kj 'wugt" kpvgtcevkqp. 'uwej "cu'vcr u'qp''y g'uetggp0Cp{ "qy gt "eqf g. 'uwej "cu'f cvc'o cpkr wrcvkqp"qt" o qf kh{ kpi 'y g'xkuwcn'cr r gctcpeg"qh'y g'xkgy. 'uj qwrf "dg"o qxgf 'vq'c''f khigtgpv'hkrg0
- 50' Xkgy 'O qf gnu'/ 'c'uxtwev'y kj 'r tqr gt kgu'cpf 'hwperkqpu'y cv'j cpf ngu'r tgugpvcrkqp''ni ke0' Rtqr gt kgu'uwej "cu'eqnt "cpf 'uk g'hxg'kp'y g'xkgy "o qf gn0Nkng'y g'o qf gn "y gtg'ku"c'qpg/" vq/qpg'tgncrkqpuj kr 'dgw ggp'c'xkgy "o qf gn'cpf 'c'xkgy 0Vj g'xkgy "o qf gnku'kpuvcprkcvgf 'cu" c'ukpi ngvqp'y kj kp'ku'eqttgur qpf kpi 'xkgy 0F qpø/ko r qtv'WKMkv."cpf 'f qpø/f ktgevn{"



Hki wt g'9<"OXXO "Eqo r qpgpv"Køvgtcevkqpu<u>"%Qtmx+0</u>

OXXO 'j cu'y g'hqnqy kpi 'i wlf grkpgu<

- $\acute{E}$  O qf gnu'f q''pqv''cmi'q''cp{dqf {0
- É' Xkgy 'o qf gnu''qpn{ ''cmi'vq''o qf gnu0
- É' Xkgy "eqpvtqmgtu"ecppqv'\cmi\q"o qf gnu'f ktgevn{='\j g{ "qpn{ 'kpvgtcev'y kj 'xkgy 'o qf gnu'cpf '' xkgy u0
- É' Xkgy u'qpn{ '\cmi\q'y g'xkgy 'eqp\tqmgtu 'pq\kh{ kpi 'y go 'qh'kp\gtce\kqp'gxgp\u0

## Hwpevkqpcn/Tgcevkxg'Rtqitcookpi

Tgcevkxg'r tqi tco o kpi 'ku'dcugf ''qp''y g'kf gc''qh''cu{ pej tqpqwu'f cvc''uvtgco u0Ki'ku'r qy gthwn' dgecwug''cp{ 'f cvc''v{r g''ecp''dg''wvtpgf ''kpvq''c''uvtgco ''qh''qpi qkpi ''gxgpvu''qtf gtgf ''kp''vko g''''xcnwgu''qh'' r tqr gtvkgu''y cv''ej cpi g''qxgt''vko g.''ugs wgpegu''qh''kpr wu. ''gve0'Y g''ecp''uvduetkdg''vq''y gug''uvtgco u.'' cpf ''cu{ pej tqpqwun{ 'tgcev''vq''y go ''y j gp''qpg''qh''y tgg''y kpi u'j crr gp<'c''pgy ''xcnwg''ku''go kwgf.''cp'' gttqt''qeewtu.''qt''y g''uvtgco ''ku''eqo r mygf <u>''\*Uvn/ +0</u>

Hqt"gzcorng."kp"y g'EwtdOGV"crr."y g'hgvej "kocig"cwcej ogpvu"y cv"ctg"cuuqekcvgf"y ky "c"i kxgp" hgcwtg"nqecvgf "kp"cp"qphkpg"j quvgf "hgcwtg"vcdngOCu"y g"cvcej ogpvu"ctg"hgvej gf."y g{ "ctg"cffgf" vq"c"uvtgco."y j kej "y g"f kurnc{"qp"y g"uetggpOTgcevkxg"rtqitcookpi"ku"wughwhj gtg"dgecvug"kv" gpcdngu"wu"vq"f gcn"kpf kxkf wcm{ "y ky "gcej "go kvgf"cvcej ogpvu"cu"qrrqugf"vq"y ckkpi "wpvkn"cm"qh" y g"cvcej ogpvu"ctg"uveeguuhwm{ "tgvtkgxgf 0F grgpf kpi "qp"y g"pvodgt"qh"cvcej ogpvu."y ku" rtqeguu"eqwf"vcng"oqtg"y cp"c"hgy "ugeqpf u."cpf"wugtu"fq"pqv"hkng"vq"dg"uvveniy cvej kpi "c"nqcf kpi " u{ odqn0

Hwpevkqpcn'tgcevkxg''r tqi tco o kpi "dtkpi u'kp''vqqndqzgu''y cv'cmqy ''wu''q'o cpkr wrcvg''y gug''uvtgco u'' d{''o gti kpi .''o cr r kpi .''qt''hkngtkpi 0Kp''y ku''cr r .'TzUy khv''cpf 'TzEqeqc''r tqxkf g''y ku''cf f kkqpcn'' ecr cdkrkv{0õTzUy khv'ku''c''htco gy qtml'hqt''kpvgtcevkpi ''y ky ''y g''Uy khv''r tqi tco o kpi ''rcpi wci g.''y j krg'' TzEqeqc''ku''c''htco gy qtml'y cv'j gr u''o cng''Eqeqc''CRKk''wugf ''kp''kQU''cpf ''QU'Z ''gcukgt''vq''wug''y ky Tgcevkxg''yej pks wgu<u>'''Uj cr ktq+6</u>ö''O ctdng''f kci tco u''ctg''wugf ''y knwuvtcvg''y g''hwpevkqpu''cv''{ qwt'' f kur qucn'd{ ''f kur rc{kpi ''y g''kpr wi'cpf ''qwr wi'uvtgco u'r ctcmgn'y ''gcej ''y g<u>t'''õQdugtxcdngö+0</u>

Tgcevkxg'r tqi tco o kpi 'j cu'o cp{ 'dgpghku

É' õT gcevkxg'uvtgco u'cmqy "{qw'vq''y tkg'o qf wrct"eqf g'd{ 'uvcpf ctf k kpi 'vj g'o gyj qf 'qh' eqo o wpkecvkqp''dgw ggp''eqo r qpgpw0Vj g'tgcevkxg''f cvc''hrqy ''cmqy u'hqt''c''nqug''eqwr kpi '' dgw ggp''y gug''eqo r qpgpvu. ''vq<u>''\*Ngy -{</u>0
- É' õTgcevkxg'r tqi tco o kpi 'tckugu''y g'ngxgn'qh''cduvtcevkqp''qh''{ qwt''eqfg.''uq''{ qw''ecp''hqewu''qp'' y g''kpvgtfgrgpfgpeg''qh''gxgpwu''y cv'fghkpg''y g''dwukpguu''nqi ke.'tcvjgt''y cp''jcxkpi ''vq'' eqpuvcpvn{ 'hkffg''y kyj ''c''nctig''coqwpv'qh''kor ngogpvcvkqp''fgvcknu0'Eqfg''kp''TR''y km'nkngn{ ''dg'' oqtg''eqpekug'<u>\*'Uvcn/+f</u>ö
- É' õT gcevkxg"r tqi tco o kpi "gpcdngu"wu'vq"et gcvg"c"j ki j n{/kpvgtcevkxg"gzr gt kgpeg"vj cv"tgur qpf u" kp"tgcn'vko g<u>"\*Uvcnv</u> +0ö

Dkpf kpi ''y g''Xkgy ''cpf ''y g''Xkgy ''O qf gn

Dgecwug''y g'xkgy ''qy pu''y g'xkgy ''o qf gn'kk'ku'xgt { ''gcu{ 'hqt''y g'xkgy ''q''ej cpi g''r tqr gt kgu'kp''cpf '' ecm'o gy qf u'htqo ''y g'xkgy ''o qf gn0'Vj g''uco g''ecp''dg''uckf 'hqt''y g''xkgy ''o qf gn⁄u''tgrc kqpuj kr ''y ky '' y g''o qf gn0

Vj g"gzco r ng"dgnqy "uj qy u"vj g"dgi kopkoi "qh"c"uko r ng"nqi ko"r ci g0

Uco r ngNqi kpXkgy Eqpvtqngt(try khv

```
ko r qtv'Hqwpf cvkqp
ko r qtv'WKMkv
encuul'Uco r ngXkgy Eqpvtqngt<"WKXkgy Eqpvtqngt"}
r tkxcvg'ngv'xkgy O qf gn'? "Uco r ngNqi kpXkgy O qf gn*+
B KDQwngv'nqi kpDwvqp<
B KDQwngv'wugtpco gHkgnf <"WKVgz vHkgnf
B KDQwngv'r cuny qtf Hkgnf <"WKVgz vHkgnf
qxgttkf g'hwpe"xkgy F kf Nqcf *+"}";
B KDCevkqp'hwpe"mi kpVcr r gf *a'ugpf gt <"WKDwvqp+"}"
xkgy O qf gnthqi kp*wugtpco gHkgnf Øgz v.'r cuny qtf Hkgnf Øgz v+
i
```

Uco r ngNqi kpXkgy O qf gnuy khv

```
ko r qtv'Hqwpf cvkqp
encuu''Uco r ngNqi kpXkgy O qf gn'}
r tkxcvg''ngv'cwj qtk gt''? ''Nqi kpO qf gn*+
kpkv*+''}'';
hwpe''nqi kp*a''wugtpco g<'Uvtkpi .''a''r cuuy qtf <'Uvtkpi ''}''
cwj qtk gt0nqi kp*wugtpco g.''r cuuy qtf +
i
```

Y j gp''y g''wugt''\cr u''y g''nqi kp''j qy gxgt. 'kv'ku'o wej ''o qtg''eqo r necvgf ''\q''pq\kh{ ''y g''xlgy ''qh''ej cpi gu'' kp''y g''xlgy ''o qf gn'dgecwug'O XXO 'hqtdlf u'etgc\kpi ''cp{ ''tghgtgpegu'\q''y g''xlgy ''kp''y g''xlgy ''o qf gn'' Uy khv'uvcpf ctf 'hdtctlgu''r tqxlf g''c'hgy ''qr vlqpu'hqt''etgc\kpi ''cu{ pej tqpqwu''uwduetkr vlqpu.'' kpenwf kpi ''Mg{ ''Xcnwg''Qdugtxlpi ''<sup>\*</sup>MXQ+:''wulpi ''ôf kf Ugvö''cpf ''ecmdcemu0J qy gxgt.''y gug''uvcvgi kgu'' ctg''xgtdqug''cpf ''ecp''dgeqo g''j ctf ''q''o clpvclp''cu''y g''pwo dgt''qh''qdugtxgtu''kpetgcugu0'Vj wu.'' TzQdugtxcdngu''ctg''wugf ''kp''y g''cr r ''q''dkpf ''y g''xlgy ''o qf gn0

Hqt"gzcorg."y g"y cpv"vq"f kurge{"cp"gttqt"o guuci g"y j gp"vj g"wugtpcog"cpf"r cuuy qtf"ctg" kpeqttgev0Vj g"nqi kp"oqf gn"y j kej "r gthqtou"cm"cwj qtk cvkqp"hwpevkqpu."j cu"c"r wdnke"qdugtxcdng" pcogf"cwj Uxcwu."y j kej "go ku"c"uvtgco"qh"nqi kp"xcnkf cvkqp"uvcwugu0

Uco r ngNqi kpO qf gnuy khv

```
ko r qtv'Hqwpf cvkqp
ko r qtv'TzUy ktv
ko r qtv'CteI KU
encuu'Uco r ngNqi kpO qf gn'}
IlHqt'dtgxkv{.''yj ku''gzco r ng'f qgu''pqv'kpenvf g''cmi'r tqr gt vlgu
Il'cpf ''o gy qf u''yj cv''ctg''pggf gf ''vq''ko r ngo gpv''nqi kp''xcnkf cvkqp
Il'wukpi ''CI URqtvcn0
000
xct''cwj Ucwwu<''Qdugtxcdng>CI UNqcf Ucwwu@
000
i
```

Wukpi ''y g''eqf g''dgnqy .''y j kej 'ku''cf f gf ''\q''Uco r ngNqi kpXkgy O qf gnfuy khv.''y g''xkgy ''o qf gn'' uvduetkdgu'\q''cwij Ucwu.''cpf ''y j gp''c''pgy ''kgo ''ku'go kwgf ''htqo ''y g''utgco .''f gvgto kpgu'y g''eqttgev'' o guuci g''\q''f kur nc{0'Vj g''o guuci g''ku''uvqtgf ''kp''y g''xcnkf cvkqpO guuci g''xctkcdng.''y j kej ''ku''c'TzUy khv'' Xctkcdng>uvtkpi @

```
xct'xcnkf cvkqpO guuci gXctkcdng>Utkpi @
kpk/*+''}
cwj Uccwu0
Onvduetkdg*qpP gz v'' pgy Uccwu'kp
xcnkf cvkqpO guuci g0xcnvg''? ''i gvXcnkf cvkqpO guuci g*pgy Uccwu+
i +6f kur qugf *d{<f kur qugDci +
i
r tkxcvg'hvpe''i gvXcnkf cvkqpO guuci g'*a ''urcwu</pre>CI UNqcf Uccwu+''}
OD
tgwtp'o guuci g
```

Hkpcm{.''y g''xkgy ''dkpf u''xcnkf cvkqpO guuci g''vq''y g''Uco r ngXkgy Eqpvtqngtøu''xcnkf cvkqpNcdgn0Cu''c'' tguwnx.''y j gpgxgt''y g''r qtvcnøu''nqcf ''uvcwu''ej cpi gu''kp''Uco r ngNqi kpO qf gn''y g''xkgy ''eqpvtqngt'' cwqo cvkecm{ 'tgur qpf u'dcugf ''qp''y g'V{ r g''qh''uvcwu0

```
B KDQwngv'xcrkf cvkqpNcdgn<br/>
Xkgy F kf Nqcf *+''}<br/>
xkgy O qf grfxcrkf cvkqpO guuci g@uQdugt xcdrg@lkpf *vq<ugrffXcrkf cvkqpNcdgn+6f kur qugf *d{<'' f kur qugDci +<br/>
i
```

# Y j { 'þqv'O XEA



**Hi wt g'!** dO qf gn'Xkgy 'Eqpvtqmgt'F kci tco  $\underline{WQtmx+0}$ 

Vj qug'y ky 'r tgxkqwu'kQU'cr r 'f gxgnqr o gpv'gzr gtkgpeg'j cxg'r tqdcdn{ 'uggp'O XE. 'pqv'qpn{ " dgecwug'kv'ku'r tqo qvgf 'd{ 'Cr r ng. 'dwi'cnuq'dgecwug'kv'ku'qpg''qh''y g''o quv'eqo o qpn{ 'wugf 'f guki p'' r cwgtpu<u>'\*õO qf gn/Xkgy /Eqpvtqngtö+0</u>

J qy gxgt.'kQU'wugu'c''eqo dkpgf/tqngu'xctkcvkqp''qh''Xkgy "cpf "Eqpvtqnngt.'kp''y j kej ''y gug''y q''nc{gtu'' ctg''ki j vn{"eqwr ngf ''qi gy gt 'kpvq'c''õXkgy ''Eqpvtqnngt@'Dgecwug''y g''xkgy ''eqpvtqnngt 'ku'tgur qpukdng'' hqt'tgur qpf kpi ''\q''wugt''kpvgtcevkqp''cpf ''o cpkr wncvkpi ''y g''xkgy .''kv'ku''gcu{ ''q''dnncv'y g''xkgy '' eqpvtqnngt'y kj ''WK'ni ke0Cpf ''cu''y g''pwo dgt''qh''xkgy u''kpetgcugu.''uq''f qgu'y g''c qwpv'qh''dwukpguu'' nqi ke'kp''y g''xkgy ''eqpvtqnngt0Gxgpwcm{.''y g''xkgy ''eqpvtqnngt''dgeqo gu'j ctf ''q''tgcf ''cpf ''ko r quukdng'' ''q''tgwug<u>''\*Uej o kf v'cpf ''O qttkuqp-0</u>

Vj wu. 'O XXO 'y cu'ej qugp'\q'j grr ''crigxkcvg'\j gug'kuuwgu0 Vcdrg''qh'O qf gni. ''Xkgy u. ''cpf ''Xkgy ''O qf gni'kp''EwtdO GV P qvg<'Cm'hkrgu''ct g''Uy khv'hkrgu0'Vj g''ûty khv'hkrgpco g''gzvgpukqp''y cu'tgo qxgf 'hqt''tgcf cdkrkv{0

Hwpevkqp	Xlgy	Xkgy 'O qf gn	O qf gn
<u>Nqiikpi"Kpvq</u> " <u>Crr</u>	Nqi kpXkgy Eqpvtqmgt	Nqi kpXkgy O qf gn	CwjqtkţcvqpCee" guuRtqxkfgt
<u>Dnwgvqqy</u> Eqppgevkqp	UecppgtXkgy Eqpvtqmgt	UecppgtXkgy O qf gn	Dnwgvqqyj Ugtkon
	Ulf gO gpwXlgy Eqpvtqngt		

	Ngi gpf VcdngXkgy Eqpvtqngt	Ngi gpf Xkgy O qf gn	
Hknygtkpi 'O cr." <u>Fkurnc {</u>	TcorV{rgUgngevkqpVcdngXkgyE" qpvtqnngt	TcorEctqwugnXkgy" Oqfgn	
	HknygtO gpwVcdrgxkgy Eqpvtqrrgt		
	OwnkrngUgngevkqpVcdngXkgyEqp" vtqnngt		
	CffHgcwtgVcdDctEqpvtqngt		
Ceeguukpi "cpf" Gf kkoj	O cr Xkgy Eqpvtqmgt	O cr Xkgy O qf gn	
Ctel KU'J quvgf " O cr	TcorV{rgXkgyEqpvtqngt		
	Gf kqtXkgy Eqpxtqmgt	Hqto EgmV{rgu" GfkqtHqto	Hqto Kgo
	S worksovkx.gC wtkdwsguEqpvtqrrgt		
	TcorOgcuwtgogpvXkgyEqpvtqm' gt	O gcuwtgo gpvXkgy O " qf gn	
	O gcuwtgo gpvDwwqp	OgcuwtgogpvFcvcKg" o	O gcuwtgo gpvF cv" cUqwteg
	Ngi gpf VcdngXkgy Eqpvtqngt	Ngi gpf Xkgy O qf gn	
	CwtkdwgOgcuwtgogpvRqrqxgtX" E	CwtldwgO gcuwtgo gp" vRqr qxgtXlgy O qf gn	
	Cwcej o gpwXkgy Eqpvtqmgt	Cwcej o gpwtXkgy Oq" f gn	Cwcej o gpwFcv' cCeeguuRtqxkfgt
Crr'Ugwkpiu	Ugwkpi uO cuvgtXkgy Eqpvtqmgt		
	Ugwkpi uFgvcknXkgy Eqpvtqmgt	UgwkpiuHqtoHcevqt{	

### Wugt 'Gzrgt kgpeg'Hnqyejct v



**Hi wt g';** <'Wugt ''gzr gt kgpeg 'hny ej ct v'uj qy u''y g''uvgr u''y cv'c ''wugt ''ecp ''wug''y ceeguu''x kgy u''kp''y g cr r 0

### O clqt 'Crr'Hwpevkqpu

### Nqi i kpi 'kp'cpf 'Cwyj qt k cykqp

Vj g'htuv'uetggp''y cv'cr r gctu'wr qp''cr r 'ncwpej 'ku'y g''nqi kp''r ci g0Dgecwug''CteI KJ'xkgy kpi " cpf ''gf kkpi ''r gto kuukqpu''ctg'tgs wktgf 'hqt''y g''cr r øu''eqtg''hgcwtgu''/ ''kpvgtcevkpi ''y kj ''ewtd/tco r " hgcwtgu''qp''c''o cr ''/ 'y g''enkgpv''cpf 'f gxgnqr gt'f gvgto kpgf ''y cv''nqi kp''uqngn{ ''xkc''CteI KJ''qpnkpg'' ceeqwpu''y qwf ''dg''o quv''cr r tqr tkcvg''hqt''y g''cr r nkcvkqp0KVuj qwf ''dg''pqvgf ''y cv''cwj gpvkecvkqp'' tgs wktgu''cp''kpvgtpgv''eqppgevkqp0Etgf gpvkcmi'tgs wktgf ''ctg''c''wugtpco g''cpf ''r cuuy qtf .''y j kej ''ctg'' gpvgtgf ''wukpi ''cp''kp/cr r ''ng{ dqctf 0Ewtgpv{.''etgf gpvkcmi'ecppqv''dg''ucxgf ''dgwy ggp''cr r ''ncwpej gu0

Cxckrcdrg''nji kp''hwpevkqpcrkx{ 'ku'uj qy p'kp''y g''wug''ecug'f kci tco ''dgrqy 0'Cm''qh''y g''EwtdO GV''cr r cevkqpu''ctg''ceeguukdrg'kp''y g''uco g''xkgy 0'Vj g''CteI KU''Qprkpg''uki p/kp''y gdr ci g'y km''qr gp''kp''y g'' f gxkegøu''Uchctk''cr r 0



Hi wt g'32 "Nqi kp" wug" ecug"f kci tco "hqt" y g"f gxkegøu" cr r 0

Tgi ctf kpi ''y g''eqf g''hqt''nqi i kpi 'kp.''y g'CteI KU'kQU'UF M'r tqxkf gu''ugxgtch'encuugu'hqt'' ko r ngo gpvkpi ''cwyi gpvkecvkqp0

# CI URqtvcn

Vj g'hwpf co gpvcn'encuu'hqt''cwj gpvlecvlqp'ku'yj g'CI URqtvcn/bCI URqtvcn/ku'cp''qdlgev'yj cv' tgr tgugpu''c''xlgy 'hqt''c''wugt'\*cpqp{o qwu''qt''pqv+'lpvq''c''r qtvcn/y y y (CteI KUeqo 'ku'cp''gzco r ng''qh'' c''r qtvcn/mCI URqtvcn/ku''yj g''o clp''encuu''cpf ''yj g''gpvt{''r qlpv'lpvq''yj g''CRKvq''y qtniy kj ''r qtvcn''cpf '' qti cpl{ cvlqp''uvduetkr vlqpu/ki/lo r ngo gpvu''cm'yj g''qr gtcvlqpu''q''lpvgthceg''y kj ''yj g''dcengpf ''CteI KU'' Rqtvcn'TGUV'CRKo

õRqtvcni'cmqy 'wugtu'cpf ''qti cpk cvkqpu'\q'r wdrkuj ''cpf ''uj ctg''eqpvgpv'qxgt''yj g'y gd0'Rqtvcni'kpenwf g'' õWugtu'\*CI URqtvcnWugt+:'I tqwru'\*CI URqtvcnI tqwr+''cpf 'Eqpvgpv'\*CI URqtvcnKgo +06

Wugtu

- É' Uki pu'kp'\q''y g'r qt vcn'cpf "etgc vg''cpf ''uj ctg''eqp vgp v'y j kej ''ku''qti cpk gf ''kp vq''K go u0
- É' Ecp''dg''r ctv''qh''cp''qti cpk cvkqp. ''dw''y ku''ku''qr vkqpcn0
- É' Ecp'etgcvg'cpf 'lqkp'i tqwr u0
- É' Ecp'uj ctg'kgo u'y kj 'i tqwr u0
- É' õC 'wugt ''qh''y g''Rqt vcn'\*cpf ''qh''y g''TGUV'CRK+'uggu''y g''xkgy ''qhh'y g''Rqt vcn'y cv'cr r hgu'\q'' y gkt ''qti cpk cvkqp''uwduetkr vkqp0'Vj ku''xkgy ''kpenwf gu''wugtu.''i tqwr u'cpf ''kgo u''y cv'dgnpi ''q'' y g''qti cpk cvkqp''cpf ''j cxg''dggp''uj ctgf ''y ky ''y go 0'Vj ku''xkgy ''o c{ ''cnuq ''kpenwf g''wugtu.'' i tqwr u'cpf ''kgo u''y cv''ctg''gz vgtpcn'\q''y g''qti cpk cvkqp''cpf ''j cxg''dggp''uj ctgf ''y ky ''y g'' wugt0i

Qti cpk cvkqpu

- É' Wugf 'hqt'o cpci kpi 'y j q''ecp''etgcvg'j quvgf 'ugtxkegu''d{ 'wr nqcf kpi ''qhhrkpg''f cvc0
- É' Vj gtg"ecp"dg"o wnkr ng"qti cpk cvkqpu'kp"c"r qt vcn0
- É' Kpenwf gu'wugtu'y ky 'tqrgu'qh'cf o kpkuvtcvqt.'r wdrkuj gt."qt'kphqto cvkqp'y qtrgt0

I tqwru

- É' Wugf 'hqt'o cpci kpi 'y j q'ecp'xkgy "cpf "gf kv'f cvc''y cv'ku''cnt gcf { 'j quvgf "qpnkpg0
- É' Eqpvckpu''wugtu0'Wugtu''kp''y g'i tqwr "ecp''xkgy ''kgo u''uj ctgf ''y ky ''y g'i tqwr 0

Kgo u

- É' Kpenwf gu'y gd"o cr u. "o cr "ugt xkegu. "cr r nkecvkqpu. "cpf "f cvc"hkrgu
- É' Ecp"dg"r tkxcvg. "r wdnke. "qt "uj ctgf "y ky "ur gekhke" i tqwr u0
- CI UCwj gpvkecvkqpO cpci gt

õVj ku'encuu''cmqy u''{qw''vq''o cpci g''cwj gpvkecvkqp lugewtkv{ 'tgncvgf ''gxgpvu0

]Vj g"cwj gpvlecvlqp"o cpci gt\_'tclugu"cp'CI UCwj gpvlecvlqpEj cmgpi g'y j gpgxgt"cp"cwj gpvlecvlqp" qt"ugewtk{ 'kurwg"ku"gpeqwpvgtgf "cp{y j gtg"kp"y g"CRK0K/cnq"o ckpvckpu"c"ecej g"¾p"o go qt {+"qh" etgf gpvlcnu"y cvj cxg"dggp"r tgxkqwun{ "wugf "vq"ucvkuh{ "cwj gpvlecvlqp"ej cmgpi gu0Vj ku"cmqy u" etgf gpvlcnu"vq"dg"tgwugf ."y j gtg"cr r tqr tkcvg."cpf "r tgxgpv"wppgeguuct { "qt"f wr necvg"ej cmgpi gu" htqo "dgkpi "kurwgf "y j kng"ceeguukpi "ugewtg"tguqwtegu"htqo "y g"uco g"ugewtk{ "tgcm 0/Cf f kkqpcm{." y g"ecej g"ecp"gcukn{ "dg"r gtukuvgf "kp"yj g"ng{ej ckp"uq"yj cv'kh"yj g"cr r "ku"tguvctvgf ."yj g"ecej g"ku" cwqo cvkecm{ "r tg/r qr wrcvgf "y kj "ucxgf "etgf gpvlcm"cpf "y g"wugt"f qgu"pqv'j cxg"vq"uki p"kp"ci ckp06 Kp'EwtdO GV. "ewuvqo "WKtgur qpugu"vq"cwj gpvkecvkqp"ej cmgpi gu"ctg"gpcdngf "d{"ugvkpi "vj g" cwj gpvkecvkqp"o cpci gtøu"f gngi cvg"ku"ugv'vq"Nqi kpXkgy Eqpvtqngt0

Vj g"cr r nlecvkqp"y cu"cnuq"tgi kuvgtgf "y ky "CteI KU."y j kej "etgcvgf"c"enlgpv"KF "hqt"QCwyj "402" cwy gpvkecvkqp0Dgecwug"y ku"enlgpv"KF "y cu"r tqxkf gf "vq"y g"cwy gpvkecvkqp"o cpci gt. "y g"f ghcwnv" ej cmgpi g"v{r g"vq"dg"etgcvgf "ku"QCwy 0

Kp''y g''crr.''cp''CI URqtvcn'ku'kpuvcpvkcvgf 'wukpi ''y g''WTN<u>'y y y Octei ku0eqo 0</u>'Vq''cvvgo rv'nqi i kpi 'kp.'' y g''r qtvcnøu''etgf gpvkcni'r tqr gtv{ 'ku'ugv'wukpi ''y g''ygzv'gpvgtgf 'kp''y g''ygzvhkgnf u''qp''y g''wugt'kpvgthceg0

### Dnvgvqqvj 'Eqppgevkqp

Kp''y g'EKU.''y g'kRcf 'ku''y g'Dnwgvqqy ''Nqy 'Gpgti { "\*DNG+'egpvtcn'cpf ''y g'J O/33'Dnwgvqqy '' Oqf wg'ku''y g''qpn{ ''r gtkr j gtcn0Chygt 'o cnkpi ''y g''eqppgevkqp.''y g''kRcf 'ku''y g''ugtxgt ''cpf ''y g'J O/'' 33''ku''y g''enkgpv0Vj g''cr r 'ku''y tkwgp''uwej ''y cv'kk'ecp''qpn{ ''eqppgev'vq''qpg''f gxkeg''cv'c''ko g0

### Guvcdrkuj kpi 'tj g'Eqppgevkqp

Vj ku'cr r 'wugu'c'o qf khlgf 'xgtulqp''qh'j qkdgti øu'Dnvgvqqy Ugtken'j grr gt'encuu'\q'o cpci g''y g'' Dnvgvqqy ''eqppgevlqp<u>''\*j qldgti 40</u>'Vj g''uqhvy ctg'kpuvcpvkcvgu'c'i rqden'Dnvgvqqy Ugtken'qdlgev'ecrngf '' ugtken'y j kej 'o cpci gu''y g''Dnvgvqqy ''eqppgevlqp''hqt''cm''qh'y g''cr r 0C''r tqvqeqnlf grgi cvg'r cwgtp'' cmqy u''qy gt''hkrgu'\q'tgur qpf ''q''ugtkenøu''gxgpvu0'th''c'hkrg'kp''y g''cr r 'tgs wktgu''Dnvgvqqy '' eqo o wpkecvkqp''hvpevkqpcrkv{. 'kv'uko r n{ ''cf qr vu''y g''Dnvgvqqy ''r tqvqeqnlcpf ''ugvu''ugtkenøu''f grgi cvg'' gs wen'\q''ugth0

Vj g'htuv'xkgy "eqpvtqngt" vj cv'ecmu'hqt "Dnvgvqqvj "ku'vj g'Uecppgt" Xkgy "Eqpvtqngt0" Vj g'wugt "ku" r tgugpvgf "y kj "c"vcdng" qh'cxxkrcdng" f gxkegu" vq "eqppgev'vq0" Vj g"Uecppgt" Xkgy "O qf gn'ku'c" f grgi cvg" qh'ugtkon" cpf "y j gp" ugtkonF kf F kueqxgtRgtkr j gtcn\*+'ku'ecngf." kv'cf f u'vj g'f gvgevgf "r gtkr j gtcn'vq" c" Xctkcdng" cttc { "qh'EDRgtkr j gtcn10" Vj g"xkgy "eqpvtqngtøu" WKVcdngxkgy "ku'r qr wrcvgf" d{ "vj g"pco gu" qh'r gtkr j gtcn1" kp" vj g"xkgy "o qf gnøu" cttc { ."cpf" gcej "vko g"vj g" vj g" vugt" vcr u'c" tqy "kp" vj g" cttc { ."vj g"xkgy "eqpvtqngt" y kn'tghtguj "ku" WKVcdngXkgy 0"Y j gp" vj g" vugt" vcr u'c" tqy "kp" vj g" vcdngxkgy ."vj g'kRcf "y kn'eqppgev'vq" vj g" cuuqekcvgf" r gtkr j gtcn" cpf "uj qy "vj g" pgzv'xkgy "wr qp" uweeguuhwn'eqppgevkqp0

Kp"ý g"crr."ý g"Uccppgt "Xkgy "Eqpytqmgt"ku"tg/wugf "kp"ý g"ugvkpi u"ugevkqp"cpf "ý g"u{uvgo "uvcwu" ukf g"r cpgn/Kk"ý g"kRcf "ku"cntgcf { "eqppgevgf "vq"c"f gxkeg."ku"pco g'y kn"dg"f kur m { gf "kp"ý g"hktuv" ugevkqp"qh"ý g"vcdng."y j kej "ku"ncdgngf "õEwttgpvn{"Eqppgevgf "Vq0ö

Vj g'f kci tco "qp''y g''pgzv'r ci g'ku''c''j ki j/ngxgn'i tcr j ke''tgr tgugpvcvkqp''qh''y g''hvpevkqpu''vugf ''q'' f kueqxgt''cpf ''eqppgev''vq''c''r gtkr j gtcn0'Ky''cnuq''kmvuvtcvgu''y g''hvpevkqpu''vugf ''vq''ugpf ''cpf ''tgegkxg'' xcnwgu.''y j kej ''ku''f kuewuugf ''kp''y g''pgzv''ugevkqp''qh''y g''f qewo gpv0



Hi wt g'33 - Hwpevkqpu'wugf ''vq'f kueqxgt. "eqppgev''vq. "cpf "eqo o wpkecvg'xkc'Dnvgvqqy 0

### Ugpf kpi 'Xcnwgu'Dgvy ggp'kRcf 'cpf 'Ektewky

Vcmkpi "o gcuwtgo gpwl'y kj "ý g'EKU'ku'ý g"eqtg"qh'ý g"crr."cpf 'ý ku'hwpevkqp'kpxqnxgu" ugxgtcn'uwdrtqeguugu'/ "etgcvkpi "c"ewuvqo "r qr qxgt."xcnkf cvkpi "ý g"o gcuwtgo gpv."u{ pekpi "y kj "ý g" CteI KU'hgcwtg"ugtxkeg."cpf 'ugpf kpi "xcnwgu'dgw ggp'ý g"ektewkøu"o ketqeqpvtqngt"cpf "ý g"crr0' Vj g'hqewu"qh'ý ku'ugevkqp"qh'ý g"f qewo gpv'ku'ý g"hqy "qh'f cvc"dgw ggp'ý g"ektewkøu" o ketqeqpvtqngt"cpf "ý g"crr0



Hki wt g'34 < Wug'ecugu'hqt ''vcmkpi ''o gcuwt go gpvu''wukpi ''y g'EKU0

Gcej 'tco r '\{r g'j cu'ku'qy p'\u00e9gg'kp'\j g'ZEqf g'\uqt {dqctf '\j c\'ku'f gf kec\u00e9f '\q'\cmkpi " o gcu\u00e4to gp\u0Ng\u009\gwgtgf 'd\u00e4\u00e4qpu'ctg'\u00e7c {gtgf 'qp'c'f kci tco "qh'\j g'tco r 0'Vj g'\u00e7gwgtu.'\j gkt" cuuqekc\u00e9gf 'o gcu\u00e4to gp\u.'cpf 'e\u00e4d/tco r 'f kci tco u'y gtg'eqr kgf 'htqo '\j g'L\u00e4pg'4239'\u00e4gtgygtqp'' RgppF QV\u00e4u'EU/6623'hqto 0'Vj g'\u00e7c {q\u00e4u'qh'\j gug'kp\u00e4ce\u00e4ksg'r ci gu'ctg'etgc\u00e4gf '\u00e4pg'y g'ZEqf g'' u\u00e4qt {dqctf =\v00e4vg g'd\u00e4u\u00e4pguu'\u00e4j g'\v00e4gg' g'Tco r O gcu\u00e4ksg gp\u00e4ksg Eqp\u00e4qp\u00e4ksg '' g'\u00e4co g'\u00e4ksg '' ce\u00e4qpu0Dgec\u00e4ug'\j g'\u00e4co g''d\u00e4kguu'\u00e4nj ke'ku'\u00e4ugf 'tgi ctf muu'qh'e\u00e4d/tco r '\u00e4r g.'\j g'\u00e4co g'\u00e4kgy '' eqp\u00e4qmgt'ku'\u00e4ggul'\u00e4i g''\u00e4co gp\u00e4kggul'\u00e4kggul'

Cu'uj qy p'kp'Hki wtg'34. 'c''o gcuwtgo gpv'dwwqp''r cuugu''y g''uctvluvqr ''eqo o cpf u'htqo ''y g'' o gcuwtgo gpv'r qr qxgt ''q'ku'f cvc'kgo .''q''y g'f cvc'kgo øu'Dnwgvqqy ''j cpf ngt0'Vj g''Dnwgvqqy '' j cpf ngt''ugpf u'y g'f gxkeg''q''ugtkcn'\*c'Dnwgvqqy Ugtkcn'qdlgev+0Cu'c'Dnwgvqqy ''ugtkcn'f gngi cvg. ''kv'' y cku'hqt ''y g''ougtkcnF kf TgegkxgUvtkpi ö''uki pcn''cpf ''y gp''wugu''y g'tgegkxgf ''xcnwg''q''ugv'ku''r tkxcvg'' xctkcdng''xcnwg'tgegkxgf 0'Vj g''r tkxcvg''r tqr gtv{ ''ku''gzr qugf ''cu''cp''Qdugtxcdng.''y j lej ''y g''f cvc'kgo '' qdugtxgu''q''ugv'ku''r tkxcvg''r tqr gtv{ ''oxcnwgö0'Hkpcm{.''y g''o gcuwtgo gpv'dwwqp''qdugtxgu'oXcnwgö'/'' O gcuwtgo gpvF cvcKgo øu''r wdnke''o gcuwtgo gpv'xcnwg''/''cpf ''wugu''y g''o quv'tgegpv'uvtkpi ''go kwgf '' htqo ''y g''wtgco ''q''wr f cvg''ku''kwg. ''y wu'f kur rc{kpi ''y g''o gcuwtg' ''y g''wgt0

### Ceegudepi 'cpf 'Gf kelpi 'CteI KU'J quegf 'O cr

### Fkrnc{kpi 'tj g'O cr

Vq"ceeguu'ý g"o cr."cp"CI URqtvcnKgo "ku'etgcvgf "wukpi "kw'kgo "KF 0'Ki'ý g"wugt"j cu'mi i gf " kp"y ký "xcnkf "etgf gpvkcnu"cpf "ý g"o cr "ku'uj ctgf "y ký "ý g"wugtøu"qti cpk cvkqp. "ý gp"ý g"r qtvcn'y km" uveeguuhivm{ "mqcf 'ý g"kogo 0'Ki'ý g"wugtøu"etgf gpvkcnu"ctg"eqttgev'dwi'f qgu"pqv'j cxg'xkgy kpi " r gto knukqpu. "ý gp"c"i tg{ "uetggp"y km'cr r gct0'Vj g"o cr "ku"cuuki pgf "vq"ý g"O cr Xkgy Eqpvtqmgtøu" CI UO cr Xkgy ."y j kej "f kur nc{u'ý g"kpytcevkxg"o cr "vq"ý g"xlgy gt0

Y j gpgxgt 'vj g'o cr 'mcf u. 'kv'y km'egpvgt ''cv'y g''wugtøu''ewttgpv'mecvkqp. 'y ky ''c'| qqo ''uecrg''qh'7220' Cv'y ku'uecrg. 'ukf gy cmu''ctg''engctn{ ''xkukdrg''cpf ''o kpko cn'cf lwuvo gpv'vq''y g''o cr øu''gpxgmr g''uj qwrf '' dg'tgs wktgf 0'Vj g'kpkkcn| qqo ''uecrg''ecp''dg''ej cpi gf ''kp''y g''cr r ''ugwkpi u0'Dgecwug''y g''o cr ''cpf ''ku'' f cvc''ctg''j quvgf ''qpnkpg. ''kv'y km'qpn{ ''hwpevkqp''kh''y g''EKU'ku''eqppgevgf ''vq''y g''kpvgtpgv0

### Cff kpi 'Hgc wt gu

Qpeg'ý g'wugt"eqphto u'j ku'qt'j gt"ewtd'tco r 'v{r g'ej qkeg.'c'pgy 'kpuvcpeg''qh'EwtdTco r 'ku'' cuuki pgf 'vq'ý g'i nqdcn'ewtdTco r 'xctkcdng0Cv'ý ku'r qkpv''ý g''qpn{ 'kphqto cvkqp'kv'eqpvckpu'ku'ý g'' ewtd'tco r 'v{r g'cpf 'c'tgcf { VqGf kv'dqqngcp.'y j kej 'ku'ugv'vq'vt wg0'Vj ku'dqqngcp''eqphto u'ý cv'ý g'' wugt 'ej qug''c'tco r 'v{r g'htqo ''y g''ukf g'r cpgn'ko o gf kcvgn{ ''dghqtgj cpf =''qy gty kug.''vcr r kpi ''y g'' uetggp''o wnkr ng''ko gu'kp''uweeguukqp''y qwf ''tguvn/'kp''o wnkr ng'hgcwtgu''qh''y g''uco g'v{r g''dgkpi '' etgcvgf 0'Y j gp''y g''wugt''cr u''y g''o cr .''y g''CI UI gqXkgy Vqwej F gngi cvg'f gvgto kpgu'y g''o cr '' nqecvkqp'\*cp'CI URqkpv+''y cv'y cu''qwej gf 0'Wukpi ''c''ugtkgu''qh'hwpevkqpu'htqo ''y g''O cr Xkgy O qf gn'' y g''xkgy ''r tqeggf u''q'f gvgto kpg''y j gy gt ''qt''pqv'c''hgcwtg''y cu''qwej gf ''cv'y cv'nqecvkqp0'Kf'| gtq'' hgcwtgu''ctg''kf gpvkhgf .''y g''ewtdTco r ''xctkcdng''ku''pqv'pkn''cpf ''tgcf { VqCff 'ku''tvg.''y gp'' ewtdTco r øu''etgcvg''hwpevkqp''\*ugg'õVj g'EwtdTco r ''Encuuö''ugevkqp+'ku''ecnngf ''q''cff ''c''pgy ''hgcwtg'' y g''y g''f guki pcvgf ''hgcwtg''cdng0

### Hknygtkpi'tjg'Ocr'Fkurnc{

CteI KU'hġcwtg''cdngu'ecp''dg''s wgtkgf ''wukpi ''US N''gzrtguukqpu0'Vj g''crr''dwknfu''c''s wgt {'' rctco gygt''dcugf ''qp''qrykqpu''ugngeygf ''htqo ''o wnkrng''ej qkeg''o gpwu''cpf ''ugctej gu''cm''qhi'yj g''o crøu'' vcdngu''hqt''hġcwtgu''yj cv'o cygi ''yj g''rctco gygtu0

Vj g'hkngt 'o gpw'ku''f kur nc { gf ''cu''c 'pcxki cvkqp''eqpvtqngt ''cuuki pgf ''q'O O F tcy gt Eqpvtqngtøu'tki j v' f tcy gt ''eqpvckpgt0'Y j gp''qpg''qh''y g'hkngt ''ecvgi qtkgu'ku''cr r gf ''\*eqwpv{.''ewtd'tco r ''v{ r g. ''gw6+.''y g'' eqttgur qpf kpi ''xkgy ''eqpvtqngt ''qh''hkngt ''qr vkqpu'ku''r wij gf ''qpvq''y g''pcxki cvkqp ''eqpvtqngt ''ucen0'Vq'' ugpf ''f cvc''dgy ggp''r wij gf ''xkgy ''eqpvtqngt ''cpf ''y g''tqqv'xkgy ''eqpvtqngt.''c''r tqvqeqn'y cu''etgcvgf 0' Vj g''vqr ''xkgy ''eqpvtqngt 'ku''y g''f grgi cvkpi ''encuu.''cpf ''y g''tqqv'ku''y g''f grgi cvg''encuu0'Kp''gcej ''qh''y g'' r tqvqeqn'hwpevkqpu''y cv''ctg'ko r ngo gpvgf ''kp''y g''f grgi cvg''encuu.''cp''wr f cvgS wgt { Rctco gvgtu'' hwpevkqp''ku''ecngf 0'Vj g''y j gtg''encwug''hqt''y g''s wgt { 'ku''etgcvgf ''d { ''ksgtcvkpi ''y tqwi j ''xcnwgu'uvqtgf ''kp'' ucem0C''NKMG''gzr tguukqp''ku''etgcvgf ''wukpi ''y g''uceni'xcnwgu ''cpf ''y g''y g''gzr tguukqp''ku''cr r gpf gf '' q''y g''gzknkpi ''y j gtg''encwug''uvtkpi 0'P gzv''gcej ''qh''y g''o cr øu''hgcwtg''cdngu''ctg''s wgtkgf ''wukpi ''y cv'' gzr tguukqp0'Cp { 'hgcwtgu''y cv'o cvej ''y g''gzr tguukqp''ctg''ugngevgf ''qp''y g''o cr 0

### Fkrnc{kpi 'tjg'Ocr'Ngigpf

Vj g''ngi gpf 'ku''c'\cdng''xkgy ''eqptqngt''y cv'\qi i ngu'kpvq''xkgy ''cu''c'tki j vlukf g'o gpw''wlkpi '' O O F tcy gtEqpvckpgt0'Gcej ''n {gt''ku''c''pco gf ''ugevkqp''kp''y g''cdng.''cpf ''ku''uvdnc {gtu''ctg''tqy u''kp'' y g''ugevkqp0'Vj g''ngi gpf ''o qf gn'eqpvckpu''cp''cttc { ''qh'CI UNc {gtEqpvgpv'y cv'uvqtgu'y g''nc {gtu''cpf '' uwdnc {gtu''hqwpf 'kp''y g''o cr øu''qr gtcvkqpcn''nc {gtu.''cpf ''c''f kevkqpct { ''qh'CI UNgi gpf Kphq''y cv'uvqtgu'' lphqto cvkqp''uwej ''y g''nc {gtøu''pco g''cpf ''ku''u{o dqn0'Vj gug'f cvc''uvtwewtgu''ctg''r qr wncygf ''d{ '' tgewtukxgn{ ''nqr kpi ''y tqwi j ''y g''o cr øu''qr gtcvkqpcn''nc {gtu''cpf ''y gk''uvdnc {gtu0'Vj g''WKVcdngXkgy '' egmuø'\gzv''ncdgn''cpf ''lo ci g''xkgy ''ctg''ugv'wukpi ''y g''CI UNgi gpf Kphq''f kevkqpct {0'Vj g'' CI UNc {gtEqpvgpvCttc { 'f gygto kpgu''y g''pwo dgt''qh'tqy u''cpf ''ugevkqpu'kp''y g''cdng0

OGEJ CPKECN'FGUKLP'CPF'HWPEVKQPCNKV[

### O gej cplecnF guli p'Qxgt xlgy /'I gpgt cnHgc wt gu



Hki wtg'35<Hwm{ "cuugo drgf 'EKU

Vj g'pgy 'EKU'ku'uwduvcpvkcm{ 'uo cmgt.'hki j vgt''cpf ''o qtg''o cpgwxgtcdmg''y cp''y g''r tgxkqwu''r tqvqv{ r g'' \*Hki wtg'35+0/Cm'gngevtqpke''eqo r qpgpvu''ctg''j qwugf ''qp''c'' ø/'y kem'/CDU''r nuvke''dcug''r nvg0/C'' j cpf mg'ku''cvcej gf ''vq''y g''dcug''r nvg''d{ ''c''j kpi g.''cmqy kpi ''y g''wugt''c''j ki j ''f gi tgg''qh''o cpgwxgtcdktw{ '' cpf ''hrgzkdktw{ ''\*Hki wtg''36+0/Vj g''dcug''r nvg''ku''o gcpv''vq''dg''ngr v'hrcv'qp''y g''i tqvpf ''y j krg''cmkpi '' o gcuwtgo gpvu''dwi'tgo ckpu''uo cml'cpf ''hki j v'uq''y cv'uvggtkpi ''qt''r kemkpi ''y g''EKU'wr ''y kml'nkngn{ ''pqv'' vktg''y g''wugt0'Vj g''qvcn'y gki j v'ku'707; ''Ndu0\*xu0350, 'hqt''y g''r tgxkqwu''r tqvqv{ r g+0



Hi wt g'36<Dcug'r rcvg'y kj 'j cpf rg''cpf ''grgevtqpke''eqo r qpgpvu0'Vj g'j cpf rg'ku''cvcej gf ''vq''y g'' dcug'r rcvg''d{ ''c''hrgzkdrg'j kpi g0

### Wig

Vj g'EKU'ku'kpvgpf gf ''vq''dg'j grf 'kp''htqpv'qh''yj g''wugt''cpf ''tqngf ''cnpi ''yj g''i tqwpf ''cu'y qwrf '' dg'f qpg'y kj ''c''o gvcnff gvgevqt0'Vj g''kRcf ''ku''cwcej gf ''vq''yj g''vqr ''qh''yj g'j cpf ng''qp''c''uvcpf ''cpf '' r tqvgevgf ''d{ ''c''O qr j kg''Ur ceg''Rcent'\*'ugg''ugevkqp''Ektewkk'F guki p''cpf ''Hwpevkqpcrkk{ ''/''Rqy gt ''Uwr r n{ '' hqt''hwty gt ''f gvckni''cdqwi'yj g''ur ceg'r cemt0'Vj g''kRcf ''ecp''dg''tgo qxgf ''htqo ''yj g''ecug''cpf ''r qy gtgf ''qh'' ku''qy p''dcwgt { ''qt''r rcegf ''kp''yj g''ecug''cpf ''tgej cti gf ''f wtkpi ''wug0

J gki j v'f ko gpukąpu''ctg''o gcuwtgf 'wukpi ''y g''uqpct''kp''y g''tqpv'qh''y g''dcug''r rcvg''\*ugg''Ektewks'F guki p'' cpf ''Hwpevkąpcrkx{ ''/''Uqpct''F kurcpeg''Ugpuqt+0Y j gtgcu''y g''tgxkqwu''r tqvqv{r g''qh''y g''EKU'nghv'y g'' uqpct''wpr tqvgevgf ''htqo ''ur ncuj ''qt''htqo ''dgkpi ''ukf g/ uy kr gf. ''y g''uqpct''pqy ''ku''r tqvgevgf ''htqo '' wpf gtpgcyj ''d{ ''cwcej kpi ''y g''uqpct''q''cp''CDU'r ncvhqto ''y j kej ''gngxcvgu''y g''uqpct''uwej ''y cv'y g'' ur gcngtu''ctg''pqv'r tqvtwf kpi ''f qy py ctf. ''y j kg''uxkn''cmy kpi ''c''uo cm''unqv'y tqwi j ''y j kej ''y g'' wntcuqpke''r wng''ecp''r cuu'\*Hki wtg''37+0Eqo r ctgf ''q''y g''r tgxkqwu''r tqvqv{r g.''y g''uqpct''ku''cnq''ngr v'' ngy ''q''y g''i tqwpf ''q'tgf weg''y g''hnghy qqf ''qh''ceekf gpvcm{ 'f gvgevkpi ''y g'y tqpi ''uwfreg0J qtk| qpvcn'' f kurcpegu''ctg''o gcuwtgf ''wukpi ''y g''gpeqf gt ''pgct''y g''tki j v'y j ggn\*'ugg''Ektewkv'F guki p''cpf '' Hvpevkqpcnkv{ ''/'Gpeqf gt+0I tcf g''ku''o gcuwtgf ''wukpi ''y g''ceegngtqo gvgt ''sugg''Ektewkv'F guki p''cpf '' Hvpevkqpcnkv{ ''/'Ceegngtqo gvgt+0Ukpeg''y g''r tgxkqwu''r tqvqv{r g.''y g''ceegngtqo gvgt''j cu''dggp''o qxgf '' Htqo ''y g''qr ''qh'y g''uvggtkpi ''tqf ''q''y g''dcug''r ncvg.''y j kej ''ku''eqo r ctcvkxgn{ ''uwff kgt''cpf ''ny gt''q''y g'' i tqwpf .''y wu''cmy kpi ''hqt''o qtg''ceewtcvg''cpf ''ngu''pqku{ ''o gcuwtgo gpwu''qh''i tcf g0



Hi wt g'37<Uqpct"\*gpektengf "kp"tgf +'ku"gngxcvgf "htqo "ý g"tguv"qh"ý g"dcug"r novg"vq"r tgxgpv"ý g" ur gengtu"htqo "r tqvtwf kpi "qw"htqo "wpf gtpgevý "ý g"dcug"r novg. "ngcxkpi "ý go "xwpgtcdng"vq"y cvgt" cpf "eqntkukqpu0

### Rct vu

### J cpf ng

C "eqo o gtekcm{ "cxckrcdrg"j cpf rg'ku'wugf "hqt 'y g'EKU'j cpf rg."cpf 'hgcwtgu'c'i tkr."cp"cto "dtcengy" cpf "cp"gti qpqo ke''uj cr g'\*Hki wtg'38+0Vj g'kRcf 'ku'j grf 'kp"cp'kUj qv'Rtq'Cf lwuxdrg''Vcdrgy'O qwpy" y j kej "enco r u'qp''q''y g''qr "qh''y g''j cpf rg0Vj g''j cpf rg''ngpi y "ecp"dg"cf lwuyf 'dgw ggp'68ø/cpf "74ø/wukpi "c'r wuj /dwwqp''qp''y g''i tkr 0



Hi wt g'38<EKU'j cpf rg0kRcf 'ku'cvcej gf 'xkc''c''vtkr qf ''enco r gf ''vq''y g''j cpf rg0Cto ''j qrf gt''cv''y g'' vqr ''qh''y g''j cpf rg''j grr u''vq''nggr ''y g''EKU''uvgcf {0

### Dcug'Rrcvg

Vj g'dcug'r rcvg'ku'o cf g'htqo 'hrcv' øø'y keniCDU'r rcuvke''uj ggv'\*Hki wtg'39c+0'Vj g'dcug'r rcvg'' ku'tki kf ''uq''cu''q'o kpko k g'o gcuwtgo gpv'gttqt ''f vg''q'hrgzkpi 0'Ur cegu'kp''y g''dcug'r rcvg''o cng'tqqo '' hqt''y j ggni'cu''y gm'cu'CDU'r rcuvke''unqui'd{ ''y j kej ''y g''y j ggni'ctg''cwcej gf ''q''y g''dcug'r rcvg'\*Hki wtg'' 39d+0'Vj gtg''ctg''cnq''ur cegu'hqt''unqui'd{ ''y j kej ''y g''j cpf rg''ecp''dg''cwcej gf 0'Vj g''dcug'r rcvg.''unqu.'' cpf ''uqpct''r rcvhqto ''\*ugg''ugevkqp''O gej cpkecn'F guki p''cpf ''Hwpevkqpcrkv{ ''/'I gpgtcn'Hgcwtgu''hqt'' f gvckni'cdqwi'y g''uqpct''r rcvhqto +''ecp''cm'dg''rcugt/ewi'ewi'htqo ''c''ukpi rg''46z46z ø''uj ggv'qh''CDU r muvke "\*Hki wtg'39e+0Umwl'ctg''cfj gtgf 'vq''y g''dcug'r mvg''wukpi "gr qz {0J gm/eqkml'ctg''kpugtvgf 'kpvq'' y g''dcug'r mvg''kpvq''y j kej ''y g''uqpct''cpf 'RED''dqctf ''ecp''dg''dqngf '\*Hki wtg''39f+0



Hki wt g'39c '\*vqr 'ighv+<Dcug'r rcvg'y kj 'pq'cvcej o gpvu0Hki wt g'39d '\*vqr 't ki j v+<dcug'r rcvg'y kj " urqui'hqt'y j ggni'cpf 'j cpf rg'cu'y gm'cu'y j ggni'cvcej gf 0Hki wt g'39e'\*dqvvqo 'ighv+<Dcug'r rcvg" cpf 'tgrcvgf 'r ctvu'dgkpi 'r tgr ctgf 'hqt 'rcugt/ewvkpi 'd{ 'r rcekpi 'r ctv'r tqhkrg'qp'Uqrkf Y qtmu" f tcy kpi 0Cm' øø'y keni'rcugt/ewv'r ctvu'ecp'dg''ewvi'rtqo 'c'ukpi rg'dqctf 0Hki wt g'39f '\*dqvvqo " t ki j v+<dcug'r rcvg' y kj 'y j ggn.'urqvu.'uqpct'cpf 'RED'cvcej gf 0

Gpeqf gt'I gctu



Hki wt g'3: <Gpeqf gt "\*gpektengf "kp"tgf +"eqwr ngf "\q"y j ggn'xkc" w q"i gctu0

J qtk qpvcn'f knopegu''ctg''o gcuwtgf ''wikpi ''cp''gpeqf gt ''eqwr ngf ''q''c''y j ggn'qh'y g''EKU'xkc''y q''ur wt'' i gctu''\*Hki wtg''3: +0'Vj g''gpeqf gt 'ku''cvocej gf ''q''c''ncti g''i gct''qh'r kej ''tcf kwu''y j kej ''ku''o guj gf 'y kj '' c''uo cmgt''i gct''qh'tcf kwu'y j kej ''eqppgevu''q''c''y j ggn'qh'tcf kwu''0Cru''y g''EKU'o qxgu''hqty ctf .'' y g'y j ggn'tqvcvgu''cpf ''f tkxgu''y g''tqvcvkqp''qh'y g''gpeqf gt ''uj ch0'Vj g''tqvcvkqp''qh''y g''gpeqf gt 'ku'' eqwpvgf ''d{ ''y g''Ctf wkpq''cu''õerkemiö'\*ugg''ugevkqp''Ektewkv'F guki p''cpf ''Hwpevkqpcrkv{ ''/'Gpeqf gt ''hqt'' f gvckn+0'Vj g''tqvcvkqp''kp''tcf kcpu''qh'y g''gpeqf gt '' $\mathcal{O}_{enc}$ .''ncti g''i gct'' $\mathcal{O}_{k0}$  cm'i gct ''cpf  $\mathcal{O}_{s,j}$  ggn ctg''tgrcvgf ''d{ ''g svcvkqp''7<

$$r_{lg}\Theta_{enc} = r_{lg}\Theta_{lg} = r_{sg}\Theta_{sg} = r_{sg}\Theta_{w}$$
\*7+

Vj g'tgrcvkqpuj kr "dgw ggp"y j ggrltqvcvkqpu"cpf "f kuvcpeg"vtcxgrgf "f "ku'i kxgp"d{ "gs wcvkqp'8<

$$d = r_w \Theta_w$$
 \*8+

í "y j kej "ecp"dg"uwduvkwwgf "kpvq"gs wcvkqp"7"vq"qdvckp"vj g"tgrcvkqpuj kr "dgwy ggp"f kuvcpeg"vt cxgrgf " cpf "gpeqf gt"tqvcvkqp<

$$\Theta_{enc} = (r_{sa}d)/(r_{la}r_{w})$$
<sup>\*9-</sup>

Dgecwug'y g"gpeqf gt"j cu'582"enlemi'r gt"tqvcvlqp."y g"tgncvlqpuj kr "dgw ggp"enlemi'cpf "f kuvcpeg" vtcxgngf "ecp"dg"f gvgto kpgf <

$$clicks = (360 \times r_{sa}d)/(2\pi r_{la}r_{w})$$
\*:+

Wukpi " $r_{sg} = \frac{5}{32} \not{} as$ "  $r_{lg} = | \not{} as$  cpf " $r_w = | \ddot{o}$ ."k/ecp"dg"hqwpf "y cv'y g"EKU"o gcuwtgu"j qtk qp cn f kucpeg"y kj "c"tguqnwkqp"qh $\frac{1}{20}$ 

#### EKU'DKNN'QH'O CVGTKCNU

Rctv	%	Wplv	Nlpnitq O cpwlcevwt gt	Rt leg'r gt " Wpls/*&+,
46z46z316ö''Uj ggv'qh'CDU'Rrcuxke	3	3	OeOcuvgt/Ectt	6; 096
34z34z318ö''Uj ggv'qh'CDU'Rrcuxke	3	3	OeOcuvgt/Ectt	6043
Dqwpv{ 'J wpvgt 'Vtcengt 'KX''Vqr 'Tqf	3	3	<u>Dqwpv{'Jwpvgt</u>	3: 0, 7
Dqwpv{ 'J wpvgt 'Vtcengt 'KX'Dqwqo 'Tqf	3	3	<u>Dqwpv{'Jwpvgt</u>	360,7
Dqwpv{ 'J wpvgt 'Vtcengt 'KX'Cto 'Dtcengv	4	4	<u>Dqwpv{'Jwpvgt</u>	5092
Dqwpv{ 'J wpvgt 'Vtcengt 'KX''i tkr	3	3	<u>Dqwpv{'Jwpvgt</u>	50,2

3087øø'F koo gvgt 'Rrcuvke''Y j ggnu	5	Rcem'qh'' 6	Konlopg''Y ctgj qwug	32
7088øø'Fkco gvgt. '4øø'Nqpi 'Cnvo kpvo 'Tqf	5	3''ħv'tqf	<u>I co w</u>	3088
øø'Nqpi '%8'J gz'Ucpfqhhu	6	Rcem'qh'' 32	<u>I tckpi gt</u>	50,2
ø'Nqpi '% ''Uqengv'J gcf 'Ecr 'Uetgy u	7	7	OeOcurgt/Ectt	4094
%8'J gz'₽ w	6	3'Rcem' qh'322	<u>OeOcuvgt/Ectt</u>	3046
20787\$''QF ''Wpyj tgcf gf ''Ur cegt	6	6	OeOcurgt/Ectt	60,3
ø'Fkco gvgt."4ø/Nqpi "Uj qwrf gt"Uetgy	3	3	OeOcuvgt/Ectt	35082
3/86"Vj tgcf "Uk g."31: \$"Nqpi "Uetgy	6	3'Rcem' qh'72	<u>OeOcuvgt/Ectt</u>	7047
32/46"Vj tgcf "p{mp"kpugtv"memipwv	4	3'Rcem' qh'322	<u>OeOcuvgt/Ectt</u>	508:
79377M59: "Uckprguu"UvggrlDcmlDgctkpi u	4	4	OeOcuvgt/Ectt	8065
kUj qv'Rtq''Vcdrgv''Vtkr qf 'O qwpv	3	3	<u>kUj qv'Rtqf vevu</u> " <u>Kpe</u>	4;07
kUj qv'Rtq'Rqmg'Encor 'Oqwpv	3	3	<u>kUj qv'Rtqf wew</u> " <u>Koe</u>	360 :
86/vqqyi.''4øø'r kæj 'f kco gvgt 'i gct	3	3	P1C'**5F'Rtkpvgf+	
42/vqqyi.'7138øø'r kæj 'f kco gvgt 'i gct	3	3	P1C''*5F''Rtkpvgf+	
U7/582/472/PG/U/D'Gpeqfgt	3	3	WU'F ki kcn	92087
NKL5NX24FNVT 'Ceegrgtqo gvgt	3	3	<u>Fkikng{</u>	: 089
Ctfwkpq'Pcpq	3	3	<u>CıkGzrtguu</u>	406:
JO/33'Dnwgwqqyj'Oqfwrg	3	3	<u>CıkGzrtguu</u>	508:
J E/UT26'Wnstcuqpke'Tcpi kpi 'O qf wng	3	3	<u>Ur ct minop</u>	50,7
O qr j kg"Ur ceg"Rcem	3	3	<u>Oqrjkg</u>	3;;0,7
kRcf 'O kpk	3	3	<u>Crrmg'Kpe</u>	5;; @2

406z5075øø'RED'Dqctf	3	3	<u>Cfxcpegf</u> "	592029
			Ektewku	

, 'Equv'qh'uj krrkpi 'cpf 'j cpf nkpi 'pqv'kpenwfgf

# TGHGTGPEGU

<u>EqeqcRqfu'Fgx''Vgco0'õCffkpi''Rqfu'\q''cp'Zeqfg''Rtqlgev@''EqeqcRqfu.</u> ''
<u>j wrudli wkf gulegeger af ulgti 0Ceeguugf '8'F ge042390</u>
/"//0EgegcRafuQti0j wrudlegegcrafuQti10Ceeguugf '8'Fge042390
Gut 10°Cp'Qxgtxkgy 'qh'Cwtkdwg'f qo ckpuô I gqf cvcdcugu'''CteI KU'F gumqr 06'CteI KU'Rtq."
j wru⊲lrtq@tei ku@eqo lgplrtq/crrljgrlfcvcligqfcvcdcugulqxgtxkgy lcp/qxgtxkgy/qh/"
cwtkdwg/f qo ckpuQ vo 0Ceeguugf '37'F ge042390
/"//0oCwtkdwg"~Fghkpkkqp0o"Gutk"Uwrrqtv1 KU"Fkevkqpct{."jwrudluwrrqtvQutk0eqo 1gp1qyjgt/"
tguqwteguli ku/fkevkqpct{lvgto lcwtkdwvg0Ceeguugf '37'Fge042390
/"//0õHgcwtg"Nc{gtu0b"CteI KUQpnkpg."j wr u<1ff qe0etei ku0eqo 1gp1etei ku/qpnkpg1tghgtgpeg1hgcwtg/"
<u>m { gtul} vo 0 Ceeguugf "37 "F ge042390</u>
<u>j qkdgti 0õDnwgvqqyi Ugtkentuv khvoi'l kal v.d.": "Ugr v04237.</u>
<u>j wrudli ky wd0eqo lj qkdgti luy khoDnwgvqqyi Ugtkcn</u> 0
õO GO U'kpgt vkcnlugpuqt (ö'UV.
<u>j wr⊲ly y y 0n 0eqo leqpvgpvleeelt guqwteglvgej plecnlf qewo gpvlf cvcuj ggvli tqwr4lf: leelf gl77le</u> "
816f 1691371EF 222; 36391hkgu1EF 222; 36390 f hllet eqp vgp vlvt cpurc vkqpu1gp(EF 222; 36390 f hl
0'Ceeguugf '39'F ge0'42390
<u>Lceqdu. "Dctv0oP wu"cpf "Dqnu"qh"F gr gpf gpe { "Kplgevkqp"kp"Uy khv0o"Eqeqcecuvu. "48"Lvpg"4239.</u> "
<u>jwrudleqeqcecuvu@qolpwu/cpf/dqnu/qh/fgrgpfgpe{/kplgevkqp/kp/uykhvl0</u>
<u>Ngy. "Fcp0oCp"Kovtqfvevkqp"vq"HvpevkqpcnTgcevkxg"Rtqitcookpi0o"Fcp"Ngy"Eqfgu."Fcp"Ngy</u> "
<u>Eqf gu. "49"Lwn ("4239. "j wr dtdmi 6 cprgy (pgv14239129149 kp/kpvtqf wevkqp/vq/hwpevkqpcn"</u> "
<u>tgcevkxg/rtqitcookpi10</u>
<u>õO qf gn/Xkgy /Eqpvtqmgt0b''Crrmg''F gxgmprgt.'43''Qev04237.</u>
<u>jwrudlfgxgnqrgt0crrng0eqolnkdtct{leqpvgpvlfqewogpvcvkqpllgpgtcnlEqpegrwcnlFgxRgfkc/</u> "
EqeqcEqtg1O XE() to f()
õo qrjkg'Urceg'Rcem'y ky 'Gzvgtpcn'Dcwgt{'('54ID'Uvqtcig'hqt'kRcf'okpk'*Drcem+ö0D'('J.
<u>j wrudly y y 0djrjqvqxlfgq0eqolehrtqfwev13362;7;/</u>
TGI loqrjkga4; 22urakrcfaokpka54i dadmagzvtcadcwgt {ay kja54id0] von OCeeguugf "3: "
F ge042390
õQdugtxcdmg@'TgcevkxgZ.'j wr⊲ltgcevkxgz0qlfqewogpvcvkqplqdugtxcdmg0 von0Ceeguugf'8'Fge0'
<u>42390</u>
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j wrudlygej drqi ûlcfqqûeqo 1drqi 142381251431kqu/ctej kgewtg/rcwgtpulû
<u>Uejokfv.'Okng."cpf"Lqjp"Oqttkuqp0õkQU"Fgukip"Rcwgtpu&lt;"OXE"cpf"OXXO06"Ecrvgej</u> "
<u>Eqpuwnkpi. "Kpe0'43'Pqx04236.'jwr⊲lyyy @ccrwgejeqpuwnkpi@cqoldnqiulkqu/fgukip/</u> "
<u>r cwgtpu/o xe/cpf/o xxo 0</u>
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Uvcn/. "Cpftg0öVjg"Kpvtqfvevkqp"vq"Tgcevkxg"Rtqitcookpi"[qwaxg"Dggp"Okuukpi0b"Ikjvd."4236."
<u>j wrudli kuvli kj wdlego luvcny 1: 8: g9g; de4c9d: e3h9760</u>

õJ E/UT26'Whtcuqple'Tcpi g'Hlpf gt0ö'TqdqvUj qr0<u>j wru⊲lly y y 0tqdqwij qr0eqo 1gp1j e/ut26/</u>" wntcuqple/tcpi g/hlpf gt0j vo 10Ceeguugf ''39'F ge042390 õWhtcuqple'Tcpi kpi 'O qf wrg'J E'/''UT260ö'GNGEHtgcmu0

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### Vcumi4'Uwo o ct{

Vj g''Vcum'4''uwo o ct { 'tgr qtvgf 'f gvckrgf 'f guki p''o qf khecvkqpu'htqo ''Vcum'3''kpenwf kpi 'tgxkugf '' f tcy kpi u<'Uqrkf Y qtmu''o gej cpkecn'f tcy kpi u. ''grgevtqpkeu''rc { qwv.''cpf ''ugrgevgf ''r tqi tco o kpi '' rcpi wci g'\*KQU'wukpi ''CTEI KU'cpf ''UY KHV+="cpf 'c''dkm'qh''o cvgtkcm''pgeguuct { ''fqt ''cp{ ''ej cpi gu0' Vcum'4''eqo r krgu''cm'yj g''pgeguuct { ''r kgegu''q''gzr rckp''yj g'f guki p.''r tqi tco .''cpf ''grgevtqpkeu''dgj kpf '' yj g''EKU'dgvc''r tqvqv{ r g0'Wukpi ''yj g''hkpcrkt gf ''r tqvqv{ r g.''yj g''Vcum'5''tgr qtv'f gvcknu'yj g''xcrkf kv{ ''cpf '' tgrkcdkrkv{ ''guvkpi ''qh''yj g''EKU'f gxkeg0

### Tgiwacwlqpu'qp'Ewtd'Tcor'Flogpulqpu

Vj g'Co gtkecpu'y ký 'F kucdktkkgu'Cev'qh'3; ; 2'\*CF C+'y cu'r cuugf ''q'r tqygev'ý g'tki j u'cpf ''gpuvtg'' gs wch'qr r qtwpk{ 'hqt 'y qug'y ký 'o gpvch'qt 'r j {ukech'f kucdktkkgu/Co qpi 'y g'tgi wcvkqpu'kp'y g'' CF C''ctg''uvcpf ctf u'hqt 'y g'f lo gpukqpu'qh'ewtd'tco r u/Hqt''gzco r m. 'c'ekk{ ''ewtd'tco r ''ecppqv'j cxg'' cp'kpenkpg''gzeggf kpi ''3-34'\*60 ''f gi tggu+.''o wu'j cxg'c''o kpko wo 'y kf y ''qh'58'kp''\*, 3'eo +''cetquu'cpf '' ecppqv'tkug'o qtg'y cp'52'kp'\*98'eo +'htqo ''y g''nqy gt''uvthceg'\*33+0'Kp'3; ; 6.''y g''Wpkgf ''Uvcyu'' F gr ct vo gpv'qh'Ci tkewnwg'\*WUF C+'dgi cp'tgs vktkpi ''cm'ekkgu''q'tgrgcug'c''tcpukkqp''r ncp''qwdpkpi '' y g''uvgr u'y cv'y g''ekkgu'y qwf ''vcmg''q''o cmg''y gkt 'hcektklgu'ceeguukdng''q'y qug''y ký 'f kucdktklgu'' \*34+0'Cu'r ctv'qh'y gt ''tcpukkqp''r ncpu ''ekkgu'pggf ''q''ugth'cuuguu'y gkt 'tqcf u'cpf ''hcektklgu''q'' f gvgto kpg'y j gy gt ''qt ''pqv'y g{ ''eqo r n( 'y ký 'tgi wcvkqpu0'Kp'4228.''y g''F gr ct vo gpv'qh'' Vtcpur qtvckqp''F QV+'f gxgmr gf ''cf f kkqpcn'uvcpf ctf u ''uwej ''cu'y g''cf f kkqp''qh''g gevcdng''y ctpkpi '' uvthcegu<'c''ugtkgu''qh'uo cmi'f qo gu'dvknvlkpvq'tco r u'y cv'y qwf ''cmmy ''y qug''y ký ''xkukqp'' ko r ckto gpwl'qh'Lwnkeg''F QL+'f ggcugf 'c'pgy ''xgtukqp''qh''CF C''uvcpf ctf u'hqt'ceeguukdng'f guki p.'' y j kj 'tgs wktg'ewtd'tco r u'cy'py n( ''eqputweyf' ''q''cngtgf ''utggw.''j kj y c {'u 'cpf ''utggv/mxgn'' r gf gutkcp'y cmy c {'u'q''r tqxlf g''cp''ceeguukdng'tqwg''nt'' r gf gutkcpu''cvlpytugevkqpu'\*36+0

### Fkhlewnkgu'y ky 'Ewtd'Tcor'Cuuguo gpv

Gxgp'y ký 'tgi wrcvkqpu. 'kpceeguukdrg'ukf gy crmu'eqpvkpwg'vq'etgcvg'r tqdrgo u'hqt'y j ggrej ckt'wugtu0

C'uwtxg{"lp'P gy '[ qtmlhqwpf ''y cv': 2' ''qh'lpf kxkf wcm'lp'o cpwcn'y j ggnej cktu'cpf '95' "qh" kpf kxkf wcm'lp'o qvqtk gf 'y j ggnej cktu'eqpukf gtgf 'ewtd'tco r u''q''dg''c''dcttkgt ''q''r j {ukecn'cevkxk{ " \*37+0Cpqy jgt'uwf {''hqwpf '82' ''qh''y j ggnej ckt''wugtu'pggf gf ''q''qxgteqo g''c''dmengf ''ewtd'tco r ''cpf '' 34' ''j cxg''dggp''wpcdng''q''qxgteqo g''c''dmengf ''ewtd'tco r ''f wtkpi ''c''4: /f c{ ''r gtkqf ''\*38+0' Hwty gto qtg.''y g''r tqeguu''qh''cuuguukpi ''ewtd'tco r u''hqt''CF C''eqo r ncpeg''eqpvckpu'kpghhlekgpekgu0' Vj g'F QL'tgeqo o gpf u''y cv'cuuguuo gpwi'qh''ewtd/tco r u''ctg''eqo r ncygf 'kp''ycco u''qh''y tgg0Qpg'' o go dgt ''qh''y g''ycco ''u{uygo cvkecm{ 'tgcf u''y g''uwtxg{ ''kputwevkqpu''cmywf .''c''ugeqpf ''o go dgt ''cmgu'' y g''ewtd''tco r ''o gcuwtgo gpwi'cpf ''y g''y kff ''gco ''o go dgt''tgeqtf u''pqyu''cpf ''cmgu''r j qvqi tcr j u''qh'' y g'o gcuwtgo gpwi'\*36+0'Vj g'F QL'cmq''tgeqo o gpf u''o gcuwtgo gpwi''ctg''cmgp''wukpi ''c''cr g'' o gcuwtg.''f ki kcn'hgxgn''cpf ''f ki kcn'eco gtc0'Vj gug''o gy qf u''ctg''gf kqwu.''gti qpqo kecm{ ''kpshhekgpv.'' cpf ''vo g''eqpuwo kpi 0

### Gzkwlpi 'Vgej pqnqi { 'hqt 'Ewtd'Tcor' Cuguto gpv

Vj g''wug''qhi'f cwc''eqnngewlqp''cpf ''ctej kxcn'uqhy ctg'ku'tgeqo o gpf gf 'hqt''ewtd''tco r ''cuuguuo gpv.''cnqpi '' y ký "ý g"r tgugpeg"qh"y qtngtu"y ký "cf gs wcvg"CFC"vtckpkpi "kp"ý g"hkgrf = y g"kpvgi tcvkqp"qh"CFC" uvcpf ctf u"kpvq"r tqlgev'r ncppkpi "cpf "f gxgnqr o gpv="y g"wug"qh"wugt/htkgpf n{ "y gduksgu"r tqxkf kpi " kphqto cvkqp"cdqwi'tgi wrcvkqpu."rcy u"cpf "r tqegf wtgu="cpf "vj g"r tkqtkkk cvkqp"qh"vj g"ko r tqxgo gpv"qh" meckqpu'y kj "i tgcvgt"ko r qtvcpeg. "wug. "cpf "wti gpe{ "qh"ko r tqxgo gpv'\*39+0'C "pwo dgt"qh'uqhy ctg" vqqnı"j cxg"dggp"f gxgqr gf "hqt"i gpgtcn'o cpci go gpv"cpf "o ckpvgpcpeg"qh'ukf gy cmu. "kpenwf kpi "y g" gxcnxcvkqp"qh"ewtd"tco r u"hqt"CFC"eqo r ncpeg0'UtggvUcxgt"ku"c"vqqn"hqt"kpxgpvqt{"cpf"dwf i gv" r ncppkpi "wugf "hqt"tqcf "cpf "ukf gy cmlo ckpvgpcpeg"cpf "kpenwf gu'hgcwstgu'hqt"tcvkpi "ewtd"tco r "CFC" eqo r nkcpeg"cpf "c"i gqi tcr j ke "kphqto cvkqp"u{uvgo "\*I KU+'hqt "f kur nc{kpi "kphqto cvkqp"cu"c"o cr "\*3: +0" CteI KU."c"emwf/dcugf "I KU'r rcvhqto."cnuq"j cu"hgcwtgu"hqt"nggr kpi "cp"kpxgpvqt { "qh"ewtd"tcor u"cpf " y gkt "CFC"eqo r ncpeg"\*3; +0Vj g"uvcvg"qh"P gy "Lgtug{ "etgcvgf "c"htgg"qpnkpg"ecnewncvqt "hqt "f gvgto kpkpi " y j gy gt"c"ewtd"tco r "y cu"CFC"eqo r ncpv"\*43+0'Vj g"RTQY CR"u{uvgo "ku"wugf "hqt"gxcnvcvkpi " ukf gy cmu'cpf "ewtd"tco r u'hqt 'CFC "eqo r ncpeg"\*44+0Vj g"u{uvgo "eqpukuu"qh'c"ectv'y kj "cp"cwcej gf " kpenkpqo gvgt"hqt"o gcuwtkpi "i tcf g"cpf "c"y ktgnguu"tqm/c/y j ggn"hqt"o gcuwtkpi "f kucpeg0'F cvc"ku" vtcpuo kwgf "vq"cpf "f kur m { gf "qp"c"mr vqr "qt "vcdmgv"eqo r wgt "qp"vj g"ectv"cpf "ecp"cnuq"dg"wr mcf gf "vq"c" I gqi tcrj kecn'Kphqto cvkqp'U{uvgo '\*1 KU+'f cvcdcug0

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### O gyj qf qnqi {

Gcej 'hqewu'i tqwr 'r ctvkekr cpv'y km'eqo r ngvg'yj g'uco g'vcumu'kp'yj g'uco g'qtf gt0Gcej 'vcumiku'' gzr nckpgf 'kp'f gvckn'kp'uwdugs wgpv'ugevkqpu'qh''yj g'f qewo gpv0C m'ewtd/tco r ''gxcnwcvkqpu'y km'dg'hqt'' yj g'uco g'ewtd/tco r u 'tgi ctf nguu'qh'r ctvkekr cpv'qt ''o gcuwtgo gpv'o gy qf 0Dghqtg'yj g'ewtd/tco r '' o gcuwtgo gpvu'y gtg'vcngp. ''gcej ''r ctvkekr cpv'y cu''uj qy p'c''uj qtv'vtckpkpi <u>''xkf gq</u>0'Kp''yj ku''xkf gq. ''c'' tgugctej gt''f go qpuvtcvgu''j qy ''q''nqi kp''q''yj g''cr r .''j qy ''q''eqppgev'vq''yj g''EKU.''j qy ''q''pcxki cvg'yj g'' o cr .''j qy ''q''cf f ''c''ewtd/tco r .''j qy ''q''o gcuwtg''c''ewtd/tco r ''y kyj ''y g''EKU.''cpf ''j qy ''q''hkngt'' tguwnu0Kk'ku''cuuwo gf ''y cv'yj g'uco g''vckpkpi ''xkf gq'y km'dg''r tqxkf gf ''q''cm'pgy ''wgtu''qh''y g''r tqf wev'' y j gp''ky'dgeqo gu''eqo o gtekcm{ ''cxckrcdng0

Vj tgg"tgrkcdkrkv{ "cpf 'xcrkf kv{ "o gcuvtgo gpvu'y gtg'\cmgp"cu'r ctv'qh'y g'RgppF QV"EKUETF "Hqevu" I tqwr 0Vj g'htuv'o gcuwtgo gpv'r ctvkekr cpvu'y gtg'kpuvtwevgf "vq"eqo r ngvg'y cu'o cpwcm( "o gcuwtkpi " hkxg'f khigtgpv'ewtd/tcoru'kp'Gcuv'Nkdgtv{.'Rkwudwtij 'RC.'ugngevgf 'd{ 'RgppF QV.'wukpi 'y g'' RgppFQV'o gy qf 0Vj g'RgppFQV'o gy qf 'wugu'c'f ki kcnhgxgn'o gcuwtkpi 'vcr g'cpf 'y g'EU/6623'' hqto "vq"tgeqtf "gcej "o gcuwtgo gpv0Gcej "uwdlgev'y cu'tgur qpukdrg"hqt"o gcuwtkpi "hkxg"f khgtgpv" ewtdu. "cpf "hqwt "o gcuwtgo gpwi hqt "gcej "ewtd0"Vy q'j qtk qpwnif kuvcpeg"o gcuwtgo gpwi C "cpf "R." cpf "y q'i tcf g'o gcuwtgo gpw'E "cpf "Y 0'Y j kg"y g'hqewu'i tqwr 'r ct kekr cpv'o gcuwtgf "y g'ewtd/ tco r "cpqy gt"o go dgt"qh'y g'tgugctej "vgco "tgeqtf gf "y g"o gcuwtgo gpv'qp y g'RgppF QV'EU/6623" hqto 0Vj g'ugeqpf 'o gcuwtgo gpv'\cmgp'y cu'o gcuwtkpi 'y g'uco g'hkxg'ewtd'tco r u'y kj 'y g'EKU' f gxkeg0Hqt''y ku'\cum''y g'EKU'tgeqtf u''cm'ewtd/tcor ''o gcuwtgo gpvu.''uq''y g'r ctvkekr cpvu''y gtg'' tgur qpukdıg'hqt"cm'cur gevu'qh'y g'o gcuwtkpi 'r tqeguu0Vj g'y kf 'o gcuwtgo gpv'vcmgp'hqt y ku'hqevu' i tqwr ''y cu''vko g0'Vko g''y cu''o gcuwtgf 'hqt "dqyj ''o cpwcn'cpf 'EKU''ewtd''tco r ''o gcuwtgo gpw0'Hqt'' o cpwch'wo g'o gcuwtgo gpw. 'wo g'y cu'tgeqtf gf 'y j gp''y g'r ctwlewr cpv'dgi cp''y g'o cpwch' o gcuwtgo gpv'cpf "chigt "y g'o gcuwtgo gpv'ku'y tkwgp"f qy p"cpf "uj glj g"xgtdcm( "ucvgu"y g" o gcuwtgo gpv0Hqt 'EKU' ko g'o gcuwtgo gpvu. 'ko g'y cu't geqtf gf "chygt 'echydt cykqp. 'y j gp''y g" r ctvlekr cpv'r tguugf "dgi kp"o gcuwtgo gpv'qp" y g'EKU cpf "gpf gf "y j gp"r ctvlekr cpv'r tguugf "gpf " o gcuwtgo gpv'qp''y ku'EKUVj tgg''qy gt'\guvkpi ''o gcuwtgo gpvu''y gtg'\cmgp'f wtkpi ''y g'hqewu'i tqwr <'' yj g'EKU'Vcum'Cuuguuo gpv'Uj ggv.''yj g'U{uvgo 'Wucdkrkv{ 'Uecrg'\*UWU+.''cpf ''yj g'Tcr kf 'Gpvktg'Dqf { '' Cuuguuo gpv<sup>\*\*</sup>TGDC+0

# Wulpi 'tj g'EKUVcuniCuuguto gpv'Uj ggv

Vj g'EKU'Vcum'Cuuguuo gpv'Uj ggv."etgcvgf "d{ ''y g"Wpkxgtukx{ "qh'Rkwudwti j 'tgugctej ''yco .'y cu'wugf " vq"cuuguu'y g'r ctvkekr cpwi'wpf gtuvcpf kpi "qh'y g'EKU'f gxkeg0Rctvkekr cpwi'y gtg'r tqxkf gf ''y kj ''qr gp/" gpf gf ''vcumi'cpf ''o kpko cn'i wkf cpeg''cv'hktuv0'Ki'pggf gf .''y g'tgugctej gt ''r tqxkf gf ''ur gekhe''i wkf cpeg'' chygt ''c ''r tgf gygto kpgf ''co qwpv'qh''vko g''j cu'dggp''ur gpv''cwgo r vkpi ''c'vcun0'Gcej ''uvgr ''ku''cuuqekcvgf '' y kj ''c ''r qkpv'xcnwg"qh'' gtq"qt ''qpg0'Qpg''r qkpv'ku''cy ctf gf ''hqt ''gcej ''wgr ''kp''y g''vcuni'y cv'wugt '' eqo r mygu''uweeguuhwm{0'Ki'cuukuvcpeg'ku'tgs wktgf ''hqt ''c''uvgr .''qt''kh'y g''wugt ''hckni''q''eqo r myg''y g''vrgr '' chygt ''cuukuvcpeg'ku''r tqxkf gf .''y gp''y g'tgugctej gt 'y kn'hpvgtxgpg''cpf ''eqo r myg''y g''pgeguuct { ''cevkqp0' \ gtq''r qkpwi'y kn'dg''cy ctf gf 0'Ugg''Cr r gpf kz ''D<'Vguvkpi ''Rtqvqeqn'Vcdngu.''hqt''cm'qh''y g''vcumi'y g'' r ctvkekr cpv'eqo r mygf 0

### Wilpi 'tj g'U{ uvgo 'Wicdkikv{ 'Uecng'\*UWU+

Vj g"UWU"ku"c"tgrkcdrg"o gcuwtgo gpv'vqqrl'wugf "vq"o gcuwtg"wucdkrkv{0Vj g"uecrg"eqpukuvu"qh"32" s wguvkqpu'y kj "hkxg"tgur qpugu"vq"gcej "s wguvkqp"vj cv"tcpi g"htqo "uvtqpi n{"ci tgg"vq"uvtqpi n{"f kuci tgg" \*37+0Vj g"UWU"y cu"cf o kpkuvgtgf "chvgt"vj g"r ctvkekr cpv"j cu"j cf "cp"qr r qtwpkv{"vq"wug"vj g"EKU" u{uvgo 0Hqewu'i tqwr 'r ctvkekr cpwi'y gtg''cungf ''q'tgeqtf ''y gkt''ko o gf kcvg'tgur qpug''q''gcej ''kgo ." dghqtg'i tqwr 'f kuewukqp0'Vj g''ueqtkpi ''qhi'y g''UWU''{kgnf u''c''pwo gtkecn'tgr tgugpvcvkqp''qhi'y g''qxgtcm' wucdkfw{ 0'Vj g''UWU''ueqtg''y cu''ecnewrcvgf ''d{ ''uwo o kpi ''gcej ''kpf kxkf wcn's wguvkqp''htqo ''3/32." tcpi kpi 'htqo ''3/70'Hqt''s wguvkqpu''3.5.7.9.''cpf ''; ''y g''ueqtg''eqpvtkdwkqp'ku''y g''pwo gtkecn''xcnvg'' o kpwu''30'Hqt''s wguvkqpu''4.6.8.: ''cpf ''32.''y g''ueqtg''eqpvtkdwkqp'ku'7''o kpwu''q''uecng''r qukskqp''wukpi '' qpn{ ''r qukskg''kpvgi gtu'\*37+0'Chvgt''c''hkpcn'ueqtg'ku''ecnewrcvgf.''o wnkr n{ ''y g''uwo ''d{ ''40'' '\q''qdvckp''y g'' qxgtcm''UWU'xcnvg0'C''UWU'ueqtg''qh''8: ''qt''j ki j 'ku''eqpukf gtgf ''cdqxg''cxgtci g''wucdkfw{ '\*38+0'Hqt''y ku'' hqewu''i tqwr.''y g''UWU'ueqtg''y cu''ecnewrcvgf ''wukpi ''y g''cdqxg/o gpvkqpgf ''r tqegf wtgu0

### Gti qpqo leu'Gxcnwcylqp'wulpi 'tj g'Tcrlf 'Gpyltg'Dqf { 'Cuuguto gpy'\*TGDC+

Vjg'Tcrkf'Gpvktg'Dqf{'Cuuguuo gpv'\*TGDC+'ku'c'hwm/dqf{'rquwvtg'gxcnwcvkqp''yjcv'ku'wugf''vq'' kf gpvkh{ "f guki p"t kumu" y cv"eqwrf "ngcf "vq"o wuewnqungngvcn"f kuqtf gtu0Gcej "r qug"kpxqnxgf "kp"c" vcum" ecp"dg"s wcpvkscvkxgn{ "cuuguugf "d{ "cuuki pkpi "ueqtgu"dcugf "qp"yj g"r qukskqp"qh'yj g"y tkuvu."hqtgcto u." gndqy u. 'uj qwf gtu. 'pgem''twpm''dcem''ngi u''cpf ''npggu0T gr gcvgf ''uo cm/tcpi g''cevkqpu. ''r tqmpi gf '' uvcvke'r qukkqpu.'i tkr. "cpf "ncf "ctg"cnuq "ceeqwpvgf "hqt0Wukpi "c"qpg/r ci g'y qtmij ggv'y kj "nqqm/wr" vcdngu. "c"hkpcn'TGDC "ueqtg"ku"cuuki pgf 0'Dcugf "qp" y ku"ueqtg. "y g"qxgtcm'ngxgn'qh'tkumhqt" y g" cevkxkv{ "ku'f gvgto kpgf 0TGDC "ueqtgu"ctg"o quvtgrgxcpv"hqt"r quvvtgu"y cv"ctg"y g"o quv" f khkewnvlcy ny ctf "qt"r quwtg"uwuckpgf "hqt" y g"nqpi guv'r gtkqf "qh" vo g"3: +0Hqt" y ku'r ct vewrct" y g" uwf {. "y g"ej qugp 'r quwtgu' \q "dg"gxcnxcvgf "ctg" y g" \twpm" wr r gt "cto u. "pgem" ny gt "cto . "ngi u. "cpf" y tkw0Vtcf kkqpcn'RgppF QV'o gcuwtkpi 'o gy qf u'kpenwf g'dgpf kpi 'qxgt''vq''vcng'c''ewtd/tco r " o gcuwtgo gpv'cpf 'j qnf kpi 'c''ncr vqr ''qt''enkr dqctf ''vq''gpvgt 'f cvc0'Vj g''EKU'o gcuwtkpi ''o gyj qf u'' kpenxf g'j qnf kpi "y g'EKU'y ky "qpg'j cpf "cpf "pcxki cvkpi "y tqwi j "y g"crr "y ky "cpqy gt"j cpf." gzvgpf kpi "qpg"cto "y j kg"y cmkpi "y kj "y g"EKU."dgpf kpi "f qy p"vq"r wi'y g"EKU"kp"c"tguv'r qukkqp0C" rj qvqi tcrj 'y cu'vcngp''qh'gcej 'r ctvkekr cpv'f wtkpi 'o cpwcn'cpf 'EKU'o gcuwtgo gpwl'qh'ewtd/tco r " qpg."f wtkpi "j qtk qpvcn"f kuvcpeg"o gcuwtgo gpv'C0'Wukpi "yj gug"r j qvqi tcr j u"cpf "c"r tqvtcevqt."yj g" TGDC 'ueqtg'y cu'ecnewncvgf "d{ 'w q'o go dgtu'qh'y g'tgugctej 'vgco 0Ugg'Crrgpf kz 'E 'dgrqy 'hqt" o qtg'f gvcku0

# TGUWNVU

Vj tgg'uwf gpu'htqo ''y g''Wpkxgtuk{ ''qh'Rkwudwti j 'r ctvlekr cvgf ''kp''y g''hqewu'i tqwr ''eqo r ctkpi ''EKU'' cpf ''o cpwcn'o gcuwtgo gpu''vq''RgppF QV''o gcuwtgo gpu0'Vj g''cxgtci g''j gki j v'hqt''cm'y tgg'' r ctvlekr cpwi'y cu'7'hggv'9''kpej gu ''cpf ''cp''cxgtci g''ci g''qh''47''{ gctu0'Vj g''r ctvlekr cpwi'j cf ''xct{kpi '' tcegu ''gf wecvlqpu ''cpf ''twtcnlwtdcp''nqecvlqpu ''dw''cm'uwdlgewi'j cxg''r tgxlqwu''gpi kpggtkpi '' gzr gtkgpeg''cpf ''wug''cr r u''3''vq''5''j qwtu''r gt''f c{0

S wcpvkxvkxg'f cwc''eqngevgf 'htqo ''y ku''uwf { 'kpenwf gu''ewtd/tco r ''o gcuwtgo gpwi'hqt'i tcf g''cpf '' j qtkj qpvcn'f kuvcpeg''y ky ''dqy ''y g'EKU'f gxkeg''cpf ''o cpwcn'o gcuwtgo gpv.''o gcuwtgo gpvi'ko g''hqt'' o cpwcn'o gcuwtgo gpwi'cpf 'EKU'f gxkeg''o gcuwtgo gpvu.''y g'EKU'Vcuni'Cuuguuo gpv'Uj ggv.''U{ uvgo '' Wucdktk{ ''Uecrg'\*'UWU+:''cpf ''y g'Tcr kf ''Gpvktg''Dqf { 'Cuuguuo gpv'\*TGDC+0

### EKU'xgt uwu'O cpwcnEwt d/Tcor'O gcuwt go gpw

I tcf g'o gcuwtgo gpwl'y gtg'xctkcdn{ 'ceewtcvg'f gr gpf kpi ''qp''y g'tco r ''cpf ''y g''ur gekhe''v{ r g''qh'' o gcuwtgo gpv=hqt''kpurcpeg. ''R''o gcuwtgo gpv'hqt''ewtd'hkxg''y cu''eqpukurgpv'dgw ggp''o cpwcn'EKU.'' cpf 'RgppF QV''o gcuwtgo gpw.''j qy gxgt.'R''o gcuwtgo gpvl'hqt''ewtd''y q'y gtg''pqvlegcdn( ''f khgtgpv'' dgw ggp''j g''o cpwcn''EKU.''cpf ''RgppF QV''o gcuwtgo gpwl''SCrr gpf kz''F 04+0'J qtk qpvcn'f kwcpeg'' o gcuwtgo gpwl'y gtg''cnq''xctkcdn{ ''ceewtcvg.''cnj qwi j ''\q''c''nguugt''gz vgpv=''y ku''ceewtce{ ''cnq'' f gr gpf gf ''wr qp''y g'tco r ''cpf ''\{r g''qh'tco r .''y ky ''C''o gcuwtgo gpwl'dgkpi ''i gpgtcm{ ''enugt''q'' RgppF QV''o gcuwtgo gpwl'y cp''Y ''o gcuwtgo gpwl''Crr gpf kz ''F 04+0'Kp''vgto u''qh''vko g'tgs wktgf ''hqt'' o gcuwtgo gpv.'kpkkcn'cpcn{ uku''uj qy u''y cv'o cpwcn'o gcuwtgo gpvl'ku''guu''vko g''eqpuwo kpi ''y cp''EKU'' o gcuwtgo gpv.'kpkkcn'cpcn{ uku''uj qy gxgt.''ceeqwpvkpi 'hqt''y g''pwo dgt''qh'' gqr rg'y j qug''vko g''ku'' tgs wktgf ''q''eqo r rgvg''gcej ''cum''c''o qf khgf ''cpcn{ uku''uj qy u''y cv''EKU''o gcuwtgo gpvl'ku.''qxgtcm''' o qtg''vo g''ghhekgpv'y cp''o cpwcn'o gcuwtgo gpvl\*Crr gpf kz ''F 08+0

Y g'lpxguki cvgf 'ý g''ghhelgpe{ "cpf 'ceewtce{ "qh'ý g'E KU'f gxkeg''d{ "o gcuwtkpi 'ý g'hxg'ugngevgf " ewtd'tco r u'lp'vgto u''qh'ko g''ugeqpf u+.'i tcf g''r gtegpv+'cpf 'j qtk qpvcn'f kuvcpeg''kpej gu+0'Hqwt'' o gcuwtgo gpvu'y gtg''ugngevgf.'C.'R.'Y.'cpf 'E.''qwv'qh'ý g''y grxg''qvcn'ewtd'tco r "o gcuwtgo gpvu'y " ucxg''ko g0'Gcej ''uwdlgev'eqpf wevgf '5''tkcmi'hqt'ý g'7''ewtd'tco r u0'Cm'ý g''uwdlgev⁄u'f cvc'y gtg'' cxgtci gf ''dcugf ''qp''o gcuwtgo gpv'hqt''dqý 'EKU'cpf 'O cpvcn0'Vcdrgu'308/307''y gtg''o cf g'hqt''gcej '' ewtd.''r tqf welpi ''y g''I tcr j u''308/306''\*Cr r gpf kz ''F +0'Cm'gttqt''dctu'y gtg''dcugf ''qp''y g''RgppF QV'' f cvc'y ký kp'7' ''gttqt0

# EKU'VcumiCuuguno gpv'Uj ggv

Cm'r ctvlekr cpwl'ueqtgf "cv'ngcuv'36"r qkpwl'qwl'qh'37"vqvcn'r qkpwl'qp"vj g'EKU'vcuni'cuuguuo gpv'uj ggv0' Vj g"o ckp"ctgc"qhi'eqpegtp"ku'ej qqukpi "vj g'v{r g'qhi'ewtd'tco r "dgkpi "o gcuwtgf "qp"vj g"cr r "cpf" mecvkpi "vj g'eqttgev'gpf kpi "r qukskqp"hqt"vj g"EKU'cv'vj g"gpf "qh'vj g"ewtd/tco r "o gcuwtgo gpv0Vj gug" ctgcu'qhi'eqpegtp"y km'dg"cf f tguugf "kp"vj g"EKU'tgf guki p0

# U{ uvgo 'Wicdktv{ 'Uecng'\*UWU+

Vj g'r ctvlekr cpv)u'UWU'ueqtgu'hqt''y g'EKU'f gxleg'y gtg'9: .'; 407 'cpf '97 ''qw/qh'c''vqvcn'322'r qkpvu." y kj ''cp''cxgtci g'ueqtg''qh': 3090Dcugf ''qp''y gug'tguwnu.''hqt''y ku'hqewu'i tqwr .''y g'EKU'f gxleg''ku'' cdqxg''cxgtci g''hqt''r ctvlekr cpv'wucdkrkv{0

# Tcrlf 'Gpvktg'Dqf { 'Cunguno gpv'TGDC

Hqt"cm'uwdlgevu.''y g'TGDC''cpcn{uku''y cu''uki pkhecpvn{"j ki j gt'hqt"o cpwcn'' o gcuwtgo gpvu''( $8.6 \pm 0.6$ ) y cp'EKU'o gcuwtgo gpvu''( $2.6 \pm 0.6$ )0TGDC''ueqtgu''y gtg'j ki j gt'hqt o cpwcn'o gcuwtgo gpv'cpf 'kpf kecvgf 'c'j ki j /tkum'vcum''y j gtgcu''y gtg''nqy gt''nqy gt''nqt'' o gcuwtgo gpv'y kj ''y g'EKU'f gxkeg.''kpf kecvkpi ''nqy ''tkum'\*Crr gpf kz''E+0

# FKEWUKQP

### Hqewu'I tqwr 'Hggf dcenicpf 'Hwwtg'Kortqxgogpv'Rncpu

Htqo ''y g'hqewu'i tqwr ''yuxkpi .''y gtg''y gtg''o cp{ ''cf xcpvci gu'qh''y g'EKU'qxgt''o cpwcn'o gcuwtgo gpv'' kp''yto u''qh'wucdktkv{0'Vj g'EKU'y cu''o qtg''eqo hqtvcdrg''vq''wug.''cu''kv'y cu''pq''npi gt ''pgeguuct{ ''vq'' us wcv'hqy ''vq''y g'i tqwpf ''vq''o gcuwtg.''y j kj ''ku''eqpukuvgpv'y kj ''y g'TGDC''o gcuwtgo gpv'tguwnu0'Kp'' cffkkqp.''wukpi ''y g'EKU'y cu''nguu''ncdqt''kpvgpukxg''cpf ''o qtg''vo g''ghhkelgpv'y cp''o cpwcn'' o gcuwtgo gpv0'Vj ku'ku'dgecwug''y g'EKU'qhhgtu'c''uko r ngt''y qtnhnqy .''cpf ''cnuq'f qgu''pqv'tgs wktg'' o gcuwtgo gpvu''q'dg''y tkwgp''qw''y kj ''r gp''cpf ''r cr gt0Gngevtqpke''f cvc''eqngevkqp''cnqy u'hqt''c'' uo cmgt''ej cpeg''qh''nqukpi ''r cr gt'f cvc0Wugtu''cnuq''y qwi j v'y g''EKU'y cu''kpwkskxg''cpf ''o qtg''r tgekug'' hqt''ngpi y ''o gcuwtgo gpv''cu''vcr g''o gcuwtg''qpn{ ''i kxgu''ngpi y ''q''3138yj ''qh''cp''kpej ''cpf ''o c{ kpvtqf weg''xctkcvkqp''dcugf ''qp''j qy ''y g''wugt''o gcuwtgu0Kp''y g''EKU'uqhy ctg''cr r necvkqp. ''wugtu'' cr r tgekcvgf ''y g''rc{qw''cpf ''f kci tco u.''cu''y gm''cu''y g''eqnqt''qh''c''o gcuwtgo gpv''pwo dgt''y j kej '' ko o gf kcvgn{ ''kpf kecvgu'y j gy gt''ky'eqo r nkgu'y ky ''CFC''uvcpf ctf u0

Uqo g'f kucf xcpvci gu'kf gpvkhkgf 'f wtkpi 'vj g'fqewu'i tqwr 'vgukpi 'y gtg'kp'vj g'crr necvkqp'wugt" kpvgthceg. 'uwtf kpguu'qh'vj g'u{uvgo .'ecnkdtcvkqp''r tqegf wtgu 'gti qpqo keu 'cpf 'vj g'equv0Hktuv.'hqewu'' i tqwr 'o go dgtu'y gtg'eqpegtpgf 'cdqwi'y g'u{uvgo 'equv'eqo r ctgf 'vq'yj g'kpgzr gpukxg''cnvgtpcvkxg''qh'' c'o gcuwtkpi 'vcr g'cpf ''gxgr0Dg{ qpf ''yj ku ''uqo g''wugtu''y gtg''htwutcvgf ''d{ ''yj g''pvo gtqwu''cpf '' uqo gvko gu'wpergct ''uvgr u'kp''yj g''cr r necvkqp''cpf ''gzr tguugf ''c''f guktg''nqt''c''o qtg''wugt/htkgpf n{ '' kpvgthceg'y kj ''y g''cdktk{ ''q''unkr ''uvgr u0'P qvg''yj cv'wugtu''y gtg''pqv'r tqxkf gf ''gpqwi j ''ko g''q''hwm{ '' i tcur ''y g''hwpevkqpcrkv{ ''qh''yj g''cr r necvkqp0'Hwty gt. ''wugtu'y qwi j v'yj cv'gpvgtkpi ''kphqto cvkqp'y cu'' wpkpwkkkxg''cpf ''yj cv'uo cm ''wptgur qpukxg''dwvqpu''y gtg''cp''kuwg0'Wugtu''cnuq''uckf ''yj cv'yj g''uetggp'' y cu''uqo gvko gu'f khhewm''q'ugg''cu'c''tguwn'qh'i rctg''htqo ''yj g''uwp0

Kp'vgto u''qh''y g''r j {ukecn'f gxkeg. 'wugtu'uckf ''y cv'gzr qugf ''grgevtqpkeu''y qwf ''dg''c'hcdktk{ ''cpf '' uj qwf ''dg''eqxgtgf 0'Hxty gt. ''y g{ ''y gtg''eqpegtpgf ''cdqwi'y g''f wtcdktk{ ''qh''y g''f gxkeg''cpf ''qhxgp'' y gtg''chtckf ''q''dtgcni'y g''u{uvgo 0'Vj g''wugtu''cnq''uckf ''y cv'y g''f gxkeg'hgni'tki kf. ''dwm{ .''cpf ''y cu'' f kthkewni'q''tcpur qtv0'Uqo g''wugtu''uwi i guvgf ''y cv'o qtg''y gki j v'uj qwf ''dg''cf f gf ''q''y g''dcug''qh''y g'' f gxkeg''q''kpetgcug''ucdktk{ 0'Gti qpqo kecm{ .''uqo g''wugtu''gzr gtkgpegf ''ki j vpguu''kp''y g''dcem'cpf '' uj qwf gtu'f wtkpi ''wug''cpf ''uwi i guvgf ''y cv'c''dgvgt''j cpf rg'ku''kpeqtr qtcvgf ''cpf ''y cv''y g{ ''dg''cdrg''q'' o qxg''kp''tghgtgpeg''q''y g''dcug''r rcvg0'Kp''r ctvkewct. ''nqewu'i tqwr ''wugtu''gzr tguugf ''eqpegtp''cdqwi'y g'' ecrkdtcvkqp''qh'y g''f gxkeg''dcugf ''qp''c''dwddrg''rgxgn'cv'y g''dcugr rcvg''qh''y g''f gxkeg0'Wugtu'uckf ''y cv'' y ku''ecrkdtcvkqp''o gy qf ''ku'uwdlgevkxg''cpf ''y cv'kv'o c{ ''kpvqf weg''o qtg''gttqt''kpvq''y g''u{uvgo ''y cp'' pgeguuct{0

Ej cpi gu'tgs wguvgf "d{ "vj g'hqewu'i tqwr "y gtg'tgrcvgf "vq"vj g"j cpf rg"i tkr."grgevtqpke"r tqvgevkqp." cr r nkecvkqp"hvpevkqpcnkv{ "cpf "kpvgthceg."uetggp"i mtg."cpf "ecnkdtcvkqp"r tqegf wtgu0Ko r tqxgo gpvu" yj cv'wugtu'uckf "y gtg"c"j ki j /r tkqtkv{ "kpenvf gf "vj g"f getgcugf "y gki j v"hqt"gcukgt"wug"cpf "r qtvcdktkv{."c" dgwgt "cr r nkecvkqp"wugt "kpvgthceg."uko r rgt"cpf "o qtg"ghigevkxg"ecnkdtcvkqp"r tqegf wtg."ko r tqxgf " gti qpqo keu. "uvtcr u"cetquu'vj g"cto "vq"o cng"vj g"f gxkeg"gcukgt "vq"j qrf. "kpetgcugf "f wtcdktkv{."cpf " mti gt"y j ggnu'y kj "dgwgt"i tkr 0"Wugtu"cnq"tgs wguvgf "c"uwo o ct { "r ci g"kp"vj g"cr r nkecvkqp."uwej "vj cv" f cvc"y qwff "dg"gcukgt"vq"xkgy "cpf "kpvgtr tgv0

Uqo g'uwi i guvgf 'ko r tqxgo gpwl'htqo ''y g''hqewu''i tqwr ''y gtg''o qtg''ergct 'kpuvt wevkqpu'kp''y g'' cr r nlecvkqp''cdqwi'j qy ''q''wug''y g''EKU'f gxleg."c''uko r ngt"cpf ''o qtg''wpkhlgf 'f guli p."c''uy kxgn'j cpf ng." cpf ''y g''cdkrkw{ ''q''nqeni'y g'f gxleg''q''uvc{ ''kp''c''uvcki j v'ihpg0'hp''cf f kkqp."c''o qtg''uvcdng''dcwgt{ '' eqo r ctvo gpv'y cu''uwi i guvgf ."cu''y g''ewttgpv'qpg''qhygp''o qxgf 'f wtkpi ''wug0'Cnq. ''wugtu'y qwrf ''hvng''q'' dg''cdng''q''tceni'y g''eqo r ngvlqp''uvcwu''qh''tco r u''q''f gvgto kpg''y j kej 'j cxg''dggp''kpur gevgf ''cpf '' y j kej ''uvkni'tgs wktg''kpur gevkqp0'Wugtu''cnq''y qwi j v'y cv'y g''cr r nlecvkqp''o c{''dgpghkv'htqo ''c''uvgr /'' d{/uvgr ''r tqeguu''rc{qwv''tcy gt''y cp''tgs wktkpi ''wugtu''q''ej qqug''gcej ''o gcuwtgo gpv'r ctco gvgt'' y go ugnxgu0Dcugf ''qp''y ku'hggf dcem''y g''r rcp''q''o cmg''ko r tqxgo gpvu''q''y g''cr r nlecvkqp''kpvgthceg." ugpuqt"ecnkdtcvkqp"r tqegf wtg."cpf "o gej cpkecn'grgo gpvu'hkng"vj g'j cpf rg."dcwgt { "eqo r ctvo gpv."cpf " dcugr rcvg0

# Nko kscvkqpu

Vj g'EKU'f gxkeg''eqpvtkdwgf ''i tgcvn{ ''q''y g''r wtr qug''qh''y g''r tqlgev0'Vj g''wugt/htlgpf n{ ''cr r nlecvkqp'' u{uvgo ''cpf ''hi j w gki j v'o qf gn'o cf g''y g''o gcuwtgo gpv'r tqeguu''gti qpqo kecm{ ''gculgt ''hqt''y g'' uwdlgew0'Y kj ''o cp{ ''r qukskxg''cur gewi'vq''y g''f gxkeg. ''c''hgy ''ho kxcvkqpu''ctg''cf f tguugf ''cpf '' eqpulsf gtgf ''hqt''y g''pgzv'tgf guki p''r j cug0

O cpwcn'o gcuwtgo gpwl'eqpf wevgf "d{ "y g''uwdlgewl'y gtg''uki pkhlecpvn{"f khigtgpv'htqo "RgppF QV" o gcuwtgo gpw0J qy gxgt."y ku'o c{ 'dg"c'tguwn'qh''qwf cvgf 'o gcuwtgo gpw1'd{ 'RgppF QV"qt" kpceewtcvg"o gcuwtgo gpv'd{ "y g''guv'uwdlgew0'V j g''guv'uwdlgew1'y gtg"pqv'r tqhguukqpcn'eqpvtcevqtu" qt''uwtxg{qtu'y kj "gzr gtkgpeg"kp''CF C/eqo r nkcpv'ewtd''tco r u."cpf "y ku'o c{ "gzr nckp"y j { 'y gkt" o gcuwtgo gpw1'f q"pqv'ci tgg"y kj "y qug"qh'r tqhguukqpcn0

Vj gtg"y gtg"cnuq"ugxgtcnltguvtkevkqpu"f wtkpi "vj g"vguvkpi "r j cug"vj cv"chhgevgf "vj g"tguwnu0Ncem"qh" wpkłąto kw "kp"yj g"o cppgt"kp"y j kej "ewtdu"y gtg"o gcuwtgf "kpvtqf wegf "o qtg"j wo cp"gttqt."cpf "yj ku" uwtgn{ 'ko r cevgf 'kj g'tgnkcdkrkv{ 'qh'o gcuwtgo gpvu0Kp'cf f kkqp.'tco r u'wpf gti q 'gtqukqp'cpf 'o c { " y gct "qxgt" vko g"cu" y g{ "ctg" uvt wendd { "xgj kergu. "It gs wgpv'eqp vcev 'y kj "uj qr r kpi "ect vu. "f kut wr vgf "d { " y g'i tqy y "qh'tgg"tqqu. "cpf "chigevgf "d{ "qy gt "ecwugu0RgppF QVøu"o gcuwtgo gpuu'y gtg" eqpf wevgf "kp"422: .'y j kej "o c{"j cxg"dggp"co r ng" ko g"hqt "ko r cevhwnlej cpi gu"vq"qeewt "vq" y g"ewtd" tco r 'untwewntg0'Hwtyj gt."cm'o gcuwtgo gpvu'y gtg''cmgp"d{ "Wpkxgtukv{ "qh'Rkvudwti j 'uwwf gpvu'y kyj " rkwrg'\q'pq'dceni tqwpf 'kp'ewtd'tco r 'eqputtwevkqp0'Y ky 'xgt { 'o kpko cn'mpqy ngf i g'kp'o gcuwtkpi " ewtd"tcoru"o cpwcm{ "d{ "tcf kkqpcn"o gcpu."yj gkt"o gcuwtgf "f cvc"o c{ "f khpgt"htqo "RgppF QV"f cvc" o gcuwtgf "d{ "qhheken'eqpytcevqtu'hqt 'vj ku'tgcuqp0Qp 'c'tgrevgf "pqvg. 'vj gtg'y cu'c'urqy "rgctpkpi " ewtxg'y j gp'wukpi 'y g'EKU."cpf "gcej 'wugt "qpn{ 'wugf 'y g'f gxkeg'hqt"c'uo cm'co qwpv'qh'wo g=" y gtghqtg. "wugtu"y gtg"pqv"gpvktgn{ "hco krkct"y kj "y g"f gxkeg"wr qp"kwu"wug"kp"y g"vtkcn"cpf "y ku"eqwrf " j cxg"ko r cevgf "vj gkt "o gcuwtgo gpv'ceewtce {0'Qp" vj g"cr r nlecvkqp" ukf g. "eqpukuvgpv'ecnkdtcvkqp" qh" vj g" f gxkeg'y cu'o cpf cvgf "d{ 'y g'r tqvqeqn"cpf 'kpceewtcvg"qt 'kpeqttgev'ecrkdtcvkqpu'eqwrf 'j cxg" ko r cevgf "kpf kxkf wcn'o gcuwtgo gpw0F wg"vq" vko g"eqpuvtckpvu. "wugtu" y gtg"qpn{ "cdng" vq"ecnkdtcvg" y g" f gxkeg"qpeg"dghqtg"gcej 'o gcuwtgo gpv'ttkcn"y j kej "eqwrf "j cxg"kpytqf wegf "xctkcykqp"kpyq"y g"f cvc0

# TGHGTGPEGU

- \*3+" O eEnclp. "Nkpf c. "gv'cn0öT guvcwt cpv'Y j ggnej ckt 'Ceeguukdkrkv{ 0ö'Co gt kecp 'Iqwt pcn'qh' Qeewr cvkqpcn'Vj gt cr { .'Co gt kecp 'Qeewr cvkqpcn'Vj gt cr { 'Cuuqekcvkqp.''3''Lwn{''3; ; 5." clqv&qvcQt i lct vkerg&ur z Act vkergkf ? 3: 967; 3
- \*4+" O eEnckp. 'Nkpf c. "cpf 'Ej tkuv{ 'Vqf f 0õHqqf 'Uqtg'Ceeguukdkrkv{ 0b'Co gtkecp'Iqwtpcn'qh' Qeewr cvkqpcn'Vj gtcr {.'Co gtkecp'Qeewr cvkqpcn'Vj gtcr { 'Cuuqekcvkqp.'3'Lwpg'3; ; 2." clqv&qvc0qti lctvkerg&ur z Actvkergkf ? 3: 98; 760
- \*5+"Cjp."J"E."gv'cn0õCtej kgewtcn'Dcttkgtu'\q'Rgtuqpu'y kj 'F kucdkkkkgu'kp'Dwukpguugu'kp"cp" Wtdcp"Eqo o wpkx{0ö'Ewttgpv'P gwtqnqi {"cpf 'P gwtquekgpeg'Tgrqtvu0'WU0P cvkqpcn" Nkdtct {"qh'O gf kekpg."<u>y y QedkQpro Qbkj0 qx lr wdo gf l: 3; 7483</u>0

- \*6+" I tcdqku. 'G'Y . 'gv'cn/ôCeeguukdktk{ ''qh'Rtko ct { 'Ectg'Rj { ukekcpu}'Qhhkegu'hqt 'Rgqr m'y kj " F kucdktkkgu0Cp'Cpcn{ uku'qh'Eqo r ncpeg'y kj ''y g'Co gtkecpu'Y kj 'F kucdktkkgu'Cevtô" Ewttgpv'P gwtqnqi { ''cpf 'P gwtquekgpeg'T gr qt ut0 ''WU0P cvkqpcn'Nkdtct { ''qh'O gf kekpg.'' y y y (bedktpm (bkj 0 qx tr wdo gf 1; ; 542930)
- \*7+" Z kcpi .'J .'gv'cn0'Ewttgpv'P gwtqnqi { 'cpf 'P gwtquekgpeg'T gr qtw0'WU0'P cvkqpcn'Nkdtct { 'qh' O gf kekpg. 'Hgd0'4228.'<u>y y y (pedklpm (pkj () qx lr o e lctvkengulRO E47857291</u>0
- \*8+"TN."Mtd{0öF gr ctvo gpv'qh'O gf lelpg."F cŋ qwulg"Wpkxgtulx{."J crkhcz."P qxc"Ueqvlc."Ecpcf c0ö" Cf f levlqp"( "J gcnj."UcvRgctni"Rwdrluj kpi."<u>gwtqr gr o e0qti lcduvtcevlo gf 145: 559:</u>0
- \*9+" Mkej kp. 'Tqd. 'gv'cn0õQp''y g'O cti kpu< F kucdngf 'Rgqr ngu'Gzr gtkgpeg''qh'Go r nq { o gpv'kp'' F qpgi cn 'Y guv'Kgncpf &'F kucdktks{ '( 'Uqekgs{.'xqn035.'pq07.'3; ; : .'r r 09: 76: 280'' f qk32082: 212; 8: 97; ; : 487370
- \*: +" Mcugo uwr r cmqtp. 'Rk{ cy cp. 'gv'cn0'öWpf gtuvcpf kpi 'Tqwg'Ej qkegu'hqt 'Y j ggrej ckt" P cxki cvkqp0o'F kucdkrkv{ 'cpf 'Tgj cdkrkxcvkqp<'Cuukuvkxg'Vgej pqnqi {.'xqr0'32.'pq0'5.''4236." r r 0'3; : 64320'f qk320532; 1396: 5329042360; : 3820
- \*; +" \*QFQV+:"V0I 0\*4238+0F guki p"qh'CFC"Ewtd"Tco r u0Tgvtkgxgf "htqo " <u>j wr u<1y y y 6f qv0xcvg0qj 0xu1F kxkukqpu1Rrcppkpi NqecrRtqi tco u1NVCRICFCaEqwtugaO cv</u>" gtkcnaP qxgo dgta42381F guki p"qh"CFC"Ewtd"Tco r u"/"42380rf h
- \*32+" Dgpghkekcn'F guki pu. "Kpe0"Lwrkg"D0'Mktuej dcwo. "Rgvgt"Y 0Czgnuqp. "Rcvtkekc"G0'Nqpi o wkt." Mcyj nggp'O 0'O kur ci gn "Lwrkg"C0'Uvgkp. "F 0C0[\_0\*4223+0F guki pkpi "Ukf gy cmu"cpf "Vtckru" hqt "Ceeguu"Rctv'KKqh"K&Dguv'Rtcevkegu'F guki p'I\_wkf g0Tgvtkgxgf "htqo " j wr u<1y y 0 hj y c0f qv0 qx lgpxktqpo\_gpvldke { engar gf guvtkcp lr wdrkecvkqpulukf gy cmr4 leqpvg" pv0eho
- \*33+" WU0Ctej kgewtcn'cpf "Vtcpur qtvcvkqp 'Dcttkgtu'Eqo r nkcpeg'Dqctf "\*Ceeguu'Dqctf +0\*3; ; 2+0' Co gtkcpu'y kj 'F kucdkrkkgu'Cev'\*CFC+'Ceeguukdkrkv{ 'I wkf grkpgu'hqt 'Dwkrf kpi u'cpf " Hcekrkkgu0T gvtkgxgf 'htqo j wr <1y y gteeguu/dqctf 0 qx kwcej o gpwlctvkerg13572 kcf cci 0 f h</p>
- \*34+" Wpkgf "Ucvgu'F gr ctvo gpv'qh'Ci tlewnwtg0\*3; ; 6+0Gphqtego gpv'qh'P qpf kuetko kpcvkqp''qp''y g" Dcuku'qh'J cpf kecr 'kp''Rtqi tco u''qt''Cevkxkkgu'Eqpf wevgf ''d{ ''y g''Wpkgf ''Ucvgu'F gr ctvo gpv'' qh'Ci tlewnwtg0Tgvtkgxgf ''htqo '<u>j wr u≺lly y y 0rcy 0cqtpgm0gf wleht lvgzv19137g0872</u>
- \*35+" F gr ctvo gpv'qh'Vtcpur qtvcvkqp0\*4228+0Co gtkecpu'y kj 'F kucdkrkskgu'Cev'\*CFC+'Uvcpf ctfu' hqt 'Vtcpur qtvcvkqp'Hcekrkskgu0Tgvtkgxgf 'htqo j wr <1 y y 0ceeguu/dqctf0 qx lcvcej o gpvulctvkerg136; : 1CFCfquvcpf ctfu0rfh</p>

\*36+" F gr ctvo gpv'qh'Lwukeg0\*4229+0CFC'Ceeguukdkk<br/>kk 'hqto u'cpf 'kputwekqpu'Crr gpf kegu'3"cpf " 40T gvkgxgf 'htqo 'j wr <br/>ly y 0 f c0 qx lr ecvqqmkvlkpvtqcr r 3cpf 40 f h

- \*37+" Chhcktu. 'Cuukuvcpv'Ugetgvct { 'hqt'Rwdrke0õU{uvgo 'Wucdkrkv{ 'Uecrg'\*UWU+06'<u>Wucdkrkv{ 0 qx</u>." F gr ct vo gpv'qh'J gcnj 'cpf 'J wo cp'Ugtxkegu.'8''Ugr v04235." <u>y y v 0wucdkrkv{ 0 qx lj qy /vq/cpf/vqqnulo gy qf ulu{uvgo /wucdkrkv{/uecrg0 vo r</u>0
- \*38+" õF gvgto kpkpi "Y j cv"Kpf kxkf vcn"UWU"Ueqtgu"O gcp<"Cf f kpi "cp"Cf lgevkxg"Tcvkpi "Uecrg@"LWU." <u>wzr clqwtpcnuti lf gvgto kpkpi / y j cv/kpf kxkf vcn'uvu/ueqtgu/o gcp/cf f kpi /</u>" <u>cp/cf lgevkxg/tcvkpi /uecrg</u>10
- \*39+" Uxcpvqp. 'P gxkmg0J wo cp"Hcevqtu'kp"Eqpuwo gt"Rtqf wew0Vc {mt" ("Htcpeku. "42260
- \*3: +" O kf f nguy qt yi .'O cw."gv'cn0öJ qy "\q"Ugngev\'yi g"Eqttgev'Gti qpqo ke"Tkum'Cuuguuo gpv'Vqqn0ö" Gti qRnxu."39"Lwn{ "4237."gti q/<u>r nxu0eqo lugngev/gti qpqo ke/tkum/cuuguuo gpv/vqqn</u>0

### CRRGP F KE GU

### Crrgpf kz'C<Fguki p'Oqfkhecvkqpu



Crrgpf kz'CØ<Fgxkeg'Cppqvcvkqp
# C<u>rrgpf kz'D<Vguwpi\_'RtqwqeqniVcdugu</u>

Steps	Point Value (0 - 1)	Point Value Given
Log in to the app	0-1	
Connect to Bluetooth	0-1	
Tap plus sign (+) in bottom left hand screen to add a curb-tamp	0-1	
Choose curb-ramp type	0-1	
Zoom out to view full curb-ramp site location	0-1	
Tap curb-ramp location to add curb-ramp measurement	0-1	
Physically move the curb-ramp from normal starting position until bubble level is calibrated (bubble is in the center) and press calibrate	0-1	
Tap a letter to open measurement	0-1	
Choose moving when measuring a grade measurement	0-1	
Choose the correct starting point depending on measurement level (position is indicated on the app screen)	0-1	
Press start to begin the measurement	0-1	
Measure the curb-ramp distance required	0-1	
Locate the correct ending position	0-1	
Press stop to end the measurement	0-1	
Total	15	

# Crrgpf kz'E04<TGDC'Ueqtg'Uecrg

Ueqt g	NgxgilqhO UF 'T km
3	P gi nki kdng't kum 'pq''cevkqp''t gs wkt gf

96

# Cr r gpf kz 'E @<'T GDC 'UE qt g'Vcdrg</th> Vcdrg'308<T GDC 'UE QT G</th> O cpwcn Uwdl gev'%3 5 ; Uwdl gev'%4 4 ; Uwdl gev'%5 5 :

# Crrgpf kz'E<' TGDC'Cunguno gpv

4/5	Nqy 'tkum''ej cpi g''o c{ ''dg''pggf gf
6/9	Ogf kwo 'tkum'hwtyj gt'kpxguvki cvkqp."ej cpi g'uqqp
:/32	J kij "tkum"kpxguvkicvg"cpf "korngogpv"ej cpig
33-	Xgt { 'j ki j 't kumiko r ngo gpv'ej cpi g



Crrgpfkz'EØS<TGDC'Ueqtg'Itcrj

# Crrgpflz'F<' Tguwwu'Vcdngu'( 'Itcrju

# Crrgpf kz'F Ø<'Tcy 'Fcw 'Vcdng'qh'O gcuwt go gpvu

Vcdrg'408<'I	f cy 'O gcuwt go	gpv'Fcœ'կ	hCmTco r	u'hqt 'EKU'( '	Ocpwcn		
Wugt	O cpwcnEK U	O gcu0	Tco r'3	Tco r'4	Tco r'5	Tco r'6	Tco r'7
Uwdlgev'3	EKU	С	64048	69083	67085	64049	47063
Uwdlgev'3	EKU	С	680, 3	6: 0, 3	66089	6: 09:	6: 028
Uwdlgev'3	EKU	С	6; @5	725;	6: 056	6708:	6: 04:
Uwdlgev <sup>1</sup> 4	EKU	С	6909	6: 07:	6: 03	6707	6; 0, 5
Uwdlgev'4	EKU	С	6: 098	6:0:	6:056	660,7	6909
Uwdlgev'4	EKU	С	6; 077	6: <b>()</b> :	6802;	68043	68087
Uwdlgev'5	EKU	С	56088	P IC	72055	6;05	6; 05;
Uwdlgev'5	EKU	С	5; 09	650 :	6;06	6: 066	6:08
Uwdlgev'5	EKU	С	68053	5;044	68089	69087	6: 058
Uwdlgev'3	EKU	Е	6054	9049	6038	: 067	3078
Uwdlgev'3	EKU	Е	6096	90,3	6047	9037	4074
Uwdlgev'3	EKU	Е	7085	906	6056	9074	3096
Uwdlgev'4	EKU	Е	608;	3208	707	9023	20 7

Uwdlgev'4	ЕKU	Е	7@6	; 087	7093	806	2034
Uwdlgev'4	ЕKU	E	7075	9046	5027	80,6	307;
Uwdlgev'5	ЕKU	E	409	70,9	5055	8035	30 :
Uwdlgev'5	EKU	Е	40,4	РЮ	5076	806:	3063
Uwdlgev'5	ЕКU	Е	7063	70, 7	5023	7039	3099
Uwdlgev'3	EKU	R	6: 06	77085	6905;	76049	6804;
Uwdlgev'3	EKU	R	6; <b>(B</b> ;	750,3	69084	7307;	68083
Uwdlgev'3	EKU	R	72074	7608;	6: 04:	73029	6: @8
Uwdlgev'4	ЕKU	R	6: 08:	7504:	6: 093	76036	69028
Uwdlgev'4	ЕKU	R	6; 079	74077	6; 056	76058	6907
Uwdlgev'4	ЕKU	R	6; 0,	7206:	6: 079	760,6	6; @4
Uwdlgev'5	Е <b>К</b> И	R	49096	79083	69095	76059	6: 097
Uwdlgev'5	ЕКU	R	680, 5	77087	6905	76064	6:03
Uwdlgev'5	Е <b>К</b> И	R	6; @3	РЮ	6807;	7604	6: 089
Uwdlgev'3	EKU	Y	2064	308:	3@5	3086	5083
Uwdlgev'3	EKU	Y	2083	3093	3065	30,8	4079
Uwdlgev'3	EKU	Y	3075	3066	3046	5046	4057
Uwdlgev'4	EKU	Y	30;:	4035	40,7	204	4069
Uwdlgev'4	Е <b>К</b> И	Y	4026	2059	40	2097	40 9

Uwdlgev'4	EKU	Y	4047	209	40 8	2039	4095
Uwdlgev'5	EKU	Y	2@3	2	4099	307	3028
Uwdlgev'5	ЕKU	Y	4089	РЮ	4084	305	3036
Uwdlgev'5	Е <b>К</b> И	Y	409	2023	409	3047	3059
Uwdlgev'3	O cpwcn	С	6: @2	6: 072	6: @2	6: 022	6: 072
Uwdlgev'3	O cpwcn	С	6: @2	6: 072	6: @2	6: 022	6: 072
Uwdlgev'3	O cpwcn	С	6: @2	69072	6: @2	6: @2	6: 072
Uwdlgev'4	O cpwcn	С	6: 0 :	6: 072	690 :	6: 047	6: @2
Uwdlgev'4	O cpwcn	С	6; @2	6: 072	6: 072	6: 072	6: @2
Uwdlgev'4	O cpwcn	С	6; @2	6: 047	690 :	6: Œ:	6: @2
Uwdlgev'5	O cpwcn	С	6; @2	6: 052	6: 072	6; @2	6: 087
Uwdlgev'5	O cpwcn	С	72@2	6: 022	6: 072	6: 08:	6: 097
Uwdlgev'5	O cpwcn	С	72@2	6: 022	6: 097	6: 049	6: 087
Uwdlgev'3	O cpwcn	Е	3062	90 9	6059	8034	2074
Uwdlgev'3	O cpwcn	Е	30,4	: 062	6059	707;	20 9
Uwdlgev'3	O cpwcn	Е	3079	90 9	6076	80;	2057
Uwdlgev'4	O cpwcn	Е	3062	;02	707;	: 044	402;
Uwdlgev'4	O cpwcn	Е	402;	;0:	804;	: 078	4084
Uwdlgev'4	O cpwcn	Е	409;	; 085	804;	908;	402;

Uwdlgev'5	O cpwcn	Е	6059	: 044	50 6	80 4	3097
Uwdlgev'5	Ocpwcn	Е	7064	8069	6059	90 9	3079
Uwdlgev'5	O cpwcn	Е	7099	: 044	7064	8086	402;
Uwdlgev'3	O cpwcn	R	72@2	75@2	6: @2	75053	690 :
Uwdlgev'3	O cpwcn	R	72072	64072	6: 022	75066	690 :
Uwdlgev'3	O cpwcn	R	76@2	74072	6: @2	75053	6: @2
Uwdlgev'4	O cpwcn	R	6; 047	730 :	6: 047	75078	6: @2
Uwdlgev'4	O cpwcn	R	72072	74072	6: 047	75072	690 :
Uwdlgev'4	O cpwcn	R	72072	75047	6: 047	75078	690 6
Uwdlgev'5	O cpwcn	R	6: <b>@</b> 2	74@2	6: 047	75082	6: 062
Uwdlgev'5	O cpwcn	R	6: @2	75072	6: 057	75082	6: 067
Uwdlgev'5	O cpwcn	R	6: 022	76072	6: 082	75097	6: @2
Uwdlgev'3	O cpwcn	Y	3044	4049	3097	20 9	4049
Uwdlgev'3	O cpwcn	Y	3044	30,4	3079	2074	4066
Uwdlgev'3	O cpwcn	Y	3062	4066	3079	2092	4084
Uwdlgev'4	O cpwcn	Y	3044	4049	2057	2074	3044
Uwdlgev'4	O cpwcn	Y	3062	3097	2092	2057	2074
Uwdlgev'4	O cpwcn	Y	3079	4049	2074	2057	2092
Uwdlgev'5	O cpwcn	Y	2039	2039	3027	2057	4049

Uwdlgev'5         O cpwcn         Y         362         2089         2092         2092         2074	Uwdlgev'5         O cpwcn         Y         2057         2022         2092         2074         4049								
	Uwdlgev'5         O cpwcn         Y         3062         2089         2092         2092         2074								
. Cm'eemu'hkmef "ko"tef "cte"f cxc"r akovu'vi cv'v ete"pav'teeatf ef "cpf "v ete"phv'awv'ko"vi e"f cxc"cpcn{uku0									

# Crrgpf kz'F04<Cxgt ci gf 'O gcuwt go gpwi'Vcdngu'hqt 'Gcej 'Ewt d

Vcdrg''404 <cxgtci ''uwdlgew''f="" cvc'hqt''ewtd''3<="" gf="" th=""></cxgtci>					
	ЕКU	O cpwcn	RgppF QV		
С'' <sup>∗</sup> кр+	67@2	6:0:	6: <b>@</b> 2		
E'₩ "qt"fgi+	6072	40,9	6052		
R'₩ "qt"fgi +	68088	6;08	6: <b>@</b> 2		
Y '* <b>k</b> p+	307:	3083	3082		

Vcdrg"405<"Cxgtci gf "Uvdlgevu'F cvc'hqt"Ewtd"4					
	ЕKU	O cpwcn	RgppF QV		
C'*¥kp+	69025	6: 045	6: @2		
E'₩ "qt"fgi +	9084	:072	9082		
R'₩ "qt"fgi +	76026	73096	6: @22		
Y '**kp+	20,6	3069	3052		

Vcdrg''466 <cxgtci ''uwdlgewi'f="" 'ewtd''6<="" cvc'hqt="" gf="" th=""></cxgtci>						
	ЕКU	O cpwcn	RgppF QV			
С''*кр+	68075	6:056	6: <b>@</b> 2			
E'₩ "qt"fgi+	80 3	9089	: 082			
R'₩ "qt"fgi +	75093	75073	6: <b>@</b> 2			
Y '****p+	3055	2076	206			

Vcdrg''407 <cxgtci ''uwdlgewi'f="" cvc'hqt''ewtd'5<="" gf="" th=""></cxgtci>						
	EKU	O cpwcn	RgppF QV			
С'**кр+	69073	6: 044	6: @2			
E'** "qt"f gi +	6032	7023	6092			
R'₩ ''qt''f gi +	690;	6: 044	6: @2			
Y '**kp+	4049	20;	3052			

Vcdrg''408<'Cxgtci gf ''Uwdlgevu''F cvc''hqt''Ewtd''7					
	ЕКU	O cpwcn	RgppF QV		
С''*№+	670 7	6:05;	6: <b>@</b> 2		
E'₩ "qt"fgi +	306;	3077	30 2		
R'₩ "qt"fgi +	690;	6: 027	6: @2		
Y "¥kp+	4046	3087	3082		

#### Crrgpf kz'F (5<Cxgt ci g'Ecrewn: vkqpu'hqt 'Ewt d'3

Cxgtci g'Hqto wnc $<\frac{1}{n}\sum_{i=1}^{n} a_i = \frac{1}{n}(a_1 + a_2 + a_3 + ...)$ Vj g''gzco r ng''r tqxkf gf 'y kn'dg'hqt 'Ewtd'3''j qtk qpvcn'f kncpeg''cpf 'i tcf g'o gcuwtgo gpwi'wdspi ''y g'' EKU'f gxleg0Wdspi ''y g''f cwc''r qlspwi'j ki j nki j vgf ''lsp''{ gmyy 'lsp''Crrgpf lz'F08<'Tcy 'Fcwc'lgh'' O gcuwt go gpwi'Vcdng'hqt ''EKU'f gxleg''\*Tco r ''3'O gcuwtgo gpv'C+'y g''cxgtci g'ku''ecnewncvgf <

O gcuwtgo gp<sup>V</sup>C <  

$$\frac{1}{n} \sum_{i=1}^{n} a_i = \frac{1}{n} (a_1 + a_2 + a_3 + ...)$$

$$= \frac{1}{9} (42.26 + 46.91 + 49.13 + 47.70 + 48.76 + 49.55 + 34.66 + 39.70 + 46.31)$$
? '67022'kpej gu

Wukpi ''y g'f cvc''r qkpvu''j ki j nki j vgf ''kp''d**nwg''**kp''C**rrgpf kz'F (B<'Tcy 'F cvc''qh'O gcuwt go gpw''Vcdrg**'' hqt ''E KU'f gxkeg''\*Tco r ''3''O gcuwt go gpv''E+'y g''cxgtci g''ku''ecnewncvgf <

O gcuwtgo gpv'E<  $\frac{1}{n} \sum_{i=1}^{n} a_i = \frac{1}{n} (a_1 + a_2 + a_3 + ...)$   $= \frac{1}{9} (4.32 + 4.74 + 5.13 + 4.69 + 5.04 + 5.53 + 2.70 + 2.92 + 5.41)$ ?'6072'

Wukpi ''y g'f cvc''r qkpuu'j ki j nki j vgf ''kp''r wt r ng'kp''Cr r gpf kz 'F (B<T cy 'F cvc''qh'O gcuwt go gpw

Vcdrg'hqt"EKJ'f gxkeg'\*Tco r '3'O gcuwtgo gpv'R+'y g''cxgtci g'ku''ecrewrcvgf < O gcuwt go gpv'R<

$$\frac{1}{n}\sum_{i=1}^{n} \quad a_i = \frac{1}{n}(a_1 + a_2 + a_3 + \dots)$$
$$= \frac{1}{9}(48.40 + 49.19 + 50.52 + 48.68 + 49.57 + 49.90 + 27.74 + 46.93 + 49.01)$$

? "68088" kpej gu

Wukpi ''y g''f cw''r qkpul'j ki j rki j wf ''kp''qt cpi g''kp''Crrgpf kz'F @<'Tcy 'F cw''qh'O gcuwt go gpuu Vcdrg'hqt "EKU'f gxleg'\*Tco r '3'O gcuwtgo gpv'Y +'y g''cxgtci g'ku''ecrewrcvgf <

$$\frac{1}{n}\sum_{i=1}^{n} a_{i} = \frac{1}{n}(a_{1} + a_{2} + a_{3} + \dots)$$
$$= \frac{1}{9}(0.42 + 0.61 + 1.53 + 1.98 + 2.04 + 2.25 + 0.01 + 2.67 + 2.70)$$

?''307:



#### Crrgpf kz'F66<Cxgtci gf 'O gcuwtgo gpwl tcrj u'hqt'Gcej 'Ewtd



#### Crrgpf kz'F (6<Cxgtci gf 'O gcuwt go gpwl I tcrj u'hqt'Gcej 'Ewtd'\*eqpwlpwgf +

#### Crrgpf kz'F Ø<Cxgt ci gf 'Vko g'O gcuwt go gpwl'Vcdng'hqt 'Gcej 'Ewt d

F wtkpi ''y g''wugt''tkcni.''qpg''qh''y g''yco 'o go dgtu'j gr gf ''y g''uwdlgev'pqyg'f qy p''y g'o gcuwtgo gpw" qp''c'f qewo gpv.''c'l'qd''pqto cm{ 'f qpg''d{ ''cpqy gt''eqptcevqt0Vj gtghqtg.''y g''tqy ''õz4'O cp''J qwtuö'' eqwpwl'hqt''y g'f qwdrgf ''vo g''y cv'kv'y qwrf 'j cxg''vcngp''kh''y gtg''y cu''cpqy gt''uwdlgev'r tgugpv'' tgeqtf kpi ''y g''o cpwcn'f cvc0

Vcdrg'508 <cxgt 'gcej="" 'kp'ugeqpf="" 't="" ci="" cor="" g'o="" g'vko="" gcuwt="" go="" gpwlhqt="" th="" u<=""></cxgt>					
	Ewtd'3	Ewtd''4	Ewtd'5	Ewtd'6	Ewtd'7
EKU	:;055	86022	99047	99083	9205:
O cpwcn	: 20 :	8;066	79055	8:09:	7603
z4'Ocp'J qwtu	: 20 :	8;066	79055	8:09:	7603

# Crrgpf kz'F (8<Cxgtci gf 'Vko g'O gcuwtgo gpwl I tcrj 'hqt'Gcej 'Ewtd



I tcrj ''503

#### Crrgpf kz'F

#### Vcum'6 d qf kh{ ''y g'EKU'F guki p

# Kpvt qf wevkqp

#### F grlxgt c d rg

F guki p"ej cpi gu'y cv'ctg'kf gpvkhgf 'y tqwi j 'y g'xchf kk{ "cpf 'tghcdktkk{ 'vgukpi 'kp'Vcun5'y kn'dg" wugf 'vq'kf gpvkh{ "cp{ 'hkpchf guki p"ej cpi gu'pgeguuct { 'hqt'y g'hkpchEKU'r tqf wev0Hgy 'f guki p"ej cpi gu" ctg'cpvkekr cvgf .'y qwi j 'y gtg'o c{ 'dg'wucdktkv{ ''qt'r gthqto cpeg'ej cmgpi gu'y cv'ctg'kf gpvkhgf ''chgt" tgr gcvgf 'vgukpi ''d{ ''f cvc''eqmgevqtu0F guki p''f tcy kpi u'cpf ''y g''f gxkeg'y kn'dg''o qf khgf ''q''cf f tguu'' y qug'wucdktkv{ ''qt'r gthqto cpeg''ej cmgpi gu.''cpf ''c'hwm{ ''qr gtcvkqpchEKU'kpur gevkqp''qqn'y kj ''wugt'' o cpwcn'y kn'dg''f gfxgtgf ''q''RgppF QV0C''tgr qtv'f guetkdkpi ''y g''f guki p''o qf khkecvkqpu.''c'hkpcn'ugv'' qh'f guki p''f tcy kpi u.''cpf ''c'hwm{ ''qr gtcvkqpcn'wr f cvgf ''r tqvqv{ r g''qh'y g'EKU'kpur gevkqp''qqn'y kj ''wugt'' o cpwcnD

# Gzgewwłasg'Uwo o ct{

# O gej cplecn

Hqewu'i tqwr 'hggf dcem'i wkf gf 'o gej cplecn'f guki p''ej cpi gu'y qwrf 'o cmg''y g''EKU'c''o qtg''wugt/ htlgpf n{ 'cpf 'ceewtcvg''qqn0C''eqo r myg''ugv'qh'f tcy kpi u''y cv'tghrgev'y gug''ej cpi gu''ctg'kpenwf gf 'kp'' Cr r gpf kz 'C0'Hqewu'i tqwr 'r ctvlekr cpwi'gzr tguugf ''eqpegtp''y ky ''y g''uwutf kpguu''qh''y g''dcug.'' f wtcdkrkv{ 'qh''y g''dcwgt { 'j qnf gt.'c''pggf ''hqt''c''uj tqwf ''q''r tqvgev'y g''grgevtqpleu.''cpf ''c''pggf ''q'' lo r tqxg''ucevkqp''qh''y g''y j ggni''q''tgf weg''y g''hngrkj qqf ''qh''urkr r kpi 0'Dcugf ''qp''y ku'hggf dcem''y g'' o cf g''y g''hqmqy kpi ''ej cpi gu<

- 3+" Vq'kpetgcug'y g'uwtf kpguu'qh'y g'dcug. 'y g'dcug'f guki p'y j kej 'y cu'r tgxkqwun{ 'c'ukpi mg'm { gt"qh'CDU' r muxke'y cu'ej cpi gf 'vq' y q'r kgegu'qh'5 B8ö'CDU'y ky "ö'j ki j 'f gpukx{ 'hkdgtdqctf '\*J F H+'r megf 'kp" dgw ggp0J F H ''cnuq ''mpqy p''cu'j ctf dqctf . 'ku'r tko ctkn{ ''wugf 'hqt'j gcx { 'f wv{ ''eqpuxtwexkqp'y qtml'cpf '' r tqxkf gu'uvcdktkx{ 'hqt'c''nqpi 'r gtkqf ''qh'ko g0Vj g''m { gtgf ''dcug'r mvg''cr r tqcej ''f getgcugu'y g''ej cpegu'' qh''dtgcmci g''cpf ''kpetgcugu'uvcdktkx{ ''f wtkpi ''o gcuwtgo gpv0
- 4+" Vq"kpetgcug"y g'f wtcdktkv{ "qh"y g'dcwgt { 'j qnf gt."c"uktkeqpg"uvtcr 'j cu"dggp"cwcej gf "vq"y g'j cpf ng"hqt" gcu{ 'tgo qxcn'cpf 'r ncego gpv'qh'y g'dcwgt { 0
- 5+" Vq"r tgxgpv'y cvgt "qt"ut wewt cnlf co ci g"vq"y g"gnge tqpkeu"qp"y g"EKU."c"r nœvke "uj tqwf "y cu"etgcvgf " y j kej "ecp"dg"gcukn{"tgo qxgf "qt"kpuvcmgf "y ky "dqnu0Vj g"gz twf gf "vcdu"y ky "j gzci qpcnlewu"cmqy " hqt"gcu{"tgo qxcn"cpf "cxqkf "gz vgtpcn"kgo u"kpvgthgtkpi "y kj "y g"f gxkeg0Hwt y gto qtg."c"pgy "cpi ng" dtcengv'y cu"etgcvgf "hqt"y g"r wtr qug"qh"cvcej kpi "y g"gpeqf gt "vq"y g"dcug"r nevg"ugewtgn{0Vj g"cvdu" kpugt vgf "kpvq"y g"dcug"r nevg"j cxg"dggp kpetgcugf "d{"y kf y "cpf "ngpi y "vq"gpuvtg"ucdktkv{0Ncuvn{."c" dtcpf /pgy "cf f kkqp"vq"y g"EKU'ku'y g"vko kpi "dgnvu{uvgo ."y j kej "eqpvckpu"y q"i gctu'y kj "c"vko kpi " dgnv'vq"kpetgcug"o gej cpkecn'ghhekgpe{0Vj g"ncti gt"i gct"ku"cvcej gf "vq"y g"gpeqf gt "hqt"o gcuvtgo gpv"

qh'j qtk qpvcn'f kuvcpegu O'Vko kpi "dgnu<br/>"ctg"npqy p"vq"j cxg"c"<br/>nqpi gt "hhgvko g"cpf "r tgxgpv'gcu{" dtgcmci g<br/>0 $\!$ 

6+" Vq"cfftguu"eqpegtp"y kj "y g"ceewtce{"qh"o gcuwtgo gpv'cu"c"tguwn/'qh'ny "eqpvcev'qh'y j ggnu'\q"y g" i tqwpf0Vj g"y j ggn'o cvgtkcn'y cu"ej cpi gf "\q'twddgt"\q"kpetgcug'\tcevkqp"y kj "y g"r cxgo gpv0

# Uqhyy ct g'( 'Rt qeguu

Vcum'8'kpvgtxkgy u.'cu'y gm'cu'f ktgev'wugt'vguvkpi .'tgxgcngf ''c'hgy ''ng{ "ctgcu''y cv''y g''uqhwy ctg'' wucdkrkv{ ''eqwrf ''dg''ko r tqxgf 0'Vj gug''ko r tqxgo gpvu''egpvgt''ctqwpf ''y g''pggf ''q''ecnkdtcvg''y g''cpi ng'' ugpuqt.''cu''y gm'cu''y g''wucdkrkv{ ''kp'f ktgev'uwprki j v0'Dcugf ''qp''y ku'hggf dcem''y g''o cf g''y g''hqmqy kpi '' ej cpi gu<

- 3+" Vj g'r tgxkqwu'echdtcvkqp'r tqegf wtg'tgs wktgf 'wugtu'vq'tg/echdtcvg'vj g'ceegngtqo gvgt 'gcej " vko g'dghqtg'r gthqto kpi 'c'pgy 'i tcf g'o gcuwtgo gpv.'ugwkpi 'c'pgy '| gtq'r qkpv'gcej ''ko gO' Vguv'wugtu'gzr tguugf 'htwutcvkqp'y kj 'vj g'htgs wgpe { 'cpf 'f khkewn{ ''qh'echdtcvkqp." gur gekcm{ ''dgecwug'kv'y cu'r gthqto gf ''wukpi ''c'dwddng'ngxgri'cv'vj g''dcug''qh'vj g''f gxkeg0lfp'' cf f kkqp. 'kpvgtxkgy ggu'htqo ''Vcurn8''gzr tguugf ''eqpegtpu''vj cv'vj ku'echdtcvkqp''r tqegf wtg'' o c { 'kpvtqf weg''o qtg''gttqt 'kpvq''o gcuwtgo gpvu. ''gur gekcm{ 'kp''o qwpvckpqwu''ctgcu''y j gtg''kv'' o c { ''dg''f khkewn/'vq''hkpf ''c''ngxgri/uwthceg''kp''y g''hgrf ''vq''wg''hqt''echdtcvkqpO'Cu'c''tguwn.'' ugpuqt''echdtcvkqp''ku''pqy ''qr vkqpcn''dghqtg''gcej ''o gcuwtgo gpvikhi'c''wugt'y kuj gu''q'ugv'c''pgy '' | gtq''dcugnkpg0'Vj g'E KU'f gxkeg'y kni'dg''echdtcvgf ''qpg''ko g''chigt' ki kcn'hgxgrf)
- 4+" Vq"cf f tguu''y g"eqpegtpu''cdqwi'wugt 'kpygthceg''xkukdkkk{ 'kp"f ktgev'uwprki j v."o qdkg" eqo r wkpi 'r gtuqppgri'cv'RgppF QV''y gtg"eqpvcevgf ''q"cf xkug''cdqwi'j qy ''y g{ ''uqrxg''y ku'' kuuwg''y ky "gz kukpi "o qdkrg"cr r rkecvkqpu'kp"y g'hgrf 0'Vj ku'qwtgcej 'tgxgcrgf ''y cv'pq" uqrwkqp"gz kuwi'hqt 'y ku''r tqdrgo ''cv'RgppF QV''qy gt ''y cp''cxqkf kpi ''f ktgev'uwprki j v0'Vq''j gr '' crngxkcvg''y ku''kuuwg. 'wugt 'kpygthceg''grgo gpui'y gtg"go dqrf gpgf ."cpf ''cp"cpvk/i rctg'uetggp" eqxgt 'y cu''cr r rkgf ''q''y g''cdrgv'eqo r wgt0'Wugtu''o c{ ''crnq''y kuj ''q"gpcdrg''ceeguukdktk{ '' hgcwt gu''qp ''y g''kRcf .''uwej ''cu''kpetgcugf ''eqpvtcuv'qt''eqrqt''kpxgtukqp''kh''y g{ ''hggrl'y cu''r gug'' hgcwt gu'j gr ''kpetgcug''xkukdkrkv{ 0'Vj g''wughwrpguu''qh''y gug''ceeguukdkrkv{ ''hgcwt gu'y cu''hqwpf '' vq''dg''uwdlgevkxg''cpf ''qxgtcm'pqv''gpvktgn{ ''gh'gevkxg0'Vj gug''ej cpi gu''j gr gf ''o cti kpcm{ .''dw'' y g''o quv'ghigevkxg''uqnwkqp'ku'uvkm'\q''cxqkf ''f ktgev'uwprki j v'kti'r quukdrg0

# 3''@'Wugtøu'O cpwcrlI gpgt crlKphqto cvkqp

# 308''U{ uvgo 'Qxgt xlgy

Vj g'Ewtd'Kpur gevkqp''U{ uvgo '\*EKU+'ku'c'f gxkeg'\q's wkemn{ "cpf "ghhlekgpvn{ "gxcnvcvg"ewtd/tcoru'hqt" Cogtkecp''F kucdkrkkgu''Cev'\*CFC+'uvcpf ctf u0'Kpkkcm{ "c'o cpwcn'r tqegf wtg.''yj g'f gxkeg''gxcnvcvgu" cm'o gcuwtgo gpvu''qp''yj g''EU/6623'hqto ''cpf ''tcpuhgtu'yj cv'f cvc''wukpi ''CTEI KU.''c'i gqi tcrj ke'' kphqto cvkqp'kpvgthceg''f guki pgf ''q''nggr ''tcemi'qh''yj g''necvkqp''qh''yj g''tcoru0'Cp'KQU''crr''y cu'' f gxgqrr gf ''q''etgcvg''c''htkgpf n{ ''wugt''kpvgthceg'\*Tghgt''q''I gwkpi ''Uvctvgf ''hqt''o qtg''kphqto cvkqp+0

#### 304'' Qti cpk cvkqp'qh'yj g'O cpwcn

**3'' (2'I gpgt chliphqt o cvkqp**<'Vj ku'ugevkqp"gzr rckpu'yj g'dcuku'qh'yj g'f gxkeg'kpenwf kpi 'ku'' r wtr qug. 'wugt 'dcemi tqwpf 'cpf 'ku'i gpgtchligcwstgu0

**4'' (2'U{ usgo 'Uwo o ct {** <"Vj ku'ugevkqp'r tqxkf gu'c'i gpgtcn'qxgtxkgy "qh'y g'u{ugo 'y tkwgp'kp" pqp/vgej pkecn'vgto kpqnqi {0Vj g'uwo o ct { "uj qwrf "qwrkpg''y g'wugu'qh''y g'u{ugo 'kp" uwr r qtvkpi "y g"cevkxkkgu"qhi'y g'wugt "cpf 'uvchi0

**5'' (2'I gwłpi 'Uvct wsf** <'Vj ku'uge wqp ''r tqxkf gu''c'i gpgtcn'y cmj tqwi j ''qh'y g''u{uvgo ''htqo '' kpkkc wqp''y tqwi j ''gzk0'Vj g''ni kecn'cttcpi go gpv''qh'y g''kphqto cwqp''uj cm'gpcdng''y g'' hwpe wqpcn'r gtuqppgn''q''wpf gtuvcpf ''y g''ugs wgpeg''cpf ''hnqy ''qh'y g''u{uvgo 0'Wug''uetggp''r tkpu'' vq''f gr kev'gzco r ngu''qh''ygzv''wpf gt ''gcej ''j gcf kpi 0

**6'' (2'Wulpi 'tj g'U{ uvgo** <'Vj ku'ugevkqp''r tqxkf gu'c''f gvckrgf ''f guetkr vkqp''qh''tj g''qprkpg''u{ uvgo " htqo "kpkkcvkqp''tj tqwi j ''gz kv.''gz r nckpkpi ''kp''f gvckri'tj g''ej ctcevgt kuvkeu''qh''tj g''tgs vktgf ''kpr wi'cpf " u{ uvgo /r tqf vegf ''qwr w0

7'' **(2'T gr qt vlpi** <'Vj ku'ugevlqp'f guetkdgu'cpf 'f gr kevu'cm'uvcpf ctf 'tgr qtvu'yj cv'ecp'dg'i gpgtcvgf " d{ 'yj g'u{uvgo "qt'lpvgtpcn'vq'yj g'vugt0

#### 305" Cetqp{ou'cpf 'Cddtgxkcvkqpu

- É' EKK Ewtd'Kpur gevkqp''U{ uvgo
- É' CFC Cogtkecp'Fkucdkrkkgu'Cev
- É' Ctel KLKCte'l gqitcrjke'Kphqtocvkqp'U{uvgo

# 4"02'U{uvgo 'Uvo o ct{

#### 408'' U{ uvgo 'Eqphi wt cvkqp

U{uvgo "eqo r qpgpvu"ctg"uj qy p"kp"vj g"hki wtg"dgrqy 0



#### 2.2 Data Flows



Hktuv."c"wugt"uggevu"y g"ewtd"tco r "f ko gpukqp"y cv"y g{ 'y kuj "\q"o gcuwtg0Vj gp."y g"wugt"j cu"y g" qr kqp"\q"echdtcvg"y g"ugpuqtu"qt"\q"unkr "y ku"r tqeguu"cpf "uxctv'o gcuwtkpi 0Vj g"wugt"y gp" o gcuwtgu'y g"f ko gpukqp."y j gy gt 'y cv"dg"c"f kuxcpeg"qt"r gtegpv"i tcf g"o gcuwtgo gpv0Chigt" o gcuwtgo gpv"ku"eqo r ngvg."eqo r nkcpeg"y kj "CF C"tgi wncvkqpu"ku"kpf kecvgf "d{ "y g"eqnqt"qh"y g" o gcuwtgo gpv"pwo dgt0Vj g"o gcuwtgo gpv"o c{"dg"tgf qpg."qt"y g"wugt"o c{"o qxg"qp"\q"y g"pgzv" o gcuwtgo gpv0Chigt"o gcuwtgo gpv."y g"f cvc"ku"gpvgtgf "kpvq"cp"qpnkpg"CteI KU"f cvcdcug0Vj ku"f cvc" o c{ "ncvgt"dg"gzr qtvgf "kpvq"EUX"hqto cv"vq"dg"cpcn{| gf "kp"Gzegn0Kp"y g"hwwtg."gzr qtv"kpvq" EU6623"hqto cv"o c{"dg"ko r ngo gpvgf 0

# 5" @'I gwkpi 'Uvct vgf

Dghqtg'wukpi ''y g'f gxkeg.''y g'wugt''o wuv'f qy prqef ''y g''crr.''rqi kp.''eqppgev''q''Dnvgvqqyi.''cpf ''ecrkdtcvg''y g''EKU'f gxkeg0'Kp''cff kkqp." y g'wugt''o wuv'o cng''uwtg''cni'y ktgu''ctg''eqppgevgf.''kpenvf kpi ''y g'y ktgu'twppkpi ''htqo ''y g''grgevtqpkeu''dqctf ''q''y g''gpeqf gt''cpf '' dcwgt { ''r cen0'Vj g''mmy kpi ''ugevkqp''y kmi'f kuewu''gcej ''o gpw'hwpevkqp''kp''y g''crr necvkqp0

#### 508'' Nqi i kpi 'Qp

Vj g'hqmqy kpi 'ko ci gu'y km'uj qy 'c'uvgr/d{/uvgr 'i wkf g"gzr nckpkpi 'j qy ''q'wug''y g"cr r 'y ky ''y g"EKJ'' f gxkeg0Qpeg''y g"cr r 'j cu'dggp''f qy pmcf gf ''cpf ''qr gpgf .''c''nqi kp''uetggp''y km'cr r gct ''ecr wtgf '' dgmqy 0

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Qpeg"cv'ý ku'uetggp."ý g"wugt"uj qwrf "gpvgt"etgf gpvkcnu"cpf "ugrgev'Nqi kp0

#### 504'' Eqppgevlpi 'tq'Dnvgvqqvj

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qp''y g''cxckrcdrg''f gxkeg''q''eqppgev0Kf'pq''f gxkegu''u qy ''w . ''r ngcug''f q''y g''rqrrqy kpi<

- $\acute{E}$  I q"'q"**Ugwlpi u**'qp"{qwt 'r j qpg
- É' I q''vq'**Dnvgvqqvj**
- É' O cng''uwtg''{qwt **'Dnwgvqqvj 'k**u''wtpgf '**QP**

Ki'y g'wugt ku'wpcdng''q'hkpf 'c'Dnwgvqqy 'eqppgevkqp.''t { 'tguvct kpi ''y g'f gxkeg0

# 505" U{ uvgo 'O gpw

Vj g'hqmqy kpi 'hwpevkqpu'nknvgf 'dgmqy 'y km'dg"gzr nckpgf 'kp'hwt y gt 'f gvckn'qp'y j cv'kv'ku'wugf 'hqt0 Rngcug'tghgt 'vq'y g'RgppF QV'EU/6623<u>'hqto '</u>y j kng'i qkpi 'y tqwi j 'y g'u{ uvgo 'o gpw0

# 505080' Gf kvqt 'Køhqt o cvkqp

Vj g"gf kqt"kphqto cvkqp"o gpw'eqpvckpu'vgzv'dqzgu'uko knct"vq"yj g"EU/6623"hqto "vq"j gn "yj g"wugt" kf gpvkh{ 'vj g"tco r "dgkpi "o gcuwtgf 0Dqzgu'y kyj "õtgs wktgf "hkgnf ö"qt"cpf "õ, ö"ctg"o cpf cvqt {0

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Editor Information Ramp Measurements	FIELD INVESTIGATOR 1	FIELD INVESTIGATOR 2				
Qualitative Attributes Photos	COUNTY NAME	COUNTY CODE				
	Required field MUNICIPALITY NAME	MUNICIPALITY CODE				
	Required field ENGINEERING DISTRICT CODE	Required field				

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- É' O wpkekr crkv{ 'P co g'( 'Eqf g
- É' Gpi kpggtkpi 'F kuxtkev'Eqf g

# 505040' Tco r 'O gcuwt go gpwu

F gxleg"ecnldtcvlqp"y knldg"gzr nckpgf "hwtyj gt"kp"602"Wukpi "yj g"U{ uvgo "ugevlqp0Vj ku"vcd"ku"wugf "vq" vcng"cmlo gcuwtgo gpvu"qh"yj g"tco r 'y j kej 'y knldg"hwtyj gt"gzr nckpgf "qp"608"J qy "vq"Vcng"c" O gcuwtgo gpv0



#### 505050S werksevksg'Cwtkdwvgu

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×	Qualitative Attributes						
Editor Information	Construction Phase		Ramp Cross	Ramp Crossses			
Ramp Measurements	Constructed Ex-Surveye	ed Missing	State Rte Local Rd		Both		
Qualitative Attributes	Accessible Push But	tons	Status				
Photos	Yes No	N/A	Current		Achive		
	Ramp Surface						
	Brick	Brick Co			ncrete Other		
	Detectable Warning Surface						
	Pedestrian Crossing	$\bigcirc$	Pedestrian Crossing Ty	rpe			
	Utilities in Path of Travel	Utilities in Path of Travel		Water Ponding in Path of Travel			
	Ramp at Stop or Yield Controlled Crosswalk	0	Ramp Leads to Accessible Path		0		
	Turning Maneuver in Street	$\bigcirc$			0		
	Surface Stable, Firm, and Slip-Resistant	0	Service Level				

Vj ku'\cd'kpenvf gu'cf f kkqpcn's wgukqpu'hqwpf "qp''y g'EU/6623'hqto 0'Vq'ucxg''y g'kphqto cvkqp."enkem' y g'eqttgev'ej qkeg0 505060' Rj qvqu

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Vj g'wugt 'ku'cdng' \q'\cng''r lewstg''qh' \y g'ewtd/tco r 'wukpi '\y g'kRcf 0'Vj g''r lewstgu''ecp''dg' \vr mcf gf " qp\q' \y g''cr r 'hqt 'hwt y gt 'wug''cpf ''gcukgt 'kf gp\khlec\kqp0

# 506'' Gzkv'U{ uvgo

 $Vq"gzk'y g"ewt gpv"f cvc"gpvt {."enkem'y g"<math>\delta Z \delta$ "kp"y g"vqr "hghv"eqt pgt 0 Enkemkpi " $\delta Z \delta$ "y km't gf kt gev"dcem" vq"y g"o cr 0 Ugrgev"y g"j qo g"dwvqp"vq"gzkv"y g"cr r nkevkqp0

# 6'' 02'Wakpi 'tj g'U{ uvgo

Rıgcug't gigt ''q''y g''t clplpi <u>''xkf gq'</u>'q' liqımqy ''cıqpi ''qp''j qy ''q''wug''y g''E KU'f gxleg0'Ki'wpico kıkct 'y ky '' cp{ ''qh''y g'o gpw'hwpevlqpu.''r ngcug't gigt ''q''505 ''U{ uvgo ''O gpw0

# 608'' J qy 'tq'Vcng'C'O gcutt go gpv

Kp''qtf gt''vq''cf f ''c''tco r .''y g''wugt''o wuv'enlem'qp''y g'ö- ö''dwwqp''nqecvgf ''qp''y g''dqwqo ''nghv'j cpf'' eqtpgt0'Ewttgpv''nqecvlqp''ku'kpf lecvgf ''d{ ''c''dnwg''f qv0



C 'ulf g'dct 'y km'r qr 'wr 'y kj 'c 'huv'ewtd'tco r 'v{r gu0Uetqm'wr 'vq'ugg'y g'huv'qh''cm'cxckrcdrg'ewtd'' tco r u0'Vq''ugrgev'c 'f gult gf 'ewtd'tco r 'v{r g. 'enlem'y g''r lewstg0



Eqphto "{qwt 'ugngevkqp 'ku'eqttgev'd{ '\cr r kpi "{gu'qp '\j g''r qr /wr 'o guuci g0'Vj gp '\cr '\j g'f guktgf " mecvkqp "qh'\j g'tco r 'qp '\j g'o cr 'hqt'o gcuwtgo gpvu0'Vj g'wugt'y kn'dg'f ktgevgf '\q'\j g'Gf kqt" Kohqto cvkqp '\cd0'Vj g'Wugt'y kn'kpr w'cm'pgeguuct { 'kphqto cvkqp 'cpf 'enlem'qp 'Tco r 'O gcuwtgo gpvu0' Rngcug 'hqmqy '\j g'f ktgevkqpu'dgmy '\q'ecnkdtcvg'\j g'u{uvgo 'dghqtg'wuci g0

# 60806''J qy 'tq'Ecnkdt cvg'tj g'EKU

Rıgcug'tgligt '\q'\tckpkpi <u>'xkf gq</u>'liqt''cf f kkqpcılkpliqto cvkqp''qp''ecıkdtcvkqp0'Rıceg''y g''EKU'f gxleg''qp''c'' hıcv'uwtheg''cpf ''o cıng''uwtg''y g''dwddıg'kp''y g''gxgriliqecvgf ''qp''y g''f gxkeg''ku''egpvgtgf 0'Qpeg'' ucvkuhkgf ''y ky ''y g''ngxgril'r nego gpv.''r tguu''y g'**öEcıkdtcvg'Ugpuqtuö''**dwwqp''nqecvgf ''qp''y g'**öTcor**'' **O gcuwt go gpwö''**cr ''qhi'y g''u{uvgo ''o gpw0'Vq'tgfq''y g''ecıkdtcvkqp.''r tguu''y g'öEcıkdtcvg''Ugpuqtuö'' dwwqp''ci ckp0

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Ugngev'c''ewtd''tco r ''o gcuwtgo gpv'ngwgt0Cu''uj qy p''cdqxg.''yj g''j qtk qpvcn'f kuvcpeg.''o gcuwtgo gpv'' O.''j cu''dggp''ugngevgf0O cpwcm{ "gpvgt''yj g''ewtd''tco r ''o gcuwtgo gpv''qt''wug''yj g''EKU'f gxkeg''q''qdvckp'' yj g''o gcuwtgo gpv0Rrceg''yj g''dceni'yj ggnu''qh''yj g''EKU'f gxkeg''qp''yj g''uvctvkpi ''r qkpv.''enkeni'uvctv.''cpf '' urqy n{ ''r wuj ''yj g''f gxkeg''kp''c''uvcki j v'hkpg''q''yj g''qyj gt''ukf g''kni'yj g''htqpv'yj ggni'tgcej gu''yj g''gpf '' r qkpv.''yj gp''r tguu''yj g''uvqr ''dwvqp0'Ki'yj g''o gcuwtgo gpv'ku''wpucvkuhcevqt{.''yj g''wugt''o c{ ''o gcuwtg'' ci ckp0'Qyj gty kug.''yj g''cr r nkecvkqp''y kni'ygm'yj g''wugt''y j gyj gt''yj g''o gcuwtgo gpv'ku''eqo r nkcpv'y kj '' CF C''tgi wrcvkqpu0



O gcuwtgo gpul'y cv'j cxg"pqv'dggp'\cngp"qt"ctg"pqv'eqo r ncpv'y kj "dg"kp"tgf 0'O gcuwtgo gpul'y cv' o ggv'TE/89O "y kn'dg"cwqo cvkecm{ "uj qy p"kp"dnvg0

#### 60804'' Gf kskpi 'C'Ewtd'Tco r

Vq'gf ks'c'r tg/gz kuklpi 'ewtd/tco r 'y g'wugt'y kn'enkem'y g'õZ ö'kp'y g'vqr 'nghv'j cpf 'eqtpgt'y j kej '' tgf ktgevu'y go 'vq'y g'o cr 0Cm'r tg/gz kuklpi 'ewtd'tco r u'j cxg'c'dnwg'õ- ö'ukl p'qp'y g'o cr 0Vcr 'y g'tco r 'y cv'pggf u'vq'dg'o qf khgf 'cpf 'j ks'y g'ökö'kp'y g'r qr wr 'y j kej 'y kn'tgf ktgev'y g'wugt'vq'y g'u uwgo 'o gpwhwpevkqpu0



#### 604'' Ecxgcwicpf 'Gzegrwqpu

Vq"gpuwtg"<br/>'j g'wugt 'ku'cdrg''q'tgvtkgxg"<br/>'j g'f cvc"ch<br/>vgt 'o gcuwtgo gpvu'j cxg"dggp''<br/>cr<br/>ngp"<br/>'j g{ 'o wuv'f q'' y g'hqr<br/>nqy kpi<

 $\acute{E}$  F cvc'o ww'dg'wr mcf gf "cpf 'tgytlgxgf 'lp'r tgugpeg''qh'y k/hk'qt 'egmwrct 'f cvc

É O cng'uwtg''cm'lphqto cvkqp''kpr wwgf ''kp''Gf kqt''Kphqto cvkqp''cpf ''S wcrkwcvkxg''C wtkdwgu'ku'' eqttgev

# 702'T gr qt vkpi

Vj ku'ugevkqp'f guetkdgu'cpf 'f gr kewi'cm'uvcpf ctf 't gr qt vu'vj cv'ecp''dg'i gpgtcvgf ''d{ ''vj g''u{uvgo ''qt'' kpvgtpcn'vq''y g''vugt0

# 708'' Tgrqt v'Ecrcdktkkgu

Wugtu'j cxg''y g''ecr cdktw{ ''vq''eqpxgtv''y g''o gcuwtgf 'f cvc''kpvq''gzegn'f qewo gpwl'hqt'hwty gt'' cpcn{| kpi 0/Cm'f cvc''vcmgp''qt''kpr wwgf ''d{ ''y g''wugt''ku''tgr tgugpvgf ''qp''y g''gzegn'uj ggv'cpf ''ku''ecr cdng'' qh''o qf kh{ kpi 0

# Crrgpf kz

# Crrgpfkz'C<'Fgukip'Ftcykpiu'RFH

Crrgpf kz'D<'Wpej cpi gf 'Ektewkv'cpf 'Uqhvy ctg'Fguki p

# EKTEWKV'FGUK P'CPF'HWPEVKQPCNKV[

# Elt ewky'Qxgt xlgy

#### I gpgtcn'Hgcwtgu

Vj g'EKU'j ctf y ctg''eqpukuu''qhi'cp''J O /33'Dnwgvqqyi ''o qf wrg. 'NKU5NX24F NVT ''ceegrgtqo gygt.'' Ctf wlpq'P cpq''o ketqeqpvtqmgt''U7''qr vlech'gpeqf gt''cpf ''J E/UT26''Uqpct''f kuvcpeg''ugpuqt''\*Hki wtg'' 6c+0'Vj g''wugt''eqpvtqmi'yj g''ektewky'd{ ''qwej kpi 'keqpu''qp''yj g''kRcf ''cr r ''\*'ugg''ugevlqp''*Cr r 'F gxgrqr gt*'' *I wlf g*''hqt''hwt yj gt''f gyckni+0'Vj g''cr r ''tcpuo ku''yj g''kphto cvlqp''q''c''o ketqeqpvtqmgt''xkc''Dnwgvqqyj 0' Vj g''Ctf wlpq''yj gp''f ktgewi'yj g''cr r tqr tkcvg''ugpuqt''q''ccmg''c'o gcuwtgo gpv.''y j kej ''yj g''Ctf wlpq'' r tqeguugu''cpf 'tgwtpu''q''yj g''cr r ''xkc''Dnwgvqqyj 0'Vj g''Ctf wlpq. ''Dnwgvqqyj ''o qf wrg''cpf '' ceegrgtqo gygt''ctg''uqrf gtgf ''f ktgew{ ''q''c''ulpi mg''RED''dqctf ''\*Hki wtg''6d+0'Vj g''uqpct''cpf ''gpeqf gt''ctg'' mecvgf ''gnugy j gtg''qp''yj g''RED''dqctf 0

# Rqy gt "Uwr r n{

Vj g''r qy gt''uqwteg''qh''y g''ektewk/ku''uqtgf 'kp''c''O qr j kg''Ur ceg''Rcem'/''c''r tqvgevkxg''ecug''uwttqwpf kpi " y g''kRcf ''o kpk'y j kej ''eqpvckpu''c''dwkn/kp'7X'': .222''o Cj ''dcwgt { .''y j kej ''ecp''ej cti g''y g''kRcf ''y j kg'' uko wncpgqwun( ''r qy gtkpi ''y g''tguv'qh''y g''ektewkv'xkc''c''WUD''twppkpi ''htqo ''y g''dcwgt { ''f qy p''y g''EKU'' j cpf ng''cpf ''kpvq''y g''Ctf wkpq'\*D(J.'öO qr j kg''Ur ceg''Rcem'y kj ''Gzvgtpcn'Dcwgt { ''( ''54I D''Uvqtci g'' hqt ''kRcf ''o kpk'\*Drcemiö+0'Vj g''EKU'j cu''c''dcwgt { ''hkjg''qh''cv'ngcuv'320 ''j qwtu''qh''eqpvkpwqwu'wug0



**Hki wt g'6c '\*vqr +**{Uej go cvke''qh'EKJ'ektewks0**Hki wt g'6d '\*dqwqo** +{RED''dqctf "\*gpektergf 'kp'tgf +" ku'cwcej gf ''q'EKJ'dcug'r revg0Ctf wkpq''wpkv'ku'xkukdrg''qp''\qr ''qh''dcug'r revg0J gz ''uvcpf qhhu''ctg'' r reegf ''dgwy ggp''yj g'RED''cpf ''dcug'r revg''q''r tgxgpv''yj g''dqctf ''htqo ''tguvkpi ''qp''yj g''r kpu''qh'' grgevtqpke''eqo r qpgpvu. ''y j kej ''eqwrf ''qvj gty kug'f co ci g''yj g''r kpu0

# Ctf wkpq'P cpq'O ketqeqp tqmgt

Vj g'ektewk/ku'eqpvtqmgf ''d{ ''cp''Ctf wkpq'P cpq.''y j kej ''cevkxcvgu''cpf ''f gcevkxcvgu''ugpuqtu.'tgeqtf u'' y gkt'tgcf kpi u.'r gthqto u''pqkug'hkngtkpi .''ceegr wi'eqo o cpf u''ugpv'htqo ''y g''kRcf ''xkc''Dnvgvqqy ''cpf '' tgwtpu'f cvc''q''dg'f kur m{gf 0'Y j gp''y g''vugt''f gekf gu''q''dgi kp''vcmkpi ''c''o gcuwtgo gpv.''y g''vugt'' qwej gu''cp'keqp''qp''y g''crr.''y j kej ''ecwugu''y g''Rcf ''q''ugpf ''c''uvtkpi ''q''y g''Ctf wkpq''kpf kecvkpi '' y j kej ''ugpuqt''pggf u''q''dg''cevkxcvgf.''y wu''ecwukpi ''y g''Ctf wkpq''q''dgi kp''tgcf kpi 'htqo ''y g'' crrtqrtkcvg''ugpuqt0'Y j gp''y g''o gcuwtgo gpv'ku''eqormgv.''y g''vugt''qwej gu''c'f khi'gtgpv'keqp.''ecwukpi '' y g''Rcf ''q''ugpf ''c''uvtkpi ''kpf kecvkpi ''y g''gpf ''qh''y g''o gcuwtgo gpv.''y wu''ecwukpi ''y g''Ctf wkpq''q''uqr'' tgcf kpi 'htqo ''y g''ugpuqt''cpf ''ugpf ''y g''cxgtci g''qh''y g''o gcuwtgo gpv''ucormgu''dcemi'q''y g''Rcf ''xkc'' Dnvgvqqy 0

Vj g'Ctf wlpq''cnıq'ugtxgu''cu''c'r qy gt''uqwteg'hqt''y g''ugpuqtu0'Vj g''Ctf wlpq''ku''r qy gtgf 'htqo ''y g'' ur ceg'r ceni'y tqwi j ''ku''WD''r qtv.''cpf ''r qy gtu''y g''tguv'qh''y g''ektewky'y tqwi j ''ku''7X''cpf ''505X'' r qy gt 'r kpu0

# Crrtqzko cvg'Tqmkpi 'Cxgtci g

Hkngtlpi "qh'y g'uqpet"cpf "ceegrgtqo gygt"o gcuwtgo gpwlku'f qpg'wukpi "cp"crrtqzko cyg"tqnkpi " cxgtci g'\*enuq"npqy p"cu"c<u>"o qfkhlgf "o qxlpi "cxgtci g+</u>0Gs wcykqp"3"f kurne {u'y g'tqnkpi "cxgtci g"chygt" *k*'uco rngu'<u>s</u>

$$\underline{s}_i = ((i-1) \times \underline{s}_{i-1} + s_i)/i$$
\*3+

Y j gtg'<u>ku'ji</u>g'r tgxkqwu'cxgtci g'xcnwg'cpf 'ku'ji g'pgy guv'uco r rg0Vj ku'ecnewrcvkqp'ku'' r tghġtcdrg''q'c''uko r rg'o qxkpi ''cxgtci g''\*y j gtg''j g'cxgtci g''qh'iuqo g''pwo dgt''qh'i'j g''o quv'tgegpv'' r tgxkqwu'xcnwgu'ku''cmgp+'hqt''w q'tgcuqpu0Vj g''htuv'dgpghkv'ku''j cv'c''uko r rg'o qxkpi ''cxgtci g'' tgs wktgu''j g''uqtci g''qh'c''pwo dgt''qh'r tgxkqwu''xcnwgu ''y j kg''cp''cr r tqzko cvg''tqntpi ''cxgtci g''uvqtgu'' qpn{ ''y g''r tgxkqwu''xcnwg''qh''j g''tqntpi ''cxgtci g'<u>xpf</u>1''y g''pwo dgt''qh'uco'r rgu''cmgp''/0Vj ku'' tgf wegu''j g''tgs wktgf 'o go qt { ''cpf ''tgf wegu''j g''hkngtkj qqf ''qh'hovgi gt''qxgthqy ''gttqtu''j cv'ecp''qeewt'' y j gp''cntpi ''j g''uwo ''qh'c'ncti g''pwo dgt''qh'xcnwgu0Vj g''ugeqpf ''dgpghkv'ku''j cv'y g''wugt''f qgu''pqv'' pggf ''q'y ckv'hqt''cp { 'ugv'r gtkqf ''qh'iko g''q''cng''c''egtvckp''pwo dgt''qh'uco r rgu0C ''uko r rg'o qxkpi '' cxgtci g''tgs wktgu''c'ugv'pwo dgt''qh'i'uco r rgu''y d'''cng''c''egtvckp''pwo dgt''qh'uco r rgu0C ''uko r rg''o qxkpi '' exgtci g''q''dg''gttqpgqwun{ ''uo cm0'Vj g''cr r tqzko cvg''o qxkpi ''cxgtci g''y kn'tgwtp''c'tgcuqpcdrg''xcnwg'' chgt''gxgp''c'ukpi rg''uco r rg''enj qwi j ''kvlu'ukn'i' tghgtcdrg''q''crmg''o qtg+.''j wu''cxqkf kpi ''gttqtu'f wg''q'' uvqr r kpi ''o gcuwtgo gpv''chgt''cp'kpuwhkekgpv'r gtkqf ''qh''ko g0

# J O/33'Dnwgvqqy 'O qf wrg

Vj g'J O/33'Dnwgvqqyj 'o qf wrg'ku'wugf 'hqt'Dnwgvqqyj '602''eqo o wpłecykąp''dgw ggp''yj g'Ctf włpq'' cpf ''yj g'kRcf 0'Vj g'J O/33''cf xgtykugu''c''eqppgevkqp. 'yj kej ''yj g'kRcf ''cr r 'f kueqxgtu''cpf ''eqppgevu''vq'' y j gp''yj g''cr r ''uvctuu''wr 0'Dnwgvqqyj ''f cvc''ku'tgrc { gf ''vq''cpf 'htqo ''yj g''Ctf włpq''xkc''ugtkcn'' eqo o wpłecykqp'''ugg''ugevkqp''*Uqhy ct g'F guki p''''Dnwgvqqyj ''Eqppgevkqp*''hqt''hwtyj gt''f gyckn+0

# Ugpuqtu

Uqpct 'F kucpeg''Ugpuqt



Hi wtg'7<J E/UT26'wntcuqple'tcpi lpi 'o qf wrg'wugf 'hqt'o gcuwtlpi 'xgtvlecn'f luvcpegu'' \*TqdqvUj qr.'öJ E/UT26'Wntcuqple'Tcpi g'Hlpf gtö+0

Xgtvkech'f kuvcpegu''ctg''o gcuwtgf ''wukpi ''cp<u>''J E/UT26'</u>'Wintcuqpke''Tcpi kpi 'O qf wg'\*Hki wtg'7+0'Vj g'' J E/UT26''wugu'uqpct''q''o gcuwtg''y g''f kuvcpeg'htqo ''kughf''q''y g''pgctguv'uqhf ''uwthceg''kp''htqpv'qh''k0' Vj g''ugpuqt'j cu'c'tcpi g''qh'4''/'622''eo ''cpf ''cp''ceewtce{ ''qh'5''o o '\*GNGEHtgcmu.''ōWintcuqpke'' Tcpi kpi 'O qf wg''J E''/''UT26ö+0'Crrn{kpi ''c''r wng''qh'j ki j '\*7X+''xqnci g''q''y g''÷Vtki ø'r kp''cevkxcygu'' y g''ugpuqt''q''go kv'c''dwtuv'qh''wntcuqwpf.''cpf ''y g''÷Gej qø'r kp''dgeqo gu''ugv''q''j ki j ''xqnci g0'Qpeg''y g'' dwtuv'qh''wntcuqwpf ''dqwpegu''qhh''y g''pgctguv'uwthceg''cpf ''tgwtpu''q''y g''ugpuqt.''y g''÷Gej qø'r kp'' tgwtpu''q''ny ''\*2X+''xqnci g0'Vj g''Ctf wkpq''f gvgewi''y j g'j gt''y g''÷Gej qø'r kp''ku'j ki j ''qt''ny ''cpf '' tgeqtf u''y g''ko g''v'hqt''r kp''q''tgwtp''q''ny ''xqnci g0'F kuvcpeg'f'''ku''f gvgto kpgf ''wukpi ''gs wcvkqp''4<

$$d = t \times v/2 \qquad *4+$$

Y j gtg"x'ku'ý g'ur ggf "qh'uqwpf "kp'ft { "ckt "cv'tqqo 'vgo r gtcwtg0 $t \times v$ tgwtpu'ý g'vqvcn'f kncpeg vtcxgrgf "d{ "ý g'wntcuqple"r wng. "y j lej 'ku'ý gp'f kxlf gf "d{ "y q'vq'ceeqwpv'hqt'ý g'hcev'ý cv'ý g" r wng'vtcxgru'ý g'uco g'f kncpeg'w leg"\*qpeg'vtcxgrkpi 'htqo 'vj g'ugpuqt'vq'ý g'uwthceg. 'ý gp'ci ckp" y j gp'tgwtpkpi "vq'ý g'ugpuqt+0

Vj g'uqpet'ku'o qwpvgf ''cv'y g'htqpv'qh''y g'EKU'deug'r revg'\*Hki wtg'8c+0'Vq''crng''c'o geuwtgo gpv'qh'' xgtvkecrif kurcpeg'\*'uwej ''cu''y g'j gki j v'qh''c''ewtd+.''y g''wugt'r reegu''y g''deug'r revg''qp''y g''j ki j gt''qh''y q'' uwthegu''uwej ''y cv'y g''uqpet''ku'f ktgevn{ ''cdqxg''y g''j ki j gt''uwtheg.''y gp''qwej gu''cp''keqp''qp''y g''cr r .'' y j kej 'f ktgewi''y g''uqpet''q''o geuwtg''y g'f kurcpeg''htqo ''y g''uqpet''q''y g''j ki j gt''uwtheg''\*Hki wtg''8d+0' Chigt.''y g''wugt''o qxgu'y g''deug''r revg''uwej ''y cv'y g''deug''r revg''ku'uvknitguvkpi ''qp''y g''j ki j gt''uwtheg.'' dwi'ý g'uqpet 'ku'f ktgevn{ ''cdqxg''ý g''nqy gt''qh'ý g''y q''uwthegu'\*Hki wtg'8e+0'Vj g''wgt''ý gp''qwej gu''cp'' keqp'y j kej 'f ktgevu''ý g''uqpet''q''o geuwtg''ý g'f knepeg''dgw ggp''kughi'epf ''ý g''nqy gt''uwtheg0'Vj g'' j gki j v'y kni'dg''gs weni'q''ý g''f khegtgpeg''dgw ggp''ý g''y q''o geuwtgo gpw0



Hi wt g'8c '\*vqr +<'Uqpct ''sgpektengf 'kp'tgf +'ku'o qwpvgf ''cv'y g'htqpv'qh'y g''dcug'r mvg0Hi wt g'8d'' \*dqwqo 'lghv+<Hkuv.''y g'f kucpeg''dgw ggp''y g''uqpct''cpf ''y g''j ki j gt ''uwthceg'ku'o gcuwtgf ''y j kg'' y g'EKU'ku'tguvkpi ''qp''y g''j ki j gt ''uwthceg0Hi wt g'8e'\*dqwqo 'lghv+<'Chgt''y g''htuv'o gcuwtgo gpv.'' y g'EKU'ku'o qxgf ''uq''y cv'y g''uqpct''ku''cdqxg''y g''ny gt ''uwthceg'cpf ''y g''f kucpeg''dgw ggp''y g'' uqpct''cpf ''y g''ny gt ''uwthceg''ku''o gcuwtgf 0'Vj g''j gki j v'qh'y g''ewtd''ku''gs wch'q''y g''f khgtgpeg'' dgw ggp''y g''y q''o gcuwtgo gpvu0

# Ceeggtqo gvgt

I tcf g'y knidg'o gcuwtgf 'wukpi ''c'<u>NKU5NX24F NVT''</u>ceegngtqo gvgt0'Vj g''NKU5NX24F NVT''j cu'c'' tguqnwkqp''qh'0223'i '\*UV.'öO GO U'kpgtvkcn'ugpuqtö+.''y j kej ''y kni'cmqy ''hqt'i tcf g'o gcuwtgo gpvu'' y kj ''cp''cxgtci g''ceewtce{''y kj kp''208''f gi tggu''y j gp''wugf ''q''o gcuwtg''cpi ngu''wpf gt ''702''f gi tggu'' \*'cnj qwi j ''j g''gzcev'ceewtce{''y kni'dg''f gr gpf gpv'qp''y g''cpi ng+0'Vj g''ceegngtqo gvgt''y kni' eqpvkpwqwun{''o gcuwtg''cpf ''tcpuo ki'yi g''ceegngtcvkqp''kp''y g''z.''{ ''cpf ''| ''f ktgevkqp''q''y g''Ctf wkpq''cu'' 38/dki'dkpct{ ''pwo dgtu'tgr tgugpvkpi ''ceegngtcvkqpu''dgw ggp''402''cpf ''/402''i 0'Y j gp''y g''ceegngtqo gvgt'' ku'uvcvkqpct{.''yi gug'o gcuwtgo gpvu'y knikpf kecvg''yi g''eqo r qpgpvu''qh'yi g''nteg''qh'i tcxkv{ 'kp''yi g''z.''{ '' cpf ''| ''f ktgevkqpu'\*z.''/''cpf ''/.'tgur gevkxgn{+.''y j kej ''ecp''dg''wugf ''q''o gcuwtg''yi g''cpi ng''C'kp''f gi tggu'' ceeqtf kpi ''q''gs wcvkqp'5<

$$A = C * \tan^{-1}(\sqrt{x^2 + y^2/z})$$
 \*5+

Y j gtg" $tan^{-1}$  ku"y g"kpxgtug", cpi gpv."cpf "E"ku"cp"gzr gtko gpvcm{ "f gvgto kpgf "eqpuvcpv", wugf "vq ecrkdtcvg" y g"ceegngtqo gvgt0" y g"cpi ng"ku"pgzv" eqpxgtvgf "htqo "f gi tggu", q"r gtegpv" i tcf g"RI" wukpi " gs vcvkqp" 6<

 $PG = 100 \times tan^{-1}(A)$ Y j gtg"tan^{-1}()ku'y g'kpxgtug'\cpi gp\0

Vj g"ceegngtqo gvgt"ku"uqnf gtgf "vq"vj g"RED"dqctf."y j kej "ku"cwcej gf "vq"vj g"EKU"dcug"r ncvg0"Vq" o gcuvtg"i tcf g."vj g"EKU"ku"r ncegf "qp"vj g"uwthceg."cpf "cp"keqp"qp"vj g"cr r "ku"vqwej gf "y j kej "ecwugu" vj g"EKU"vq"eqpvkpwqwun{ "vcng"cpi ng"o gcuvtgo gpvu"vpvkn"vj g"vugt"vqwej gu"c"f kthgtgpv"keqp."y j kej " ecwugu"vj g"EKU"vq"uvqr "vcnkpi "cpi ng"o gcuvtgo gpvu."cpf "f kur nc { "vj g"cr r tqzko cvg"tqnkpi "cxgtci g"qh" vj g"cpi ng"o gcuvtgo gpvu"<sup>\*</sup>ugg"ugevkqp"*Ekt evkv"F guki p"cpf "Hwpevkqpcrkv{"/"Cr r t qzko cvg"Tqnkpi*" *Cxgt ci g*"hqt"c"f guetkr vkqp"qh"vj g"cr r tqzko cvg"tqnkpi "cxgtci g+0

# Gpeqf gt

J qtk qpvcn'f kuvcpegu'uwej "cu'y g"ngpi y "qh'c"ewtd"ctg"o gcuwtgf "wukpi "y g"U7" Qr vkecn'U ch/" Gpeqf gt "\*ur gekhecm{ ''y g"U7/582/472/P G/U/D'o qf gn+0'Vj g"C "cpf "D'r kpu'qh'y g"gpeqf gt 'uy kej " dgw ggp"j ki j "\*7X+"cpf ''nqy "\*2X+"xqnci g"cu'y g"gpeqf gt ''uj ch/'tqvcvgu0Gcej 'r kp"ecp''uy kej 'htqo " j ki j ''q"nqy "cpf ''dceni\*entem+'582' vko gu'r gt 'hwn'tgxqnwkqp"qh''y g"gpeqf gt ''uj ch/\*WU'F ki kcn ''oU7" Qr vkecn'U ch/'Gpeqf gtö+, 'i kxlpi ''y g'EKU'c'tguqnwkqp"qh''027' kp"\*ugg'ugevkqp"*O gej cpkecn'F guki p" cpf ''Hwpevkqpcrkv{ ''/ 'Gpeqf gt 'T gctu'* 'hyt y gt'f gvckn+0'Vj g"uy kej 'htqo ''j ki j ''q"nqy ''xqnci g" dgw ggp"y g''y q"ej cppgni'ku'urki j vn{ ''qhugy'\*, 2'f gi tggu''qw''qh'r j cug+''uq''y cv'y j gy gt''ej cppgn'C" ngcf u'D''qt 'D'ngcf u'C "ecp''dg''wgf ''q'f gvgto kpg''y j gy gt''y g''uj ch/'ku'tqvcvkpi ''kp''c''enqeny kug''qt'' eqwpvgt/enqeny kug'o qvkqp0

Vq"o cng"j qtk qpvcn'o gcuwtgo gpvu."vj g"vugt"vqwej gu"cp"keqp"qp"vj g"crr"vj j kej "ecwugu"vj g"EKU"vq" dgi kp"eqwpvkpi "gpeqf gt"enkemu0"Y j gp"vj g"vugt"vqwej gu"cpqvj gt"dwvqp."vj g"Ctf wkpq"vugu"vj g"vqvcn" gpeqf gt"enkemu"vq"ecnewacvg"vj g"f kavcpeg"vtcxgrgf 0

\*б+"

# UQHVY CTG'FGUN P

# CteI KU

# Kpvt qf wevlqp

Vj ku'ugevkqp'f guetkdgu'ý g'uvgr u'vcmgp''q'f guki p"cpf 'r wdrkuj 'c"ewuvqo 'j quvgf 'hgcwutg'ugtxkeg'ý cv' uvqtgu''ewtd'tco r 'f cvc0D{ 'kpvgtcevkpi 'y kj 'c'o cr 'tgr tgugpvcvkqp''qh''y gug'f cvc. ''wugtu'y kj 'y g'' eqttgev'r gto kuukqpu''ecp''xkgy 'hgcwutgu. "gf kv'cwtkdwgu. "cpf 'cf f 'cvcej o gpvu''q''y g"emqwf 'f cvcugv'' y tqwi j 'CteO CR''hqt 'F gumqr. 'CteI KU''qprkpg. "qt ''y g''EwtdO GV''Cr r 0'Hgcwutg''cpf ''rc { gt 'f guki p'' y cu''dcugf ''qp''y g''Lvpg''4239''xgtukqp''qh''RgppF QVøu''EU/6623''Ewtd''Tco r ''Kpur gevkqp''hqto 0

Dtkghi'gzr ncpcvkqpu''qh'I KU/ur gekhe''vgto kpqnqi { "ctg'i kxgp''q''qtkgpv'c'i gpgtcn'cwf kgpeg=j qy gxgt." hqt''y qug''uggnkpi "c''f ggr gt''wpf gtuvcpf kpi "qh''y g''eqpegr w''kpvtqf wegf. 'GUT Kr wdnkuj gu'htgg''qpnkpg" i wkf gu''cpf ''wwqtkcnu''hqt''cmi'qhi'y g''uqhyy ctg''o gpvkqpgf ''kp''y ku''ugevkqp0

# CteO CR

CteO CR'320608 'hqt 'F gumqr 'y kj 'cp''cf xcpegf 'hegpug'y cu'wugf '\q'i gpgtcvg''j g'htco gy qtmlhqt" y g'j quvgf 'hgcwtg''ugtxkeg''j cv''j g'EwtdO GV''cr r ''ceeguugu''cpf 'wr f cvgu0C''ewtd''tco r 'hgcwtg'' encuu'y cu'f guki pgf ''dcugf ''qp''y g'Lwpg'4239''xgtukqp''qh''RgppF QVøu'EU/6623''Ewtd''Tco r '' Kour gevkqp''Hqto 0'Vj g'hgcwtg''encuu''ugtxgf ''cu''c''yo r ncvg''hqt''uwdencuugu''y cv''ctg''ugr ctcvgf ''d{ ''ewtd'' tco r '\{r g''\*V{r g''3.''V{r g''4. ''gve00'Hgcwtg''rc{gtu'y gtg''etgcvgf ''htqo ''y g''uwdencuugu''cpf ''cf f gf ''q''c'' o cr .''y j kej ''y cu''r wdnkuj gf ''q'CteI KJ'Qpnkpg''cu'c''j quvgf 'hgcwtg''ugtxkeg0'Vj ku''ugevkqp''r tgugpvu'' f guetkr vkqpu''qh''y g''gngo gpvu''havgf ''cdqxg''cpf ''y g''uvgr u'\cngp''q''eqppgev'y go ''qi gy gt0

# Ewtd'Tcor'Hgcwtg'Encuu

õHgcwtg"encuugu"ctg"j qo qi gpgqwu"eqmgevkqpu"qh"eqo o qp"hgcwtgu."gcej "j cxkpi "vj g"uco g"ur cvkcn" tgr tgugpvcvkqp."uwej "cu"r qkpvu."hkpgu."qt"r qn{i qpu."cpf "c"eqo o qp"ugv"qh"cwtkdwg"eqnxo pu."hqt" gzco r ng."c"hkpg"hgcwtg"encuu"hqt"tgr tgugpvkpi "tqcf "egpvgtnkpgu0ö

Vj g'ewtd'tco r 'hgcwtg'encuu'eqpvckpu''cm'r quukdng'hkgrf u'vj cv'c''ewtd'tco r ''eqwrf ''j cxg0'Uwdencuugu'' y gtg''etgcvgf 'hqt''gcej ''ewtd'tco r ''v{r g''cpf ''cf f gf ''vq''c''i gqf cvcdcug0

# F qo clpu

F qo ckpu'y gtg'wugf ''q'ho ki'y g''pwo dgt''qh''xchf ''xcnwgu'hqt''cwtkdwgu.''cpf ''eqttgur qpf ''y kj ''f tqr / f qy p''o gpwu''qp''y g''EU/66230

# Hlgnf u

Gcej 'hgcwtg'j cu'c'ugv'qh'pqp/ur cvkcn'kphqto cvkqp"ecngf 'cwtkdwgu'nkpngf 'vq'k<u>v<sup>ss</sup>Gutk 'õCwtkdwg''</u> <u>Fghkpkskqpö+0</u>Vj g'hgcwtg'encuu'hkgnf u'fghkpg''y g'ugv'qh'cwtkdwgu'cuuqekcvgf 'y ky ''y g'ewtd'tco r 0

# Hgcwtg'Nc{gtu

õC 'hġcwtg'nc{gt'ku'c'i tqwr kpi ''qh'luko knct'i gqi tcr j ke'hġcwtgu.''hqt''gzco r ng. ''dwkrf kpi u.'r ctegn." ekkgu.''tqcf u. ''cpf ''gctyj s wcng''gr legpvgtu0Hgcwtgu''ecp''dg''r qkpvu.''rkpgu.''qt''r qn{i qpu'\*ctgcu+0' Hgcwtg'nc{gtu''ctg''o quv''cr r tqr tkcvg''hqt ''xkuwcnkl kpi ''f cvc''qp''vqr ''qh''{qwt''dcugo cr u0[ qw''ecp''ugv'' r tqr gtvkgu''hqt 'hġcwtg''nc{gtuô uwej ''cu''uv{ng.''vtcpur ctgpe{.''xkukdng''tcpi g.''tghtguj ''kpvgtxcn''cpf mcdgnlô yj cv'eqpvtqn'j qy ''yj g''nc{gt''cr r gctu''kp''yj g'o cr 0Wukpi ''c''hġcwtg''nc{gtuô+tô cpcn{| g. ''cpf ''gzgews''s wgtkgu''ci ckpuv'hġcwtgu''cpf ''yj gkt''cwtkdwgu<u>''Gutk 'õHgcwtg''Nc{gtuô+tô</u>

 $Vq"ckf"s wgt \{ kpi "cpf"f kur m \{ ."hgcwatg"m \{ gtu"ctg"ugr ctcvgf "d \{ 'v{r g0Vj g'hqmqy kpi "hgcwatg"m \{ gtu" y gtg"etgcvgf "hqt"EwtdO GV"/"V{r g"3."V{r g"3C."V{r g"4."V{r g"6."V{r g"6C."V{r g"7."V{r g"8."}} Drgpf gf "Vtcpukkqp."V{r g"C 'O gf kcp."V{r g"D'O gf kcp."cpf "Qy gt0Cmlhgcwatg"m { gtu" cxg"y g" uco g"hlgrf u"gzegr v'hqt"pwo dgtgf "f ko gpulqpu" C."D."E."gwe00Qpn{"vj g"tgs wltgf "pwo dgtgf " fo gpulqpu" transformation of the gtu gtu g" to r" v{r g"ctg"cxckmcdmg"hqt"gcej "m { gt0$ 

Kp"cffkkqp."cm"rcfgtu"jcxg"vyq"uwdrc{gtu"/"Eqorrgvg"cpf"Kpeqorrgvg0Hgcwtgu"kp"vjg"kpeqorrgvg" rc{gtu"fq"pqv"jcxg"cm"tgswktgf"hkgrfu"hkngf"cpf"ctg"fkurrc{gf"ykj"c"eqnqtgf"oZö"u{odqn0Qp"vjg" qvjgt"jcpf."õeqorrgvgö"hgcwtgu"fq"pqv"jcxg"cp{"drcpm"tgswktgf"hkgrfu"cpf"ctg"fkurrc{gf"ykj"c" eqnqtgf"ekterg"u{odqn0Vjg"eqnqt"ku"fgvgtokpgf"d{"vjg"rctgpv"rc{gt0Hgcwtgu"ctg"cwqocvkecm{" cffgf"vq"vjgvg"uwd/rc{gtu"dcugf"qp"vjgkt"õCm"Tgswktgf"Hkgrfu"Hkngfö"cwtkdwg0

# EwtdO GV'O cr

Cnj qwi j "gcej "qh'y g"eqo r qpgpwl'ktwgf "cdqxg"/ 'hgcwtg"emutgu"cpf "m { gtu"/ "ctg"ucxgf "kp 'ugr ctcwg" hkgu. 'y g{ "ctg"dtqwi j v'yqi gy gt 'kp'y g'EwtdO GV'O cr 0 zf 'hkg. "cp"CteI KU'CteO CR"f qewo gpv0' Nc { gtu"htqo 'y g"ecvcmi "ctg"cf f gf 'yq'y g"o cr 0'Htqo 'j gtg. 'hgcwtgu"ecp"dg"cf f gf 'yq"c'm { gt "kp"y g" o cr 'kh'f guktgf ='y g{ 'y kn'dg"ucxgf 'kp'y g"m { gtøu"cwtkdwg"vcdrg0'Hgcwtg"m { gtu"ecp"cnq"dg"s wgtkgf " wukpi 'y g"oUgrgev'Nc { gt 'd { 'C wtkdwgö'Vqqn0'Hqt"o qtg"kphqto cvkqp"qp"y g"s wgt { 'yqn"ugg" j wr lrtq0ctei ku0eqo lgp lrtq/crr kqn/tghgtgpeglf cvc/o cpci go gpvlugngev/m { gt/d {/cwtkdwg0 vo 0 } }

Chygt 'nqi i kpi 'kpvq'cp'CteI KU'ceeqwpv'y kj 'r wdrkuj kpi 'r gto kuukqpu. 'vj g'o cr 'y cu'r wdrkuj gf 'cu'c" ugtxkeg'pco gf 'õEwtdo gvaO cr ö'vq'CteI KU'Qprkpg0'KVj cu'322222'o czko wo 'tgeqtf u0'Hgcwtg'' ceeguu'ku'gpcdrgf 'y kj 'c'TGUV'WTN='eEtgcvg. 'f grgvg. 's wgt{.'u{pe. "cpf 'wr f cvg''qr gtcvkqpu''ctg'' gpcdrgf 0

# Ctel KUQpnlpg

C'y gd'o cr 'pco gf 'õEwtdO GVaO cr ö'y cu'etgcvgf 'qp'CteI KU'Qprkpg."cpf 'y g'r wdrkuj gf 'hgcwtg" ugtxkeg'y cu'cff gf 'vq'kv0Vj g'o cr øu'ugtxkeg'wtriku'wugf 'vq'ceeguu'kv'y tqwi j 'cp'CteI KU'RqtvcriKgo " y kj kp''y g''cr r 0

# Crr'Fgxgnqrgt'I wlfg

# Kpvt qf wevlqp

Vj ku'ugevkqp'ku'c'f gxgrqr gtøu'i vkf g'hqt'y qug'y j q'uggrivq'wpf gtuvcpf ''qt''o qf kh{ ''y g''uvt wewt g''qh'' y g'EwtdO GV'kQU'cr r ''uqwteg''eqf g0'Vq''ceeqo r rkuj ''y ku'i qcn''rkuvu''qh'f gr gpf gpekgu. ''encuu'' f kci tco u. ''wugt ''gzr gtkgpeg''hrqy ''ej ctvu. ''cpf ''cp''cr r gpf kz ''qh''cm''cr r ''xkgy u''ctg' kpenwf gf 0

C'dcuke'npqy ngf i g'qh'Crrngøu'ZEqf g'kpvgi tcvgf 'f gxgnqro gpv'gpxktqpo gpv'\*KFG+'cpf 'Uy khv' rtqi tco o kpi 'ncpi vci g'ku'cuuvo gf0

# F gr gpf gpelgu'cpf '5tf 'Rctv{ 'Cenpqy ngf i go gpwu

# Crr'Dwkrf'Kphqto cvkqp

F gr m{o gpv'Vcti gv<sup>2</sup>kQU'3202 Dcug''UF M<sup>2</sup>Ncvguv'kQU'<sup>\*</sup>kQU'3308+ F gxkegu<sup>2</sup>Wpkxgtucn<sup>\*</sup>kRj qpg''cpf 'kRcf + Uy khv'Ncpi wci g''Xgtukqp<sup>2</sup>Uy khv'504

Crrng'Nkdtctkgu'cpf 'Htco gy qtmu

Pco g	Xgt ukqp	F qewo gpvc wkqp	Crritecwqp'lp'EwtdOGV'Crr
Eqtg Dnwgvqqyj	Uy khv'503	<u>Crrng'Fgxgmrgt</u> " <u>Fqewogpvcvkqp</u>	Vj g'Eqtg'Dnwgvqqvj 'htco gy qtm'r tqxkf gu'vj g'' encuugu'pggf gf 'hqt''{ qwt''cr r u'vq''eqo o wpkecvg'' Dnwgvqqyj ''nqy ''gpgti { ''f gxkegu. 'y j kej ''yj g'' EwtdO GV''EKU'wugu'vq'hcekrkscvg''eqo o wpkecvkqp'' dgwy ggp''yj g''o gcuwtkpi ''f gxkeg''cpf ''yj g'kQU'cr r 0
WKMkv	Uy khv'503	<u>Crrng"Fgxgnqrgt</u> " <u>Fqewogpvcwlqp</u>	Rctcr j tcugf "htqo "Crrngøu"F gxgnqrgt" F qewogpvcvkqp É'Y kpf qy "cpf "xkgy "ctej kgewetg"**xkgy " eqpvtqmgtu."ncdgnu."vcdng"xkgy u."gve0+ É'Gxgpv'j cpf nkpi "kphtcuvt wewetg"hqt"f gnkxgtkpi ' O wnksqwej "cpf "qvjgt"v{rgu"qh"kprwv'vq"{qwt" crr É'õO ckp"twp"nqqr"pggfgf "vq"ocpcig" kpvgtcevkqpu"coqpi "yjg"wugt."yjg"u{uvgo."cpf yjg"crr0o
Hqwpf cvkqp	Uy khv'503	<u>Crrıg'Fgxgmrgt</u>	õCeeguu"guugpvkcnlf cvc"v{rgu."eqmgevkqpu."cpf

<u>Fqewo gpwwqp</u>	qrgtcvkpi/u{uvgo 'ugtxkegu'vq'fghkpg'vjg'dcug'nc{gt'' qh'hwpevkqpcnkv{'hqt''{qwt''crr0o
---------------------	--

EqeqcRqfu'cpf '5tf 'Rctv{ 'Nkdtctkgu

# Walpi 'Eqeqcrqfu

õEqeqcRqf u'ku'c'f gr gpf gpe { 'o cpci gt'hqt'Uy khv'cpf 'Qdlgevkxg/E'Eqeqc'r tqlgevu0'KV'j cu'qxgt'62" y qwucpf 'hdtctkgu'cpf 'ku'wugf 'kp'qxgt'40, 'o knkqp''cr r u<u>\*EqeqcRqf u'F gx''Vgco .'*EqeqcRqf uQti* +6</u>ö" Rqf u'ctg''cf f gf '\q''y g'ZEqf g'r tqlgev'd { 'etgcvkpi ''c'gf kkpi ''y g'r tqlgevu'Rqf hkrg0'F gvckrgf '' kpuvtwevkqpu'hqt'kpuvcmkpi 'r qf u'ecp''dg'xkgy gf ''qp''y <u>g'Eqeqcr qf u'y gduksg0</u>Rqf u'ecp''qpn{ ''dg'' tghgtgpegf 'y j gp'y qtnkpi 'htqo ''y g'>Rtqlgev'P co g@zeqf gy qtmr ceg'hkrg0

 $\begin{array}{l} Eqeqcr qf u'y qtmu'd \{ "etgcvkpi" qt'wrfcvkpi" c'y qtmurceg" cpf "cffkpi" y g'Eqeqcr qfu'uvcvke" hkdtct \{ "rtqlgev'vq" y g'y qtmurceg" kh'pggf gf 0P gzv. "kv'cffu'hkdRqfu& "cpf" cp" Z eqfg" eqphki wtcvkqp" hkrg" vq" y g" rtqlgev0 Qpeg" y g"crrøu'vcti gv'eqphki wtcvkqpu" ctg" ej cpi gf" vq" dg" dcugf" qp" EqeqcRqfuøu. "c" dvkrf" rj cug" ku" cffgf" vq" eqr{ "tguqwtegu" htqo" {qwt" rqfu'vq" y g" crr" dwpfm<u>eteqcRqfu" Fgx" Vgco.</u>"$ <u>oCffkpi" Rqfu'vq" cp" Z eqfg" Rtqlgevo</u>

# Rqf u'Wugf 'kp'E wt dO GV

Pco g	Ncpi wci g	Xgtulq" p	<b>F qewo gp vc vkqp</b>	Crrdecwqp'lp'EwtdOGV'Crr
Ctel KU	Uy kliv	3220803	<u>Ctel KUTwpyko g</u> <u>UFM'hqt'kQU</u>	Rtqxkf gu'xkgy kpi "cpf "gf kkpi " ceeguu'vq''y g'EwtdO GV'CteI KU" j quvgf "hgcwtg'ugtxkeg0Rtqxkf gu" mji kp'CRKhqt'CteI KU'qpnkpg" ceeqwpw0
UXRtqi tguuJ WF	Qdlgevkxg/" E	40404	<u>I kJ wd'Rcig</u>	Fkurnc{u'rtqitguu."gttqt"cpf" uweeguu"o guucigu0
TzUy khiv	Uy khv	502	<u>TzUy ki</u> v <u>Eqeqcrqfu'Rcig</u>	Rtqxkfgu'hwpfcogpvcn'hwpevkqpcn' tgcevkxg'rtqitcookpi"encuugu." uwej"cu"qdugtxcdngu0
TzEqeqc	Uy khiv	502	<u>TzEqeqc</u> <u>Eqeqcrqfu'Rcig</u>	Gzvgpfu'Crrngøu''Eqeqc''cpf'' EqeqcVqwej''htcogyqtmu'vq''vcmg'' cfxcpvcig''qh'TzUykhv0
OOFtcy gtEqpv'' tqngt	Uy ktiv	20802	<u>I kyi</u> wd'Rcig	Gcukn{ "etgcvg"cpf "kpvgtcev'y kyj" ukfg"ogpwu0

Pqvg<"Cny qwi j "uqo g"hkdtctkgu"ctg"y tkvgp"kp"Qdlgevkxg/E."cm"ecp"dg"gcukn{ "wugf "kp"Uy khv0

Gwtgmc	Uy khv'5	50802	I ky wd "Rcig	Etgcvg'f {pcoke'hqtou'yjkej
				ctg'wugt''vq'r qrwncvg'eqpvgpv'kp'' ugwkpiu'r cig'cpf''uqog''ukfg''
				o gpwu

Vj ktf 'Rctv{ 'Ko ci gu'cpf 'Keqpu

Tco r 'ko ci gu'y gtg''eqr kgf 'htqo ''RgppF QVøu'EU/6623'hqto 0 Cm'qy gt'ko ci gu'pqv'hkuygf 'kp''y g'\cdng''dgnqy 'y gtg''etgcygf ''d{'\ qg''Vqki q0

Pco g	Uqwteg	Hkgpco g'kp'Crr
Dnwgvqqvj 'keqp	Ocfg'd{ <u>'Okpj'Jqcpi'</u> htqo <u>'yyy0ncvkeqp0eqo</u>	Dnwgvqqyj (r pi
<u>Ngi gpf 'keqp</u>	Ocfg'd{ <u>''Rcxgn'Mq  mx'</u> htqo <u>''y y y 0mcvkeqp0eqo</u>	ngi gpf 0 pi
Ogpw'keqp	Ocfg'd{ <u>''Uo cuj keqpu'</u> htqo <u>'y y y 0mcvkeqp@qo</u>	o gpw0r pi
<u>Gf kv'keqp</u>	O cf g'd { <u>"Uo cuj keqpu</u> ltiqo <u>"y y y 0mc keqp@qo</u>	gf kŵ pi
Hkngt "keqp	O cf g'd { <u>"Uo cuj keqpu</u> " lit qo <u>'y y y (hrcvkeqp@qo</u>	hknvgt0rpi
<u>Ocr "keqp</u>	Ocfg'd{ <u>''keqppkeg'</u> htqo <u>''y y y (hrcvkeqp(keqo</u>	o cr 0 pi
<u>Rj qvq"cndwo "keqp</u>	Ocfg'd{ <u>''Uo ctwkpg'</u> htqo <u>'y y y (hrcwleqp(leqo</u>	rjqvqCndwo0rpi
<u>Tg/egpvgt</u> " etquujckt"keqp	Ocfg''d{ <u>''Htggrkm</u> htqo <u>''yyy0ncvkeqp0eqo</u>	etquuj ckt0r pi
<u>S wguwkqp'keqp</u>	O cf g"d { <u>"Nkpj "Rj co '</u> htqo <u>"y y y 0mc keqp0eqo</u>	s wguvkqp0r pi

# Crr'Ctej kgewtg

# Vj gqtgvkecn'Kpvtqf wevkqp

õUqhiy ctg"ctej kgewitg"gpeqo r cuugu'y g"ugv'qh'uki pkhecpv'f gekukqpu"cdqwi'y g"qti cpk cvkqp"qh'c" uqhiy ctg"u{ uvgo "kpenvf kpi "y g"uggevkqp"qh'y g"ut vewitcn'gno gpvu"cpf "y gkt"kpvgthcegu"d{ "y j kej " y g"u{ uvgo "ku"eqo r qugf ="dgj cxkqt"cu'ur gekhkgf "kp"eqncdqtcvkqp"co qpi "y qug"gno gpvu=" eqo r qukkqp"qh'y gug"ut vewitcn'cpf "dgj cxkqtcn'gno gpvu"kpvq"ncti gt"uvdu{ uvgo u="cpf "cp" ctej kgewitcn'uv{ ng'y cv'i vkf gu'y ku"qti cpk cvkqp0'Uqhiy ctg"ctej kgewitg"cniq"kpvqnxgu"hivpevkqpcnkv{." wucdkrkv{."tgukrkgpeg."r gthqto cpeg."tgwug."eqo r tgj gpukdkrkv{."geqpqo ke"cpf "vgej pqni {" eqpuitckpvu."itcf gqhhu"cpf "cgui gyke"eqpegtpu"\*Uj cy "cpf "I ctmp"3; ; 8+06

KV ku'pgeguuct { "\q"qti cpk g"eqf g"uvej "\y cv'\y gtg"ku'c"engct"uvt vewstg"hqt"etgcvkpi "qdlgevu'cpf" tgrcvkqpu'dgw ggp"\y go 0Qvj gty kug."y j cv'qhygp"tguvnu'ku'ur ci j gvk'eqf g0D{ "vukpi "c'uvcpf ctf "cr r " ctej kgewitg. "k/dgeqo gu"gcukgt" vq"hkpf "ur gekhke" ugevikqpu" qh"eqfg. "vguv. "cpf" kpkikcvg" ej cpi gu" vj cv"fq" pqv"tgs witg" o qfkhkecvikqp" kp" qvj gt"fqewo gpvu0

# $O\,XXO$ "/'O $qf\,gn$ 'Xkgy .''Xkgy 'O $qf\,gn$

O XXO 'ku'c'r qr wrct'cr r 'ctej kgewtg'y j kej 'ugr ctcvgu'eqo r qpgpvu'vj cv'o cng'wr 'c'uvqt { dqctf 'kpvq'' y tgg'ugr ctcvg'ecvgi qtkgu'qh'hkrgu<

- 30' O qf gni'/ "eqpvckpu"f cvc"cpf lqt "ceeguugu"htqo "f cvcdcugu"qt "qpnlpg"ugtxlegu0'Hqt "gzco r ng." Cwj qtkl cvkqpCeeguuRtqxkf gt0uy khvlu"c"o qf gn'y cv'ceeguugu'QCwj "cwj qtkl cvkqp"ugtxlegu." y j lej "gpcdngu"nqi i kpi "kp"wukpi "CteI KU"ceeqwpw0'Vj gtg"ku"v{r kecm{ "qpg"o qf gn'r gt "xkgy " o qf gn"cpf "kv'ku"kpuvcpvkcvgf "cu"c"ukpi ngvqp"y kj kp"vj g"xkgy "o qf gn0'Ugg"õVcdng"qh'O qf gn." Xkgy ."cpf "Xkgy 'O qf gnu"kp"EwtdO GVö"qp"r ci g"470P gxgt"ko r qtv'WKMkv'kpvq'vj g"o qf gn'hkrg=" kv'uj qwf "qpn{ 'dg'wugf 'hqt 'xkgy u'cpf 'xkgy 'o qf gn0
- 40' Xlgy u"/"c"WKXlgy Eqpvtqngt"encul."y j kej "eqpvckpu"WKXlgy u"\*dwwqpu."vgz v"hgrf u. "rcdgnl." WKVcdngXlgy u." gve00'Cml eqf g" y kj kp" y g" Xkgy "uj qwrf "dg" f kt gevn{"f gcnkpi " y kj " wugt" kpvgtcevkqp."uwej "cu" vcr u" qp" y g" uet ggp0'Cp{" qy gt" eqf g."uwej "cu" f cvc" o cpkr wrcvkqp" qt" o qf kh{kpi "y g"xkuwcn'cr r gctcpeg" qh'y g"xlgy ."uj qwrf "dg" o qxgf "vq"c"f khpgtpv'hkrg0
- 50' Xkgy "O qf gnu"/"c"uxtwev"y kj "r tqr gt kgu"cpf "hvpe kqpu" y cv'j cpf rgu"r tgugp vckqp" rqi ke0' Rtqr gt kgu"uwej "cu'eqrqt"cpf 'uk g'rkxg"kp 'y g'xkgy "o qf gn0Nkng" y g'o qf gn 'y gtg'ku'c"qpg/vq/" qpg"tgrc kqpuj kr "dgw ggp"c"xkgy "o qf gri"cpf "c"xkgy 0'Vj g"xkgy "o qf gri"ku"kpuvcp kcvgf "cu"c" ukpi rgvqp 'y kj kp'ku'eqttgur qpf kpi 'xkgy 0'F qpøv"ko r qt v'WKMkv."cpf 'f qpøv"f ktgevn{ 'tghgtgpeg" y g" xkgy 'eqpvtqrmgt0



Hi wt g'9<"OXXO 'Eqo r qpgpv'Køygtcevkqpu<u>'<sup>™</sup>Qtmx+0</u>

O XXO 'j cu'y g'hqmqy kpi 'i wkf grkpgu'<

- $\dot{E}'$  O qf gnu'f q''pqv''cmi'vq''cp{dqf {0
- É' Xkgy ''o qf gnu''qpn{ ''cmi'vq''o qf gnu0
- É' Xkgy "eqpvtqmgtu"ecppqv'vcmi'vq"o qf gnu'f ktgevn{='y g{ "qpn{ 'kpvgtcev'y ky 'xkgy "o qf gnu'cpf " xkgy u0
- É' Xkgy u'qpn{ '\cmi\q'y g'xkgy 'eqp\tqmgtu 'pq\th{kpi 'y go 'qh'kpygtce\tqp'gxgpu0

# HwpevkqpcnTgcevkxg'Rtqi tco o kpi

Tgcevkxg'r tqi tco o kpi 'ku'dcugf ''qp''y g'kf gc''qh''cu{ pej tqpqwu''f cw ''uvtgco uOKv'ku''r qy gthwddgecwug'' cp{''f cw ''v{r g''ecp''dg''wtpgf ''kpvq''c''uvtgco ''qh''qpi qkpi ''gxgpvu''qtf gtgf ''kp''vko g''/'xcnwgu''qh'r tqr gtvgu'' y cv'ej cpi g''qxgt ''vko g. ''ugs wgpegu''qh''kpr wu. ''gve0'Y g''ecp''uwduetkdg''vq''y gug''uvtgco u. ''cpf '' cu{ pej tqpqwun{ ''tgcev'vq''y go ''y j gp''qpg''qh''y tgg''y kpi u'j cr r gpu<''c''pgy ''xcnwg''ku''go kwgf. ''cp''gttqt''
qeewtu."qt"y g'uvtgco "ku"eqo r mygf <u>"\*Uvcnt +0</u>

Hqt"gzcorng."kp"yjg"EwtdOGV"crr."yg"hgvej "kocig"cvcejogpvu"yjcv"ctg"cuuqekcvgf"ykj"c"ikxgp" hgcwtg"nqecvgf"kp"cp"qphkpg"jquvgf"hgcwtg"vcdngOCu"yjg"cvcejogpvu"ctg"hgvejgf."yjg{"ctg"cffgf" vq"c"utgco."yjkej "yg"fkurnc{"qp"yjg"uetggpOTgcevkxg"rtqitcookpi"ku"vughvnljgtg"dgecvug"kv" gpcdngu"vu"vq"fgcn"kpfkxkfvcm{"ykj"gcej "gokvgf"cvcejogpv."cu"qrrqugf"vq"yckkpi "wpvkn"cm"qh" yg"cvcejogpvu"ctg"uveeguuhvm{"tgvtkgxgf0Fgrgpfkpi "qp"yjg"pvodgt"qh"cvcejogpvu."yjku" rtqeguu"eqwf"vcmg"oqtg"yjcp"c"hgy "ugeqpfu."cpf"vugtu"fq"pqv"hkng"vq"dg"uvveniycvejkpi "c"nqcfkpi" u{odqn0

Hwpevkqpcn'tgcevkxg''r tqi tco o kpi ''dtkpi u'kp''vqqndqzgu''y cv'cmqy ''wu''q''o cpkr wrzyg''y gug''uvtgco u'' d{''o gti kpi .''o cr r kpi .''qt ''hkngtkpi 0Kp''y ku''cr r .'TzUy khv''cpf 'TzEqeqc''r tqxkf g'y ku''cf f kkqpcn'' ecr cdkrkv{0õTzUy khv'ku''c''htco gy qtml'hqt''kpvgtcevkpi 'y ky ''y g''Uy khv''r tqi tco o kpi ''rcpi wci g.''y j krg'' TzEqeqc''ku''c''htco gy qtml'y cv'j gr u''o cng''Eqeqc''CRKu''wugf ''kp''kQU''cpf ''QU'Z ''gculgt''q''wug''y ky tgcevkxg''yej pks wgu<u>''\*Uj cr ktq+f</u>ö''O ctdng''f kci tco u''ctg''wugf ''q''kmwuvtcvg''y g''hwpevkqpu''cv''{ qwt'' f kur qucn'd{ ''f kur rc{kpi ''y g''kpr w''cpf ''qwr w''uvtgco u''r ctcmgn'y ''gcej ''q y gt<u>''\*õQdugtxcdngö-f</u>0

Tgcevkxg'r tqi tco o kpi 'j cu'o cp{ 'dgpghku

- É' õT gcevkxg" uvtgco u" cmqy " {qw' vq" y tkg" o qf wrct" eqf g" d { "uvcpf ctf k kpi " y g" o gy qf " qh" eqo o wpkecvkqp"dgw ggp"eqo r qpgpvu0Vj g"tgcevkxg"f cvc"hqy "cmqy u"hqt"c"nqug"eqwr hpi " dgw ggp" y gug"eqo r qpgpvu. "vq<u>i"Ngy +(6</u>
- É' õTgcevkxg'r tqi tco o kpi 'tckugu'y g''ngxgn'qh'cduvtcevkqp"qh''{ qwt''eqf g''uq"{ qw''ecp 'hqewu''qp''y g'' kpvgtf gr gpf gpeg"qh''gxgpvu''y cv'f ghkpg"y g''dwukpguu''nqi ke."tcy gt"y cp''j cxkpi ''vq''eqpuvcpvn{ '' hkf f ng'y kj ''c''ncti g''co qwpv''qh''ko r ngo gpvcvkqp''f gvcknt0'Eqf g''kp''TR''y km'hkngn{ ''dg''o qtg''eqpekug'' <u>\*Uvcnv</u> +60
- É' õT gcevkxg"r tqi tco o kpi "gpcdngu'wu'vq"et gcvg"c"j ki j n{/kpvgtcevkxg"gzr gt kgpeg''y cv't gur qpf u'kp" tgcn'vlo $g^{"*Uvcn}$ +6

# Dkpf kpi ''y g''Xkgy ''cpf ''y g''Xkgy ''O qf gn

Dgecwugu'y g'xkgy "qy pu'y g'xkgy "o qf gn'kvku'xgt { "gcu{ 'hqt'y g'xkgy "\q"ej cpi g'r tqr gtvkgu'kp"cpf " ecm'o gy qf u'htqo 'y g'xkgy 'o qf gn0'Vj g'uco g'ecp"dg'uckf 'hqt'y g'xkgy 'o qf gnøu'tgrcvkqpuj kr 'y ky " y g'o qf gn0

Vj g"gzco r ng"dgnqy "uj qy u"yj g"dgi kppkpi "qh"c"uko r ng"nqi kp"r ci g0

Uco r ngNqi kpXkgy Eqputqmgt(uy khv

korqtv'Hqwpfcvkqp
korqtv'WKMkv
encuu'UcorngXkgyEqpvtqngt <wkxkgyeqpvtqngt''}< td=""></wkxkgyeqpvtqngt''}<>
rtkxcvg"ngv'xkgy Oqfgn"? "UcorngNqikpXkgy Oqfgn*+
BKDQwurgv'nqi kpDwuqp <wkdwuqp< td=""></wkdwuqp<>
BKDQwyrgv'wygtpcogHkgrf <'WKVgzyhkgrf
BKDQ wyrgv'r cuuy qtf Hkgrf < WKVgz v Hkgrf

```
qxgttkfg'hwpe''xkgyFkfNqcf*+''}''i
BKDCevkqp'hwpe''nqikpVcrrgf*a''ugpfgt<'WKDwwqp+''}
xkgyOqfgnnqikp*wugtpcogHkgnf0gzv.''rcuuyqtfHkgnf0gzv+
i
```

Uco r ngNqi kpXkgy O qf gnuny khv

```
ko r qtv'Hqwpf cvkqp
encuu'Uco r ngNqi kpXkgy O qf gn'}
r tkxcvg''ngv'cwyi qtk gt'? 'Nqi kpO qf gn*+
kpkv*+''} ''
hvpe''nqi kp*a''wugtpco g<'Uvtkpi .''a''r cuuy qtf <'Uvtkpi ''}''
cwyi qtk gt0nqi kp*wugtpco g.''r cuuy qtf +
i
```

Y j gp''y g''wugt''vcr u''y g''mi kp''j qy gxgt. ''kv'ku''o wej ''o qtg''eqo r necvgf ''vq''pqvkh{ ''y g''xlgy ''qh''ej cpi gu'' kp''y g''xlgy ''o qf gn'dgecwug''O XXO ''hqtdlf u''etgcvkpi ''cp{ ''tghgtgpegu''vq''y g''xlgy ''o qf gn'' Uy khv'uvcpf ctf ''hdtctlgu''r tqxlf g''c''hgy ''qr vlqpu''hqt''etgcvkpi ''cu{ pej tqpqwu''uwduetkr vlqpu." kpenwf kpi ''Mg{ ''Xcnwg''Qdugtxlpi ''\*MXQ+.''wulpi ''õf kf Ugvö''cpf ''ecmdcemu0J qy gxgt.''y gug''uvcvgi kgu'' ctg''xgtdqug''cpf ''ecp''dgeqo g''j ctf ''q''o ckpvckp''cu''y g''pwo dgt''qh''qdugtxgtu''kpetgcugu0'Vj wu.'' TzQdugtxcdngu''ctg''wugf ''kp''y g''cr r ''q''dkpf ''y g''xlgy ''cpf ''y g''xlgy ''o qf gn0

Hqt"gzcorg."y g"y cpv"vq"f kurge{"cp"gttqt"o guuci g"y j gp"vj g"wugtpcog"cpf"r cuuy qtf"ctg" kpeqttgev0Vj g"nqi kp"oqf gn"y j kej "r gthqtou"cm"cwj qtk{cvkqp"hxpevkqpu."j cu"c"r wdnke"qdugtxcdng" pcogf"cwj Uccwu."y j kej "go ku"c"uvtgco"qh"nqi kp"xcnkfcvkqp"uvcwugu0

Uco r ngNqi kpO qf gnuy khv

```
ko r qtv'Hqwpf cvkqp
ko r qtv'TzUy kiv
ko r qtv'CteI KU
encuu'Uco r ngNqi kpO qf gn'}
IlHqt'dtgxkv{.''yj ku''gzco r ng''f qgu''pqv'kpenvf g''cm''r tqr gtvkgu
Il''cpf ''o gyj qf u''yj cv'ctg''pggf gf ''vq''ko r ngo gpv''nqi kp''xcnkf cvkqp
Il''vukpi ''CI URqtvcn)
000
xct ''cwyj Uvcwu<''Qdugtxcdng>CI UNqcf Uvcwu@
....
```

i

Wukpi ''y g''eqf g''dgnqy .''y j kej 'ku''cf f gf ''q''Uco r ngNqi kpXkgy O qf gnfuy khv.''y g''xkgy ''o qf gn'' uvduetkdgu''q''cwij Ucwu.''cpf ''y j gp''c''pgy ''kgo ''ku''go kwgf ''htqo ''y g''utgco .''f gvgto kpgu''y g''eqttgev'' o guuci g''q''f kur nc{0'Vj g''o guuci g''ku''uvqtgf ''kp''y g''xcnkf cvkqpO guuci g''xctkcdng.''y j kej ''ku''c'TzUy khv'' Xctkcdng>uvtkpi @

Hkpcm{.''y g''xkgy ''dkpf u''xcnkf cvkqpO guuci g''vq''y g''Uco r ngXkgy Eqpvtqngtøu''xcnkf cvkqpNcdgn0Cu'c'' tguwnx.''y j gpgxgt''y g''r qtvcnøu''nqcf ''uvcwu''ej cpi gu''kp''Uco r ngNqi kpO qf gn''y g''xkgy ''eqpvtqngt'' cwqo cvkecm{ ''tgur qpf u''dcugf ''qp''y g''v{r g''qh''uvcwu0

```
B KDQwrgv'xcrkf cvkqpNcdgn<br/>KWKNcdgn<br/>xkgy F kf Nqcf *+''}<br/>xkgy O qf grfxcrkf cvkqpO guuci g0cuQdugtxcdrg0lkpf *vq<ugrffxcrkf cvkqpNcdgn+(f kur qugf *d{<'' f kur qugDci +<br/>i
```

Y j { 'pqv'O XEA



Hki wt g'! <'O qf gn'Xkgy 'Eqpvtqmgt 'F kci tco <u>'\*Qtmx+0</u>

Vj qug'y kj 'r tgxkqwu'kQU'cr r 'f gxgrqr o gpv'gzr gtkgpeg'j cxg'r tqdcdn{ 'uggp'O XE.'pqv'qpn{ " dgecwug'kv'ku'r tqo qvgf ''d{ 'Cr r rg. 'dw'cnq''dgecwug'kv'ku'qpg''qh''y g''o quv'eqo o qpn{ ''wugf 'f guki p'' r cwgtpu<u>''<sup>\strack</sup>O qf gr/Xkgy /Eqpvtqrgtö+0</u>

J qy gxgt. 'kQU'wugu'c''eqo dkpgf/tqngu'xctkcvkqp''qh''Xkgy "cpf ''Eqpvtqnngt. 'kp''y j kej ''y gug''y q''nc{gtu'' ctg''ki j vn{"eqwr ngf ''qi gy gt 'kpvq'c''õXkgy ''Eqpvtqnngt06''Dgecwug''y g''xkgy ''eqpvtqnngt''ku''tgur qpukdng'' hqt 'tgur qpf kpi ''q''wugt 'kpvgtcevkqp''cpf ''o cpkr wncvkpi ''y g''xkgy .''kv'ku''gcu{ ''q''dnncv'y g''xkgy '' eqpvtqnngt'y kj ''WK'ni ke0Cpf ''cu''y g''pwo dgt''qh''xkgy u''kpetgcugu. ''uq''f qgu'y g''c qwpv'qh''dwukpguu'' ni ke''kp''y g''xkgy ''eqpvtqnngt0Gxgpwcm{.''y g''xkgy ''eqpvtqnngt''dgeqo gu'j ctf ''q''tgcf ''cpf ''o rquukdng'' uq''tgwug'<u>\*'Uej o kf v'cpf ''O qttkuqp+0</u>

Vj wu'O XXO 'y cu'ej qugp'\q'j gnr 'cmgxkcvg'\j gug'kuuwgu0

# Vcdrg"qh"O qf gnı. "Xkgy u. "cpf "Xkgy 'O qf gnı"kp"EwtdO GV

P qvg<"Cmhkrgu"ctg"Uy khi/hkrgu0Vj g'Uy khi/hkrgpco g"gzvgpukqp"y cu'tgo qxgf "hqt"tgcf cdktkv{0

Hwpevkqp	Xlgy	Xkgy 'O qf gn	O qf gn
<u>Nqiikpi"Kovq</u> " <u>Crr</u>	Nqi kpXkgy Eqpvtqngt	Nqi kpXkgy O qf gn	Cwj qtk¦ cvqpCeeguu" Rtqxkf gt
<u>Dnvgvqqvj</u> Eqppgevkqp	UecppgtXkgy Eqpxtqmgt	UecppgtXkgy O qf gn	Dnwgvqqyj Ugtkon
	Ulf gO gpwXkgy Eqpvtqngt		
	Ngi gpf VcdrgXkgy Eqpstqrngt	Ngi gpf Xkgy O qf gn	
Hkngtkpi 'O cr" Fkrnc{	TcorV{rgUgngevkqpVcdngXkgyEqpvtqm' gt	TcorEctqwugnXkgyOqfgn	
	HkngtO gpwVcdrgxkgy Eqpvtqrrgt		
	OwnwkrngUgngevkqpVcdngXkgyEqpvtqnngt		
	CffHgcwtgVcdDctEqpvtqngt		
Ceeguukpi 'cpf " Gf kkpi CteI KU'J quvgf " O cr	O cr Xkgy Eqpvtqngt	O cr Xkgy O qf gn	
	TcorV{rgXkgyEqpvtqmgt		
	Gf kqtXkgy Eqpvtqngt	Hqto EgmV{rgu" GfkqtHqto	Hqto Kgo
	S worksovkxgC wtkdwsguEqpvt qmgt		
	Tco r O gcuwtgo gpvXkgy Eqpvtqmgt	O gcuwt go gpvXkgy O qf gn	
	O gcuwtgo gpvDwwqp	O gcuwtgo gpvF cvcKgo	O gcuwtgo gpvF cvcU' qwteg
	Ngi gpf VcdrgXkgy Eqpxtqrrgt	Ngi gpf Xkgy O qf gn	
	CwtkdwwgOgcuwtgogpvRqrqxgtXE	CwtldwgO gcuwtgo gpvRqr " qxgtXlgy O qf gn	

	Cwcej o gpwXkgy Eqpvtqngt	Cwcej o gpwtXkgy O qf gn	Cwcej o gpwFcwCe" eguuRtqxkfgt
Crr''Ugwkpi u	Ugwlpi uO cuvgtXkgy Eqpvtqmgt		
	Ugwkpi uF gycknXkgy Eqpytqngt	UgwlepiuHqtoHcevqt{	

# Wugt 'Gzrgt lgpeg'Hnqyejct v





# O clqt 'Crr'Hwpevkqpu

### Nqi i kpi 'Kp'cpf 'Cwj qtk cvkqp

Vj g'hkuv'uetggp''y cv'crrgctu''wrqp''crr''ncwpej 'ku''y g''nqi kp''r ci g0Dgecwug''CteI KU'xkgy kpi ''cpf'' gf kkpi ''r gto kuukqpu''ctg''tgs wktgf ''nqt''y g''crrøu''eqtg''hgcwutgu'' ''kpygtcevkpi 'y ky ''ewtd/tcor''hgcwutgu'' qp''c''o cr''/''y g''enkgpv''cpf ''f gxgnqrgt''f gygto kpgf ''y cv''nqi kp''uqngn{ ''xkc''CteI KU''qpnkpg''ceeqwpu'' y qwf "dg"o quv'crrtqrtkcvg"hqt"y g"crrnkecvkqp0Kk'uj qwf "dg"pqvgf "y cv'cwj gpvkecvkqp"tgs wktgu"cp" kpvgtpgv'eqppgevkqp0'Etgf gpvkcni"tgs wktgf "ctg"c"wugtpco g"cpf "rcuuy qtf."y j kej "ctg"gpvgtgf "wukpi " cp"kp/crr"ng{dqctf0'Ewttgpvn{."etgf gpvkcni"ecppqv'dg"ucxgf "dgw ggp"crr"ncwpej gu0

Cxckrcdrg''ni kp''hwpevkqpcrkv{ 'ku''uj qy p''kp''yj g''wug''ecug'f kci tco ''dgnqy 0'Cm''qh''yj g''EwtdO GV''crr'' cevkqpu''ctg''ceeguukdrg''kp''yj g''uco g''xkgy 0'Vj g''CteI KU''Qprkpg''uki p/kp''y gdr ci g''y km''qr gp''kp''yj g'' f gxkegøu''UchctK'crr0



Figure 10: Login use case diagram for the device's app.

Tgi ctf kpi ''y g''eqf g''hqt''nqi i kpi 'kp.''y g''CteI KU'kQU''UF M'r tqxkf gu''ugxgtch'encuugu''hqt'' korngo gpvkpi ''cwj gpvkecvkqp0

# CI URqtvcn

Vj g'hwpf co gpvcn'encuu'hqt"cwj gpvlecvlqp'ku'yj g'CI URqtvcn/bCI URqtvcn/ku'cp"qdlgev'yj cv' tgr tgugpu''c"xlgy 'hqt"c"wugt "\*cpqp{o qwu''qt"pqv+'lpvq"c"r qtvcn/y y y (<u>CteI KUleqo</u> "ku'cp"gzco r ng"qh" c"r qtvcn/mCI URqtvcn/ku'yj g"o clp"encuu'cpf 'yj g"gpvt{"r qlpv'lpvq"yj g"CRKvq"y qtniy kj 'r qtvcn/cpf " qti cpl{ cvlqp'uvduetkr vlqpu/K/lo r ngo gpvu''cm'yj g"qr gtcvlqpu'vq"lpvgthceg'y kj 'yj g'dcengpf 'CteI KU'' Rqtvcn/TGUV'CRKo"

õRqtvcni'emqy 'wugtu'epf ''qti epk evkqpu'vq'r wurkuj ''epf ''uj etg''eqpvgpv'qxgt''yj g'y gd0'Rqtvcni'kpenwf g'' õWugtu'\*CI URqtvcnWugt+:'I tqwru'\*CI URqtvcni tqwr+''epf 'Eqpvgpv'\*CI URqtvcniKgo +06

Wugtu

- É' Uki pu'kp'\q''y g'r qt vcn'cpf "etgc vg"cpf ''uj ctg''eqp vgp v''y j kej 'ku''qti cpk gf 'kp vq''K go u0
- É' Ecp''dg''r ctv''qh''cp''qti cpk cvkqp. ''dw''y ku''ku''qr vkqpcn0
- É' Ecp"etgcvg"cpf "lqkp"i tqwr u0
- É' Ecp''uj ctg''kgo u''y ky ''i tqwr u0
- É' õC 'wugt "qh'y g'Rqt vcn<sup>1</sup>\*cpf "qh'y g'TGUV'CRK4'uggu'y g'xlgy "qhh'y g'Rqt vcn'y cv'cr r ngu'vq'y gkt" qti cpl cvlqp'uwduetkr vlqp0'Vj ku'xlgy 'lpenvf gu'wugtu.'i tqwr u'cpf 'lkgo u'y cv'dgmpi 'vq'y g'' qti cpl cvlqp"cpf 'j cxg"dggp'uj ctgf 'y kj 'y go 0'Vj ku'xlgy 'o c{ "cmq'lpenvf g'wugtu.'i tqwr u'cpf " kgo u'y cv'ctg''gz vgtpcn'vq'y g''qti cpl cvlqp"cpf 'j cxg''dggp'uj ctgf 'y kj 'y g''wugt0ö

#### Qti cpk cvkqpu

- É Wugf 'hqt'o cpci kpi 'y j q'ecp'etgcvg'j quvgf 'ugtxkegu'd{ 'wr nqcf kpi 'qhhrkpg'f cvc0
- É' Vj gtg'ecp''dg''o wnkr ng''qti cpk cvkqpu'kp''c''r qt vcn0
- É' Kpenwf gu'wugtu'y ky 'tqngu'qh'cf o kpkuxtcvqt.'r wdrkuj gt.''qt'kphqto cvkqp'y qtngt0

#### I tqwru

- É' Wugf 'hqt'o cpci kpi 'y j q'ecp'xkgy "cpf "gf kv'f cvc''y cv'ku''cnt gcf { 'j quvgf "qpnkpg0
- $\acute{E}'$  Eqpvckpu'wugtu0'Wugtu'kp''y g'i tqwr ''ecp''xkgy ''kgo u''uj ctgf ''y kj ''y g'i tqwr 0

#### Kgo u

- É' Kpenxf gu'y gd'o cr u.'o cr 'ugtxkegu.'cr r necvkqpu.'cpf 'f cvc'hkrgu
- É' Ecp"dg"r tkxcvg. "r vdrke. "qt "uj ctgf "y kj "ur gekhe"i tqwr u0

### CI UCwj gpwcvkqpO cpci gt

õVj ku'encuu''cmqy u''{qw''vq''o cpci g''cwj gpvkecvkqplugewtkv{ 'tgncvgf ''gxgpvu0

]Vj g"cwj gpvlecvlqp"o cpci gt\_"tclugu"cp"CI UCwj gpvlecvlqpEj cmgpi g"y j gpgxgt"cp"cwj gpvlecvlqp" qt"ugewtk{ "kurwg"ku"gpeqwpvgtgf "cp{y j gtg"kp"yj g"CRK00K/cmq"o ckpvckpu"c"ecej g"%p"o go qt {+"qh" etgf gpvlcmi"yj cv"j cxg"dggp"r tgxkqwun{"wugf "vq"ucvluh{"cwj gpvlecvlqp"ej cmgpi gu0Vj ku"cmqy u" etgf gpvlcmi"vq"dg"tgwugf ."y j gtg"cr r tqr tkcvg."cpf "r tgxgpv"wppgeguuct { "qt"f wr nlecvg"ej cmgpi gu" htqo "dgkpi "kurwgf "y j krg"ceeguulpi "ugewtg"tguqwtegu"htqo "y g"uco g"ugewtk{"tgcm 0/Cf f kkqpcm{." y g"ecej g"ecp"gculn{"dg"r gtukuvgf "kp"yj g"ng{ej ckp"uq"yj cv"kh"yj g"cr r "ku"tguvctvgf ."yj g"ecej g"ku" cwqo cvlecm{"r tg/r qr wrcvgf "y kj "ucxgf "etgf gpvlcm"cpf "y g"wugt"f qgu"pqv"j cxg"vq"uli p"kp"ci ckp06

Kp'EwtdO GV. "ewuvqo "WKtgur qpugu"vq"cwj gpvkecvkqp"ej cmgpi gu"ctg"gpcdngf "d{"ugwkpi "yj g" cwj gpvkecvkqp"o cpci gtøu"f gngi cvg"ku"ugv"vq"Nqi kpXkgy Eqpvtqmgt0

Vj g"crrnlecvlqp"y cu"cnq"tgi knygtgf "y kj "CteI KU."y j kej "etgcvgf" c"enlypv" KF "hqt" QCwj "402" cwj gpvlecvlqp0 Dgecwug" y ku"enlypv" KF "y cu"rtqxkf gf "vq" y g"cwj gpvlecvlqp" o cpci gt." y g"f ghcwn" ej cmppi g"v{rg"vq" dg" etgcvgf "ku" QCwj 0

Kp''y g''crr.''cp''CI URqtvcn'ku'kpuvcpvkcvgf 'wukpi ''y g''WTN<u>''y y y Octei kuOcqo O</u>'Vq''cwgo rv''nqi i kpi 'kp.'' y g''r qtvcnøu''etgf gpvkcnu''r tqr gtv{ 'ku'ugv'wukpi ''y g''ygzv'gpvgtgf 'kp''y g''ygzvhlenf u''qp''y g''wgt'kpygthcegO

# Dnvgvqqvj 'Eqppgevkqp

Kp''y g'EKU.''y g'KRcf''ku''y g'Dnwgvqqy 'Nqy 'Gpgti { "\*DNG+"egpvtcn'cpf''y g'J O/33'Dnwgvqqy O qf wrg''ku''y g''qpn{ 'r gtkr j gtcn0Chygt''o cmkpi ''y g''eqppgevkqp.''y g''kRcf''ku''y g''ugtxgt''cpf''y g'J O/ 33'ku'y g'enkgpv0Vj g'crr 'ku'y tkwgp'uwej 'y cv'kv'ecp'qpn{ 'eqppgev'vq'qpg'f gxkeg'cv'c'vko g0

# Guvcdrkuj kpi ''y g'Eqppgevkqp

Vj kı"cr r 'wıgu'c''o qf kh&f 'xgtukqp''qh'j qkdgti øı"Dnvgvqqy Ugtken'j gr gt 'encuu'vq''o cpci g'vj g'' Dnvgvqqy 'eqppgevkqp<u>'''j qkdgti +0</u>'Vj g''uqhy ctg''kpuvcpvkvgu''c'i mdcn'Dnvgvqqy Ugtken'qdlgev'ecmgf '' ugtken 'y j kej ''o cpci gu''y g''Dnvgvqqy ''eqppgevkqp''hqt''cm'qh''y g''cr r 0'C''r tqvqeqnlf grgi cvg''r cvgtp'' cmyy u''qvj gt ''hkrgu''vq''tgur qpf ''vq''ugtkenøu''gxgpvu0'hti'c''hkrg''kp''y g''cr r ''tgs vktgu'Dnvgvqqy '' eqo o vpkecvkqp''hvpevkqpcrkv{. ''kv'uko r n{ ''cf qr vu''y g''Dnvgvqqy i'' r tqvqeqnlcpf ''ugvu'ugtkenøu''f grgi cvg'' gs vcn'vq''ugrh0

Vj g'htuv'xkgy "eqpvtqngt''y cv'ecmi'hqt'Dnwgvqqy 'ku'y g''Uecppgt''Xkgy 'Eqpvtqngt0'Vj g'wugt'ku'' r tgugpvgf 'y kj 'c''cdng''qh'cxckrcdrg'f gxkegu''q'eqppgev'vq0'Vj g''Uecppgt''Xkgy 'O qf gn'ku'c'f gngi cvg'' qh'ugtkon'cpf 'y j gp'ugtkonF kf F kueqxgtRgtkr j gtcn\*+'ku'ecngf. 'kv'cf f u'y g''f gvgevgf 'r gtkr j gtcn'q'c'' Xctkcdng''cttc{''qh'EDRgtkr j gtcn0'Vj g''xkgy ''eqpvtqngtøu''WKVcdngxkgy 'ku'r qr wrcvgf ''d{''y g''pco gu'' qh'r gtkr j gtcn1'kp''y g''xkgy ''o qf gnøu''cttc{.''cpf ''gcej ''ko g''y g''uvduetkr vkqp''f gvgevu''cp''wr f cvgf ''cttc{.'' y g''xkgy ''eqpvtqngt'y kn'tghtguj 'ku''WKVcdngXkgy 0'Y j gp''y g''wugt''cr u'c''tqy ''kp''y g''cdngxkgy .''y g'' kRcf 'y kn'eqppgev''q''y g''cuuqekcvgf 'r gtkr j gtcn''cpf ''g y ''y g''pgzv'xkgy ''wr qp''uweeguuhwn'' eqppgevkqp0

Kp''ý g''crr.''ý g''Uccppgt''Xkgy ''Eqpvtqmgt''ku'tg/wugf''kp''ý g''ugwkpi u''ugevkqp''cpf''ý g''u{uvgo ''uvcwu'' ukf g'r cpgn/Ki'ý g''kRcf''ku''cntgcf { "eqppgevgf''vq''c''f gxkeg.''ku''pco g'y kn'dg''f kur m{gf''kp''ý g''ktuv'' ugevkqp''qh''ý g''vcdng.''y j kej ''ku''mdgngf''õEwttgpvn{''Eqppgevgf''Vq0ö

Vj g'f kci tco "qp" vj g"pgzv'r ci g"ku"c"j ki j/ngxgn'i tcr j ke"tgr tgugpvcvkqp" qh" vj g"hvpevkqpu" vugf "vq" f kueqxgt"cpf "eqppgev" vq"c"r gtkr j gtcn0"K/cnuq" kmvuvtcvgu" vj g"hvpevkqpu" vugf "vq" ugpf "cpf" tgegkxg" xcnvgu. "y j kej "ku"f kuevuugf "kp" vj g"pgzv" ugevkqp" qh" vj g"f qevo gpv0



Hki wt g'33 - 'Hwpe kqpu' wugf ' \q'f kueqxgt. "eqppgev' \q. "cpf "eqo o wpkec vg' xkc 'Dnwgvqq y 0

# Ugpf kpi 'Xcnwgu'Dgw ggp'kRcf 'cpf 'Ektewky

Vcmkpi 'o gcuwtgo gpul'y kj 'j g'EKU'ku'j g'eqtg''qh'j g''crr.'cpf 'j ku'hwpevkqp'kpxqnxgu'ugxgtcn' uwdr tqeguugu'/ 'etgcvkpi 'c'ewurqo 'r qr qxgt.'xcrkf cvkpi ''j g'o gcuwtgo gpv.'u{ pekpi 'y kj ''j g''CteI KU'' hgcwtg'ugtxkeg."cpf 'ugpf kpi 'xcnwgu''dgw ggp''j g''ektewkxu'o ketqeqpvtqngt''cpf ''j g''crr 0'Vj g'hqewu'' qh''j ku'ugevkqp''qh''j g''f qewo gpv'ku''j g'hnqy ''qh'f cvc''dgw ggp''j g''ektewkxu''o ketqeqpvtqngt''cpf ''j g'' crr 0



Hi wtg'34 Wug'ecugu'hqt '\cmlpi 'o gcuwtgo gpvu'wukpi 'y g'EKD

Gcej "tco r "{r g"j cu'ku'qy p'uegpg'kp''y g'ZEqf g'uqt {dqctf ''y cv'ku'f gf kecygf ''q''cmkpi " o gcuwtgo gpwu0Ngwgtgf ''dwwqpu''ctg''rc {gtgf ''qp''c''f kci tco ''qh'y g'tco r 0Vj g''ngwgtu.''y gkt '' cuuqekcygf ''o gcuwtgo gpvu.''cpf ''ewtd/tco r ''f kci tco u''y gtg''eqr kgf ''htqo ''y g'Lwpg''4239''xgtukqp''qh'' RgppF QVøu'EU/6623'hqto 0Vj g''rc {qwu''qh''y gug''kpygtcevkxg''r ci gu''ctg''etgcvgf ''kp''y g''ZEqf g'' uvqt {dqctf ='y g''dwwqpu''ctg''eqppgevgf ''q''y g''Tco r O gcuwtgo gpvXkgy Eqpvtqmgt''xkc''KDQwmgv'' cevkqpu0Dgecwug''y g''uco g''dwukpguu''nqi ke''ku''wugf ''tgi ctf nguu''qh''ewtd/tco r ''v{r g.''y g''uco g''xkgy '' eqpvtqmgt''ku''wugf 'hqt''cm'tco r ''o gcuwtgo gpv'uegpgu0

Cu'uj qy p'kp'Hki wtg'34. "c'o gcuwtgo gpv'dwwqp''r cuugu'y g'uvctvluvqr "eqo o cpf u'htqo 'y g'' o gcuwtgo gpv'r qr qxgt '\q'ku'f cvc'kgo .'\q'y g'f cvc'kgo øu'Dnwgvqqy 'j cpf ngt0Vj g'Dnwgvqqy '' j cpf ngt'ugpf u'y g'f gxleg'\q'ugtlcn'\*c'Dnwgvqqy Ugtlcn'qdlgev0Cu'c'Dnwgvqqy ''ugtlcn'f gnji cvg. "k/' y cku'hqt'y g'öugtlcnF kf TgegkxgUtkpi ö''uki pcn''cpf ''y gp''wugu'y g'tgegkxgf ''xcnwg'\q'ugv'ku''r tkxcvg'' xctkcdng ''xcnwg'tgegkxgf 0Vj g''r tkxcvg''r tqr gtv{ ''ku''gzr qugf ''cu''cp''Qdugtxcdng. 'y j lej ''y g'f cvc'kgo '' qdugtxgu'\q'ugv'ku''r tkxcvg''r tqr gtv{ ''oxcnwgö0'Hlpcm{. ''y g''o gcuwtgo gpv'dwwqp''qdugtxgu'oXcnwgö'/'' O gcuwtgo gpvF cvcKgo øu''r wdnle''o gcuwtgo gpv'xcnwg''/'cpf ''wugu'y g'o quv'tgegpv'uvtkpi ''go kwgf '' htqo ''y g'utgco ''q''wr f cvg''ku''kwg. ''y wu'f kur rc{kpi ''y g''o gcuwtgf ''xcnwg'\q'y g''wgt0

# Ceeguulpi 'cpf 'Gf kılpi 'CteI KU'J quygf 'O cr

### Fkurnc{kpi 'y g'O cr

Vq"ceeguu'y g"o cr."cp"CI URqtvcnKgo "ku"etgcvgf "vukpi "ku"kgo "KF 0K6'y g"vugt" j cu"mi i gf "kp"y ky " xcrkf "etgf gpvkcni"cpf "y g"o cr "ku"uj ctgf "y ky "y g"vugtøu"qti cpk cvkqp."y gp"y g"r qtvcn'y km" uveeguuhvm{ "mqcf "y g"kgo 0'K6'y g"vugtøu"etgf gpvkcni"ctg"eqttgev'dwi'f qgu"pqv'j cxg'xkgy kpi " r gto kuukqpu."y gp"c"i tg{"uetggp"y km"cr r gct0'Vj g"o cr "ku"cuuki pgf "vq"y g"O cr Xkgy Eqpvtqmgtøu" CI UO cr Xkgy ."y j kej "f kur m{u'y g"kpvgtcevkxg"o cr "vq"y g"xkgy gt0

Y j gpgxgt ''y g''o cr ''ncf u. 'kv''y knl'egpygt ''cv''y g''wugtøu''ewttgpy''necylqp. ''y ky ''c'| qqo ''uecng''qh'7220' Cv''y ku'uecng. 'ukf gy cmu''ctg''engctn{ ''xkukdng''cpf ''o kpko cn'cf lwuvo gpv''q''y g''o crøu''gpxgnqrg''uj qwf '' dg''tgs wktgf 0'Vj g''kpkkcn| qqo ''uecng''ecp''dg''ej cpi gf ''kp''y g''crr''ugwkpi u0

Dgecwug''y g''o cr "cpf 'ku'f cvc''ctg'' quvgf ''qpnkpg. 'kv'y kni'qpn{ 'hwpevkqp'kti'y g''EKU'ku''eqppgevgf ''vq''y g'' kpvgtpgv0

#### Cffkpi 'Hgcwtgu

Qpeg''y g''wugt ''eqphto u'j ku'qt'j gt 'ewtd''tco r ''{r g''ej qkeg. 'c''pgy ''kpucpeg''qh'EwtdTco r 'ku'' cuuki pgf ''q''y g'i nqdcn'ewtdTco r ''xctkcdng0C v'y ku'r qkpv.''y g''qpn{ ''kphqto cvkqp''ks''eqpvckpu'ku'y g'' ewtd''tco r ''{r g''cpf 'c''tgcf { VqGf ks''dqqngcp. 'y j kej ''ku''ugv'\q''twg0Vj ku''dqngcp''eqphto u'y cv'y g'' wugt ''ej qug'c''tco r ''v{r g''htqo ''y g''ukf g''r cpgn'ko o gf kcvgn{ ''dghqtgj cpf =''qvj gty kug. ''cr r kpi ''y g'' uetggp''o wnkr m''ko gu''kp''uweeguukqp''y qwf ''tguwn'kp''o wnkr m''ngcwtgu''qh''y g''uco g''{r g''dgkpi '' etgcvgf 0'Y j gp''y g''wugt ''cr u'y g''o cr .''y g''CI UI gqXkgy Vqwej F gngi cvg'f gvgto kpgu''y g''o cr '' necvkqp''\*cp''CI URqkpv+'y cv'y cu''qwej gf 0'Wukpi ''c''ugtkgu''qh'hwpevkqpu'htqo ''y g''O cr Xkgy O qf gn'' y g''xkgy ''r tqeggf u''q'f gvgto kpg''y j gy gt ''qt''pqv'c''hgcwtg''y cu''qwej gf ''cv'y cv'necvkqp0'Kti' gtq'' hgcwtgu''ctg'kf gpvkhkgf .''y g''ewtdTco r ''xctkcdm''ku''pqv'pkn''cpf ''tgcf { VqCf f 'ku''twg.''y gp'' ewtdTco r øu''etgcvg''hwpevkqp'''ugg'õVj g''EwtdTco r 'Encunö''ugevkqp+'ku''ecmgf ''q''cf f ''c''pgy ''hgcwtg'' y g''y g''f guki pcvgf ''hgcwtg''cdng0

### Hknygt kpi ''y g''O cr ''F kur nc {

CteI KU'hgcwtg''cdngu''ecp''dg''s wgtlgf ''wulpi ''US N''gzrtguulqpu0'Vj g''crr''dwlrfu''c''s wgt { ''r ctco gygt'' dcugf ''qp''qr llqpu''ugngeygf 'htqo ''o wnkrng''ej qleg''o gpwu''cpf ''ugctej gu''cm'qh''y g''o crøu''cdngu'hqt hgcwtgu''y cv'o cvej ''y g''r ctco gygtu0

Vj g'hangt 'o gpw'ku'f kur nc { gf 'cu'c'pcxki cvkqp''eqpvtqngt 'cuuki pgf '\q'O O F tcy gtEqpvtqngtøu'tki j v' f tcy gt 'eqpvchpgt0'Y j gp''qpg''qh'\j g'hangt ''ecvgi qtkgu'ku'\cr r gf ''\*eqwpv{. ''ewtd'tco r ''v{ r g. ''gveh..''yj g'' eqttgur qpf kpi ''xkgy ''eqpvtqngt ''qh'hangt ''qr vkqpu'ku'r wuj gf ''qpvq'\j g''pcxki cvkqp''eqpvtqngt ''ucen0'Vq'' ugpf ''f cvc''dgw ggp'r wuj gf ''xkgy ''eqpvtqngt ''cpf ''yj g''tqqv'ku''y g'' eqpvtqngt.c'r tqvqeqn'y cu''etgcvgf 0' Vj g''vqr ''xkgy ''eqpvtqngt 'ku''yj g''*f grgi cvkpi* ''encuu.''cpf ''yj g''tqqv'ku''yj g'*f grgi cvg*''encuu0'Kp''gcej ''qh''yj g'' r tqvqeqn'hwpevkqpu''yj cv'ctg'ko r ngo gpvgf ''kp''yj g'f grgi cvg''encuu.''cp''wr f cvgS wgt { Rctco gvgtu hvpevkqp'ku'ecngf0

Vj g'y j gtg''encwug'hqt''y g''s wgt { 'ku''etgcvgf ''d { ''kgtcvkpi ''y tqwi j ''xcnwgu'uvqtgf ''kp''uvcemuO'C ''NKMG'' gzr tguukqp''ku''etgcvgf ''wukpi ''y g''uvcemi'xcnwgu. ''cpf ''y gp''y g''gzr tguukqp''ku''cr r gpf gf ''vq''y g''gzkuvkpi '' y j gtg''encwug''uvtkpi 0'P gzv.''gcej ''qh''y g''o cr øu''hgcwutg''vcdngu''ctg''s wgtkgf ''wukpi ''y cv''gzr tguukqp0' Cp{ ''hgcwutgu''y cv'o cvej ''y g''gzr tguukqp''ctg''ugngevgf ''qp''y g''o cr 0

# Fkurne{kpi 'Yj g'O cr 'Ngi gpf

Vj g''gi gpf 'ku''c''cdg''xkgy ''eqpvtqngt''y cv''qi i ngu'kpvq''xkgy ''cu''c''tki j v'ukf g'o gpw'wukpi '' O O F tcy gtEqpvckpgt0'Gcej ''rc {gt''ku''c''pco gf ''ugevkqp''kp''y g''cdg.''cpf ''ku''uvdrc {gtu''tcg''tqy u''kp'' y g''ugevkqp0'Vj g''gi gpf ''o qf gn'eqpvckpu''cp''cttc { ''qh''CI UNc {gtEqpvgpv'y cv'uvqtgu'y g''rc {gtu''cpf '' uwdrc {gtu''hqwpf ''kp''y g''o cr øu''qr gtcvkqpcn''rc {gtu.''cpf ''c''f kevkqpct { ''qh''CI UNgi gpf Kphq''y cv'uvqtgu'' kphqto cvkqp''uwej ''y g''rc {gtøu''pco g''cpf ''ku''u{o dqn0'Vj gug'f cvc''uvtwewtgu''ctg''r qr wrcvgf ''d { '' tgewtukxgn{''nqr kpi ''y g''o cr øu''qr gtcvkqpcn''rc {gtu''cpf ''y gkt''uvdrc {gtu0'Vj g''WKVcdngXkgy '' egmø'\gzv'rcdgn'cpf ''lo ci g''xkgy ''ctg''ugv'wukpi ''y g''CI UNgi gpf Kphq''f kevkqpct { 0'Vj g'' CI UNc {gtEqpvgpvCttc { ''f gvgto kpgu''y g''pwo dgt''qh'tqy u''cpf ''ugevkqpu''kp''y g''cdng0

## TGHGTGPEGU

<u>EqeqcRqfu'Fgx'Vgco0õCffkpi'Rqfu'\q''cp'Zeqfg'Rtqlgev&amp;'EqeqcRqfu.</u> "
j wrudli wlf gulegeger qfulgti 0Ceeguugf '8'F ge042390
/"//OE gegc Raf uQt i Oj wrudlegegcr gf uQt i 10Ceeguugf '8'F ge042390
Gutkloocp'Qxgtxkgy ''qh'Cwtkdwg'f qo ckpuô I gqf cvcdcugu''-'CteI KU'F gumqr (b''CteI KU'Rtq.''
j wrudlrtq@tei ku@eqo lgplrtq/crrljgrlfcvcligqfcvcdcugulqxgtxkgy lcp/qxgtxkgy/qh/"
cwtkdwwg/f qo ckpuQ vo 0Ceeguugf '37'F ge042390
/"//0°C wtkdwg"-Fghkpkkgp0°Gut k'Uwr r gt v'I KUF kevkapct {. 'j wr udluwr r gt vQutkQego lgplqvj gt/"
tguqwteguli ku/f keykqpct { lvgto lcvtkdwg0Ceeguugf '37'F ge042390
/"//0õHgcwtg"Nc{gtu0o"Ctel KU0prkpg."j wrudlf qe0ctei ku0eqo lgplctei ku/qprkpgltghgtgpeglhgcwtg/"
<u>m { gtulj vo 0Ceeguugf '37'F ge042390</u>
j gkdgti OoDnwgvggy Ugtkentu kino "I kJ wd.": "Ugr v04237."
j wrudli kj wdlego li gkdgti luy khonwgvggi Ugtken)
õO GO U'kpgtvkcnlugpuqt(b)"UV.
j wr⊲ly y y ûn&eqo leqpygpyleeeltguqwteghgej plecnlfqewo gpylfcycuj ggyli tqwr4lf: leelfg177le"
8 16f 169 137 1EF 222; 3639 1hrgu1EF 222; 36390 f hllet eqpvgpvlvtcpurcvkqpulgp(EF 222; 36390 f h"
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Lceqdu. "Dctv0oP wu"cpf "Dqnu"qh"F gr gpf gpe { "Kplgevkqp"kp"Uy khvo"Eqeqcecum. "48"Lwpg"4239."
jwrudlegegcecuvullego lpwu/cpf/dgnu/gh/fgrgpfgpe{/kplgevkgp/kp/uykhvl0
Ngy. "Fcp0oCp"Kpxtqf wevkqp"vq"Hwpevkqpcn'Tgcevkxg"Rtqi tco o kpi 0o"Fcp"Ngy "Eqf gu. "Fcp"Ngy"
<u>Eqf gu. "49"Lwn("4239." jwr &lt; 1ktrqi (fcprgy (pgv142391291491cp/kpvtqfwevkqp/vq/hwpevkqpcn"</u> "
<u>tgcevkxg/rtqitcookpi10</u>
<u>õO qf gn/Xkgy /Eqpvtqngt@'/Crrng'/Fgxgnqrgt.''43'/Qev04237.''</u>
jwrudlfgxgrqrgt0crrng0eqolrkdtct{leqpvgpvlfqewogpvcvkqpllgpgtcnlEqpegrwcnlFgxRgfkc/"
EqeqcEqtg10 XE() vo n
a an i la " h as a "Describe be " Carate and Descrit (" "541 D'I Late; a "bat "Def") has a serie ("OD/ "

j wrudly y y QljrjqvqxkfgqQeqo lelrtqfwevl3362;7;/

TGI lo qrj kga4; 22ur akr cf ao kpka54i dadmagz vtcadcwgt {ay kj a54i d0 vo n0Ceeguugf "3: " F ge042390

- $\frac{\tilde{o}Qdugtxcdrg0i'TgcevkxgZ."j wr <1 t gcevkxgz0q lf qewo gpvcvkqp lqdugtxcdrg0j vo r0'Ceeguugf '8'F ge0'$ 42390
- <u>Qtmx."Dqj f cp0ökQU'Ctej kgewtg'Rcvgtpu0i'Dcf qq'Vgej 'Drqi ."43'O ct04238."</u> <u>j wr u<1vgej dmj 0lcf qq0eqo 1dmj 142381251431kqu/ctej kgewtg/r cvgtpu10</u>
- <u>Uej o kf v.'O kng.'cpf 'Iqj p'O qttkuqp0õkQU'F guki p'Rcwgtpu<'O XE'cpf 'O XXO (ö'*Ecrvgej* " <u>Eqpuwnkpi . 'Kpe0''43'P qx04236.'j wr ⊲ly y y (ecrvgej eqpuwnkpi (eqo ldnqi ulkqu/f guki p/</u>" <u>r cwgtpu/o xe/cpf/o xxo 0</u></u>
- Uj cr ktq. 'Gngp0õI gvkpi 'Uvctvgf 'Y kj 'TzUy khv'cpf 'TzEqeqc0o'*Tc [ 'Y gpf gt tkej*.''39'Qev04238." j wr u<1ly y y 0c { y gpf gt tkej 0eqo 135: 769 li gvkpi /uvctvgf /y kj /tzuy khv/cpf /tzeqeqc0
- Uvent .'Cpf tg0öVj g"Kovtqf wevkqp'vq'T geevkxg"Rtqi teo o kpi "[ qwaxg"Dggp'O kuukpi @'/ kj wd.''4236." j wr u<1li kw0 kj wd@qo luvent 1: 8: g9g; de4e9d: e3h9760

õJ E/UT26''What cuqple''T cpi g'H lpf gt $06'TqdqvUj qr0'j wr u \le 1y y y 0qdqvuj qr 0eqo 1gp 1j e/ut26/'' wrat cuqple/tcpi g/h lpf gt0 vo 10°C eeguugf ''39''F ge042390$ 

õ<br/>What cuqple 'T cpi kpi 'O qf wg''J E''/''UT 2606''GNGE Ht gc m<br/>O j wr  $\triangleleft$ ly y y 0 ketqr knoeqo IRF HIJ EUT 260 f h</u>0Ceeguugf ''39''F ge0'42390

õU7'Qr vlecn'Uj chv'Gpeqf gt0ö''WUF ki kkc/0

j wr u<br/>tly y y dr gy cytqpleqo lhegef o kp lr tqf wevulf cycuj ggvul<br/>3971347/23/424/238/GJ /" 32360 fl'0Ceeguugf "39"F ge<br/>042390

### Crrgpf kz'G

### Vcumi7'Rgthqto 'c'Nksgtcwtg'Tgxkgy 'Tgncvgf 'vq'Ewtd/Tcor 'F guki p'Ogyjqfu

#### Cduxtcev

Vj ku'hkgtcwtg'tgxlgy 'u{ pvj gul{ gu'vj g'f guli p'i wkf cpeg''cxckrcdrg''q''ewtd/tco r 'f guli pgtu'y j q'' y qtm'q''o ggv'ceeguuldkkk{ 'uxcpf ctf u'cuuqekcvgf 'y kj ''j g''Co gtlecpu'y kj ''F kucdktkskgu'Cev'\*CFC+0' Ej crngpi gu'tgi ctf kpi ''y g''ewttgpv'f guli p''r tqeguu''ctg''kf gpvkhgf .''cu'y gm'cu'ukwcvkqpu''kp''y j kej ''y g'' Wpkxgtuks{ ''qh'Rkwudwti j øu''ewtd/tco r ''kpur gevkqp''u{ uvgo ''eqwf ''dg''dgpghkekcn0 I wkf grkpg''f qewo gpwu''ctg''y g''r tko ct { ''uqwteg''qh''o cvgtkcn'yi cv'f guetkdgu''yi g''ewtd'tco r ''f guli p''cpf '' eqpugs wgpvn{ ''ctg''y g''o ckp''uqwteg''qh''o cvgtkcn'wugf ''kp''yi ku''tgxlgy 0'Nkuvu''qh''dguv'r tcevkegu''ctg'' f guetkdgf ''cpf ''ecug''uwf kgu''j ki j rki j vgf 'yi cv'f go qpuvtcvg''y j gp''ceeguuldrg''ewtd/tco r u''ctg vgej pkecm{ ''kphgcukdrg0'Vj g''ksgtcwtg''kpf kecvgu''yi g''pggf ''hqt''c''u{ uvgo cvke''cr r tqcej ''q''ewtd/tco r '' f guli p.''y j kej ''y kn'j gr ''tgf weg''yi g''ngctpkpi ''ewtxg''hqt''pgy ''f guli pgtu''cu''yi g{ ''f gxgrqr ''gpi kpggtkpi '' lwf i o gpv'yi tqwi j ''gzr gtkgpeg0

## Kpvtqfwevkqp<Tgugctej'Ueqrg

## Ugctej 'O gvj qf u

Tgr qt vu. ''encuugu. ''y qt mij qr u. ''r tgugpvc vlqpu. ''cpf 'f guli p'i wlf grlpgu''r wdrkuj gf ''d { ''uvcwj''f gr ct vo gpwi'' qh''vcpur qt vcvlqp''tgi ctf lpi ''ewtd/tcor r ''CFC''eqor r hcpeg''y gtg''y g''o clp''uqwteg''qh''lphqto cvlqp." y kj ''c''nqewu''qp''tguqwtegu''cxckrcdrg''y tqwi j ''RgppFQV0Rwdrkuj gf ''r ncpplpi ''cpf ''f guli p'i wlf gu'' y gtg''tgxlgy gf ''qp''y g''HJYC''y gdukg. ''cu''y gm'cu''Vjg''WU'Ceeguu'Dqctføu''Rwdrke''Tki j w/qh'Yc{'' Ceeguuldkrkw{''I wlf grlpgu''\*RTQYCI+0

Guvcdrkuj gf 'f cvcdcugu'y gtg''s wgtkgf 'hqt''ctvkengu'tgrcvgf '\q''ewtd/tcor 'f guki p'6''Ueqr wu." Eqor gpf gz."VTKF.'Y qtnf 'ECV.'RtqS vguv.'cpf 'I qqi ng''Uej qnct0'Qh''y gug'f cvcdcugu.''VTKF " {kgnf gf '\y g''j ki j guv'pwo dgt''qh''tgrcvgf ''ctvkengu''dgecwug''kv'ku''hqewugf ''qp''eqngevkpi ''vcpur qtvcvkqp'' tgugctej 0

# Vtgpfu'cpf'Icru'kp'\jg'Nksgtcvwtg

Qwuld g"qh'RTQY CI "cpf "ý g'Co gtlecpu'y ký "F kucdkrkkgu'Cev'Ceeguuldkrkk{"I wkf grhpgu" \*CF CCI +: "ý g"o quv'r wdrkuj gf "f gulk p"tguqwtegu"ctg"õj qy "\qö"f qewo gpwu"etgcvgf "d{ "uvcvg" i qxgtpo gpvu"hqt "ý glk "go r m{ ggu0'Ewtd/tco r "f gulk pu'\qr leu"ctg"pqv"htgs wgpvn{"o gpvkqpgf "lp" cecf go le"hkgtcwtg."uvej "cu'f kuugtvcvkqpu. '\gz vdqqmu. "qt"cecf go le"eqpligtgpegu"cduvtcevu0'Vj ku" eqwf "dg"dgecwug"ewtd/tco r u"ctg"c"plej g"\qr le"y ký lp"cp"ceeguuldng"f gulk p0'O quv'ewtd/tco r " f gulk pu"cpf "uwtxg{ u"ctg"r gthqto gf "d{ "r tlxcvg"eqpvtcevqtu"y j q'y qwff "pqv'\{ r lecm{ "r vdrlen{" tgrgcug"f gckrgf "f guetlr vkqpu"qh'y glk "f gulk p"r tqeguu0J qy gxgt."gxgp"kh"uvej "lkgtcwtg"y gtg" cxckrcdng."c"uvcpf ctf k gf "r tqeguu"y qwff "dg"f kthlewn/\q"etgcvg"dgecwug"ewtd/tco r "ukgu"j cxg"

Hwtyj gto qtg. 'ewtd/tco r 'f guki pu'wugf 'd { 'uvcvg'f gr ctvo gpvu'qh''tcpur qtvcvkqp''cpf 'o wpkekr crkvkgu''

ecp"qpn{ "dg"hqwpf "qp"yj g"tgur gevkxg"f gr ctvo gpvøu"y gdukg0C "egpvtcnk gf "cpcn{ uku"qh"ewtd/tco r " f guki pu"kp"f khigtgpv"uvcvgu"eqwrf "pqv"dg"hqwpf0Cf f kkqpcm{."ugxgtcn"uvcvgu"j cxg"etgcvgf "f guki p" i wkf gnkpgu"yj cv"kpeqtr qtcvg"Rwdnke"Tki j uu"qh"Y c{ "Ceeguukdkrkv{"I wkf gnkpgu"\*RTQY CI +0Hqt"c" dtqcf gt"uwwf {."c"egpvtcnk gf "tgeqtf "qh"y j kej "uvcvgu"cf j gtg"vq"RTQY CI "y qwrf "dg"wughwn0

### Qxgtxlgy 'qh'Ewtd/Tcor'Tgiwncwlqpu

## Vgtou'cpf'Fghkpkkqpu

Cnystpcvg"pco gu'hqt"vgto u'qt"cddtgxkcvkqpu"ctg"huvgf "kp"r ctgpvj gugu0

Ewtd/tco r '\*ewtd'ewv.''ewtd/tco r +<'C''uj qtv'tco r ''ewvkpi ''y tqwi j ''c''ewtd''qt''dwkn/'wr ''vq''kv'\*WUU' Ceeguu'Dqctf.''4233+0

Etquu'unqr g<'Vj g''unqr g''y cv'ku''r gtr gpf kewret '\q''y g''f ktgevkqp''qh'\texgn'\*RgppF QV. '4237+0' F gvgevedrg''Y etpkpi ''Uwtheeg'\*F Y U+<'C ''uvepf etf kt gf ''twpeevgf ''f qo g''i tkf ''uwtheeg''dwkn'/kp''qt'' er r nlgf '\q''y g''r gf guvtlep''eeeguu'tqwg'\q'y etp''xkuwem{ 'ko r ektgf ''r gqr mg''qh'j e| etf u0'Vj g''uwtheeg''ku'' r megf ''y j gtg''r gf guvtlepu'y km'gpeqwpvgt ''y g''r tgugpeg''qh'j e| etf u'kp''y g''rlyg''qh''texgn''uwej ''eu'y g'' gf i g''qh''tqef y e{ ''epf 'tekntqef u. 'kpf keevkpi ''y ev'y g{ ''uj qwf ''uvqr ''epf ''f gvgto kpg''y g''pewrtg''qh'y g'' j e| etf ''dghqtg''r tqeggf kpi ''hwty gt'''RgppF QV.''4237+0

Gpi kpggtkpi "lwf i o gpv<Vj g"gxcnxcvkqp"qh"cxckrcdrg"r gtvkpgpv"kphqto cvkqp"cpf 'vj g"cr r necvkqp"qh" cr r tqr tkcvg"r tkpekr ngu. 'uvcpf ctf u. 'i wkf gnkpgu. 'cpf 'r tcevkegu. 'hqt' vj g'r wtr qug"qh"f gekf kpi 'wr qp"vj g" cr r necdktk{. 'f guki p. "qr gtcvkqp. "qt "kpuvcncvkqp"qh"j ki j y c{ 'tgncvgf 'hcektkkgu0Gpi kpggtkpi " lwf i o gpv'y kn"dg"gzgtekugf 'd{ ''c"nkegpugf 'r tqhguukqpcn"gpi kpggt. "qt ''d{ ''cp"kpf kxkf wcn'y qtmkpi " wpf gt ''y g'uwr gtxkukqp"qh"uwej "gpi kpggt0F qewo gpvcvkqp"qh"gpi kpggtkpi "lwf i o gpv'ku"pqv"tgs wktgf '' dw'ku"f guktcdrg"y j gp"r tqxkf kpi ''ceeguu''q"vj g"o czko wo "gzvgpv"hgcukdrg"\*RgppF QV. ''4237+0' Nqpi kwkf kpcn'unqr g'\*twppkpi ''unqr g+<''Vj g"nqpi kwkf kpcn'unqr g'ku' yj g'unqr g'r ctcmgn''q' yj g'f ktgevkqp"qh" vtcxgn0

Rgf guvt kcp'Ceeguu'Tqwg'\*RCT+**C'eqpvkpwqwu'cpf 'wpqduvt wevgf 'r cvj 'dh'it cxgnir t qxlf gf 'hqt**" r gf guvt kcpu'y kj 'f kucdkiksigu'y kj kp'dt 'eqlpelf kpi 'y kj 'c'r gf guvt kcp'ekt ewuc wap'r cvj 0\*WUU Ceeguu'Dqctf.'4233+

Vwtpkpi "ctgcu<'C'6'hw2'6'hw0o kpko wo "gxgn'ctgc"qhi'y g'y cmy c{"cv'y g'\qr "qt"dqwqo "qh'c'tco r " y cv'cmqy u'y j ggngf "wugtu'ur ceg'\q"qtkgpv'y gkt"f ktgevkqp"dghqtg"cpf "chvgt "wukpi "c'tco r 0'Cmq" ecngf "r gf guvtkcp"ncpf kpi u'kp"y g'4232'CF C'Uccpf ctf u

Vwtpkpi "tcf kwu\*o kpko wo "egpvgtnkpg"wtpkpi "tcf kwu+<'C"ektewnct"cte"hqto gf "d{ "y g"wtpkpi "r cy "qh" y g"htqpv'qwukf g"vktg"qh"c'xgj keng"\*P cvkqpcn'Cuuqekcvkqp"qh"Ekx{ "Vtcpur qtv'Qhhkekcnu."4238+0

Vj g'Co gtkecpu'y kj 'F kucdktkkgu'Cev'\*CFC+'\*3; ; 2+<'Vj g'Co gtkecpu'y kj 'F kucdktkkgu'Cev'\*64" WUE034323 'gv'ugs0+'ku'c'hgf gtcn'ekxkti'tki j w'rcy 'y cv'r tqj kdku'f kuetko kpcvkqp'ci ckpuv'kpf kxkf wcnu' y kj 'f kucdktkkgu0'Vkng'KKqh''y g'Co gtkecpu'y kj 'F kucdktkkgu'Cev'eqxgtu'uvcvg''cpf ''necn' i qxgtpo gpvu0

CFC'Ceeguukdkrkx{'I wkf grkpgu'\*CFCCI +'\*4226+

Vj ku'f qewo gpv'eqpvckpu'ueqr kpi 'cpf 'vgej pkecn'tgs wktgo gpwi'hqt 'ceeguukdkkk{ 'vq'dwkrf kpi u'cpf " hcektkkgu'd{ 'kpf kxlf wcmi'y ky 'f kucdktkkgu'wpf gt'y g'CF C0'Vj gug'ueqr kpi 'cpf 'vgej pkecn' tgs wktgo gpwi'ctg'vq'dg''cr r ngf 'f wtkpi 'vj g'f guki p. 'eqpuvt wevkqp. 'cpf ''cngtcvkqp''qh''dwkrf kpi u'cpf " hcektkkgu0'Vj g{ 'ctg''eqxgtgf 'd{ ''Vkngu'fKCpf 'fKKGqh'vj g''CF C'vq''vj g''gz vgpv'tgs wktgf 'd{ ''tgi wrcvkqpu'' kuuwgf 'd{ 'Hgf gtcn'ci gpekgu. 'kpenwf kpi 'vj g''F gr ct vo gpv'qh''Lwuvkeg''cpf 'vj g''F gr ct vo gpv'qh'' Vtcpur qtvcvkqp. 'wpf gt'y g''CF C''\*WUUCeeguu'Dqctf.''4224+0 CFC'Uvcpf ctf u'hqt'Ceeguukdng'F guki p'\*4232+

Rwdnuj gf 'd{ ''y g'F gr ctvo gpv'qh'Lwukeg. ''y g'CFC''Ucpf ctf u'hqt''Ceeguukdng'F guki p''ctg''eqo r tkugf " qh''y g'CFC''cpf 'CFCCI 0öVj g''4232''ucpf ctf u'ugv'o koko wo 'tgs wktgo gpvu''o''dqy ''ueqr koi ''cpf '' vgej pkecn'o''hqt ''pgy n{ 'f guki pgf ''cpf ''eqpuvt wevgf ''qt''cnvgtgf ''Ucvg''cpf ''nqecn'i qxgtpo gpv'hcekrkkgu.'' r wdrke ''ceeqo o qf cvkqpu. ''cpf ''eqo o gtekcri'hcekrkkgu''q''dg'tgcf kn{ ''ceeguukdrg''q''cpf ''wucdrg''d{ '' kpf kxkf wcni'y kj ''f kucdkrkkgu''\*WUOF gr ctvo gpv'qh''Lwukeg.''4232+66

Rwdrke'Tki j vqh/Y c{'Ceeguukdkrkx{'I wkf grkpgu'\*RTQY CI +'\*r tqr qugf 'kp'4233+

RTQY CI "cf f tguugu'xctkqwu'kuwgu''y cv'ctg"pqv'qp"c"ukg."uwej "cu'ceeguu'hqt"dhpf "r gf guvkcpu''cv' uvtggv'etquukpi u.'y j ggnej ckt "ceeguu''q"qp/uvtggv'r ctnkpi ."cpf "xctkqwu"eqpuvtckpwl"r qugf "d{ ''ur ceg" nko kcvkqpu."tqcf y c{ ''f guki p"r tcevkegu."unqr g."cpf ''vgttckp0'Vj g"pgy "i wkf grkpgu"eqxgt"r gf guvtkcp" ceeguu''q"ukf gy cmu''cpf ''uvtggvu. "kpenwf kpi "etquuy cmu."ewtd/tco r u. 'uvtggv'hwtpkij kpi u.'r gf guvtkcp" uki pcnu.'r ctmkpi ."cpf "qvj gt "eqo r qpgpvu"qh'r wdnke'tki j w/qh'y c{ ''\*WUUCeeguu'Dqctf ."4233+0/Kp" 4228."yj g'WUUF gr ctvo gpv'qh'Vtcpur qtvcvkqp"cppqwpegf "yj cv'RTQY CI "ku'yj g"ewtgpvn{ '' tgeqo o gpf gf 'dguv'r tcevkegu."cpf "ecp"dg"eqpukf gtgf 'yj g'uvcwg'qh'yj g'r tcevkeg'yj cv'eqwf "dg" hqmqy gf 'hqt"ctgcu'pqv'hwm{ ''cf f tguugf ''d{ ''y g''r tgugpv'CF CCI ''uvcpf ctf u'\*Kurgt."4228+0

Y j q'i whf gu'gphqtego gpv'qh'CFC'uvcpfctfuA

Vj g'F gr ctvo gpv'qh'Lwukeg'\*F QL+'ku'tgur qpukdrg'hqt'kuukkpi 'tgi wrckqpu'kq'kor ngo gpv'Vkrg'KKqh'' y g'CFC.'gzegr v'hqt''y g'r wdrke''tcpur qtvckqp''cur gevu0'Vj g'tgi wrckqpu'kuukgf ''d{ ''y g'F gr ctvo gpv'' qh'Lwukeg'kpenwf g''ceeguukdkrk{ ''uvcpf ctf u'hqt''y g'f guki p.''eqput werkqp.''cpf ''cngtcrkqp''qh'hcekrkkgu'' \*qy gt''y cp'hcekrkkgu''wgf ''kp''y g''r tqxkukqp''qh'r wdrke''tcpur qtvcrkqp''eqxgtgf ''d{ ''tgi wrckqpu'kuukgf '' d{ ''y g'F gr ctvo gpv''qh''Vtcpur qtvcrkqp+\*\*QF QV+.''4238+0

Vj g'Hgf gtcn'J ki j y c{'Cf o kpkntcvkqp'\*HJ Y C+

Wpf gt 'F QL'tgi wncvkqpu. 'vj g'HJ Y C'f kxkukqpu'o wuv'y qtm'y kj 'vj gkt 'uvcvg'f gr ctvo gpwl'qh'' vtcpur qtvcvkqp. 'o gvtqr qnkcp'r ncppkpi ''qti cpk cvkqpu. 'cpf ''nqecn'r wdnke''ci gpekgu'vq ''gpuwtg'CF C'' cpf ''Ugevkqp'726'tgs wktgo gpwl'ctg'kpeqtr qtcvgf ''kp''cm'r tqi tco ''cevkxkkgu''hqt''cm'r tqlgewl'y kj kp''y g'' r wdnke''tki j  $\sqrt{qh'y}$  c{'tgi ctf nguu''qh''hwpf kpi ''uqwteg0'Rtqi tco ''cevkxkkgu''kpenwf g''r tqlgev'r ncppkpi .'' f guki p. ''eqputvevkqp. ''cpf ''o ckpvgpcpeg'\*QF QV+.''4238+0

WU0'Ceeguu'Dqctf

Vj g'Ceeguu'Dqctf 'ku'cp'kpf gr gpf gpv'hgf gtcn'ci gpe{ "guvcdnkuj gf "d{ 'ugevkqp'724''qh'vj g" Tgj cdkkkcvkqp'Cev'\*4; 'WUUE09; 4+05''Vj g'Ceeguu'Dqctf 'ku'tgur qpukdng'hqt'f gxgnr kpi " ceeguukdkkk{ 'i vkf grkpgu'hqt''yj g'f guki p. "eqpuvt vevkqp."cpf "cnvgtcvkqp''qh'hcekkkgu'vq "gpuvtg''yj g{ "ctg" tgcf kn{ "ceeguukdng'vq'cpf 'wucdng''d{ 'kpf kxkf vcni'y kyj 'f kucdkrkkgu0'Y j gp'yj g'Ceeguu'Dqctf øu" i vkf grkpgu''ctg''cf qr vgf .''y kyj 'qt'y kyj qw''cf f kkqpu''cpf ''o qf khecvkqpu.''cu''ceeguukdkrkv{ ''uvcpf ctf u'kp'' tgi wrcvkqpu''kuuvgf ''d{ ''qvj gt'hgf gtcn'ci gpekgu'ko r ngo gpvkpi ''yj gug''rcy u.''eqo r nkcpeg''y kyj ''yj g'' ceeguukdkrkv{ ''uvcpf ctf u'ku''o cpf cvqt { ''\*WUU0Ceeguu'Dqctf.''4233+0

Vj g'Ewtd/tco r 'F guki p'Rtqeguu

### Vjg'fgekkqp'\q'Cff'c'Ewtd/Tcor

Kp''y g''3; ; 2'CFC''Ucpfctfu.''y g''WUUF grctvo gpv'qh''Lwuvleg''tgs wltgf''y cv'õP gy n{ ''eqpuvtwevgf''qt'' cngtgf''uvtggvu.''tqcfu.''cpf''j ki j y c{u''o wuv'eqpvckp''ewtd/tcoru''qt''qy gt''unqrgf''ctgcu''cv'cp{'' lpvgtugevlqp''j cxkpi ''ewtdu''qt''qy gt''dcttkgtu''vq''gpvt{''htqo''c''uvtggv'ngxgn''r gfguvtkcp''y cmy c{05''Kp'' cffkkqp.''õpgy n{ ''eqpuvtwevgf''qt''cngtgf''uvtggv'ngxgn''r gfguvtkcp''y cmy c{u'o wuv'eqpvckp''ewtd/tcoru''

qt"qyj gt"ungr gf "ctgcu"cv"kpygtugevkqpu"vq"uvtggvu. "tqcf u. "qt"j ki j y c { u06"Vj g"f gekukqp"qh'yj g"ecug" Mkppg{ 'xu0[ gtwucho 'kp'3; ; 5'f gygto kpgf 'y cv'tguwthcekpi 'ku'eqpukf gtgf 'cp''cnygtcvkqp0\*\*\*WU0' F gr ctvo gpv'qh'Lwukeg'( 'Hgf gt ch'J ki j y c{ 'Cf o kpkutckqp.'4235+0Vj g'F QL'pqvgu'y cv'pgy " tguwthcekpi "vgej pqmji kgu"j cxg"r tqo r vgf "uvcvg"cpf "mecn'i qxgtpo gpvu"vq"tgs wguv"cf f kkqpcn" i wkf cpeg"cdqw"y j kej "tguwtlicekpi "vgej pqnqi kgu"ctg"eqpukf gtgf "cngtcvkqpu"\*WUOF gr ctvo gpv"qh" Lvurkeg" ( "Hgf gtcn'J ki j y c{ "Cf o kpkrtcvkqp."4235+0"Vj g"F QLIF QV"tgur qpf gf "y kj "c"|qkpv" vgej plecn'o go q'enctkh{kpi 'y j cv'v{r gu'qh'tqcf y c{ 'uwthceg'vtgcvo gpvu'ctg'eqpukf gtgf 'cngtcvkqpu' cpf 'y j kej "ctg"eqpukf gtgf 'o ckpvgpcpeg0J qy gxgt. 'y g'vgej pkecn'uvcvgo gpvu'o cfg'kp'y g" f qewo gpv'j cxg'dggp'o gv'y ky 'f kuci tggo gpv0F t0F kpi Z kp'Ej gpi .'Rj 0F 0'R0G0''y g'f ktgevqt''qh''y g'' Rcxgo gpv/Rtgugtxcvkqp'Egpvgt''cv'Ecnkhqtpkc''Uvcvg'Wpkxgtukv{.'Ej keq.''uvcvgf ''vj cv'o ketq''uvthcekpi '' cpf "ecr g"ugcnı"ctg"xgt { "uko krct "\q"unxtt { "ugcnı"cpf "yj cv'yj g { "uj qwrf "cm'dg"encuukhkgf "cu" o ckpvgpcpeg0J qy gxgt. 'y g'hkuv'y q'ctg'eqpukf gtgf "cnygtcvkqpu0HR4"Kpe0"c''vtcf g'cuuqekcvkqp" uwr r qtvgf "d{ "eqpvtcevqtu." o cvgtkcn'uwr r nkgtu. "cpf "gs wkr o gpv'o cpwhcewstgtu. "guvko cvgf "y g"ko r cev" qh''y gug''encuulkhecvkqpu00 cmkpi 'o ketq/uwthcekpi 'cpf 'y kp1wntc/y kp''qxgtrc{u'cnygtcvkqpu'kpuvgcf ''qh'' o ckpvgpcpeg'j cf "uki pkłkecpv'ko r cevu"qp"uvcvg"cpf "męcn'i qxgtpo gpvu0Vj g{ "encko gf "yj cv'yj g" kpetgcug'tgs wktgf 'CFC' wr i tcf gu'y cv'equv'dgw ggp'42' "cpf '72' "qh'uvcvg'tqcf 'o ckpvgpcpeg" dwf i gw. "y j kej "y qwrf "f getgcug" y g'vqvcn'o krgu" qh''tqcf "y cv'ecp"dg"cf gs wcvgn( "o ckpvckpgf 0 Cm'r wdnke "ci gpekgu"y ky "o qtg" y cp"72 "go r m { ggu"ctg"tgs wktgf "vq" j cxg"cp"CFC "vtcpukkqp"r ncp0" Vj g"tcpukkqp"r rcp"o wuv'kf gpvkh{ "qduvcengu"kp"yj g"r wdnle"ci gpe{øu"hceknkkgu"yj cv'nko kv'yj g" ceeguukdkrks{ "qhi ku'r tqi tco u'\q'kpf kxkf wcnı'y ky "f kucdkrkskgu"cpf "f guetkdg"kp"f guckriyi g"o gyi qf u'qh" y cv'y km'dg"wugf "vq"o cmg"y g'heektkkgu'eeeguukdng0C "uej gf wng"hqt "eqputt werkqp"r tqlgevu'epf "y g" qhhkekcn't gur qpukdrg'hqt 'y g'ko r rgo gpvcvkqp''qh''y g'r rcp''o wuv'cnuq''dg''kf gpvkhkgf 'kp''y g'r rcp0

#### Vqrqitcrjle'Uwtxg{

F gvckrgf 'RgppF QV'tgs wktgo gpvu'liqt'r tgrlo kpct { 'uwtxg{u'ctg'r tgugpvgf 'kp'Rwdrkecvkqp''344O <' Uwtxg{kpi "cpf 'O cr r kpi 'O cpwcrl\*RgppF QV.'4232+0Eqrngevgf 'kpliqto cvkqp''y cv'f ktgevt| "chfigevu" ewtd/tco r 'f guki p'kperwf gu'ukf gy cmi'y kf yj ='ukf gy cmi'necvkqp''y kj 'tgur gev'vq''y g''dceriliceg''qh'' ewtd='j gki j v'cpf 'y kf yj 'qh''ewtd''etquu'ugevkqp='f guki p'wtpkpi 'tcf kwu'cpf 'hgpi yj ''qh''ewtxg''cmpi ''y g'' ewtd''hceg='cpi ng''qh''utggv'kpvgtugevkqp\*u+='r rcppgf ''qt ''gz kurkpi ''nqecvkqp''qh''uki pcn'cpf ''uki pcn'eqpvtqn'' f gxkegu='uvqto ''y cvgt ''kprgu''cpf ''r wdrke''uwthceg''wkkkkgu=''r quukdng''uki j v''qdurt wevkqpu=''utggv'y kf yj .'' qy gt'r j { ukecn'qdurtwevkqpu''uwej ''cu''dwkrf kpi u ''dtkf i gu''cpf ''y cm='tqcf y c { 'i tcf g='cpf 'r ctnkpi '' ur cegu'\*CCUJ VQ.''4233=''RgppF QV.''4237+0'RWD''344''tghgtu''q''r tgrlo kpct { 'uwtxg{ 'hqt'f guki p''kp'' i gpgtcn''pqv'ur gekhecm{ ''uwtxg{ 'hqt''ewtd/tco r ''f guki p0'Vqr qi tcr j ke'kphqto cvkqp''ku''gpvgtgf 'kpvq''y g'' eqo r wgt/ckf gf /f guki p''uqhvy ctg.''y j kej ''r tqxkf gu'c''5/f ko gpukqpcn'ko ci g''hqt''y g''f guki pgt'\*O cj .'' 4238+0

#### Ewtd/tco r'Nqecvkqp

Ewtd/tco r u'o wuv'dg''qtkgpvgf 'kp''uwej ''c'hcuj kqp''y cv'y g'i tcf g''dtgcmiku'' r gtr gpf kewret ''q''y g''f ktgevkqp''qh''tcxgr0'Vj ku''ecp''dg''ceeqo r nkuj gf ''d{ '' kpuvcmkpi ''y g''ewtd/tco r ''r gtr gpf kewret ''q''y g''ewtd0'Vj ku''cmqy u'hqt''c'' y j ggrej ckt ''q''o cng''eqpvcev'y kj ''dqy ''y j ggnu''dghqtg''gzr gtkgpekpi ''c'' ej cpi g''kp''i tcf g=''j qy gxgt. ''y ku''o c{ ''ecwug''y g''ewtd/tco r ''q''pqv''dg'' cnki pgf ''y kj ''etquuy cm'''ugg''Hki wtg''3+0'Kp''y ku''ukwcvkqp. ''y g''ewtd/tco r ''



o c{ "dg'kpuvcngf 'kp''y g''uco g'f ktgevkqp''cu''y g''etquuy cmi'cpf ''pqv'r gtr gpf kewrct''yq''y g''ewtd''d{ " r tqxkf kpi ''c''tkcpi wrct''rcpf kpi 0'Ewtd/tco r u''cnki pgf ''y kyi ''y g''etquuy cmi'ctg''r tgibgttgf 0

### Ej qqug'c'Ewtd/Tcor'V{rg

Chęt'ý g''y qi ter j ke''uvtxg{ 'ku''eqo r ngvg.'f guki pgtu''y{ r kecm{ 'ej qqug'c''ewtd/tco r ''yo r ncvg'' r tqxkf gf 'd{ ''y g''er r tqr tkevg''ucvg''f gr et vo gpv'qh''tepur qtvevlqp''epf ''dgi kp''eff kpi ''f ko gpukqpu''yq'' y g''ygo r ncvg0'Kti'pqpg''qh'y g''ucvgøu''ewtd/teo r ''y{ r gu''eep''dg''wugf ''yq''dwkff ''c''eqo r nkepv''ewtd/teo r .'' cp''ewgo r v'ku''o ef g''yq''f guki p''c''ewtd/teo r 'htqo ''uetevej ''y ev'o ggwu''CFC''tgi wnevlqpu0 Y j gtg''gzknkpi ''ukg''eqputekpu''ho kv'y g''edkkk{ ''yq''hwm{ ''o ggv'y g''nevguv''uvepf etf u.''y g'' ko r tqxgo gpwu''qt''wr i tef gu'o wnv'dg'f qpg''q''r tqxkf g''eeeguu''q''y g''o ezko wo ''gzvgpv'hgeukdng'' y kj kp''y g''ueqr g''qt''ho ku''qh''y g'f guki pevgf ''r tq1gev0RgppFQV''wugu''e''Vgej pkeem{ ''Kphgeukdng''hqto '' yq''f qewo gpv''ukg''eqputekpwu''epf 'f guki p''f gekukqpu0

#### I gpgt crlF guli p'I wlf grkpgu

Ewtd/tco r u''ctg''etgcvgf ''q''gpcdrg''r gqr rg''y kj ''f kucdktkkgu''q''uchgn{ ''tcxgnl'tqo ''y g''ukf gy cmt'q''y g'' uvtggv.''cpf ''xkeg/xgtuc0Dgecwug''kpf kxlf wcnu''y kj ''o qdktk{ ''ko r ckto gpvu''\*y j ggrej ckt ''wugtu.''y g'' grf gtn{ .''cpf ''wugtu''y cmtpi ''y kj ''etwej gu.''gve0#''ctg''o quv'chhgevgf ''d{ ''ewtd/tco r u''\*\*QF QV+.''4238+.'' cro quv'cml'f guki p''dguv'r tcevkegu''ctg''etgcvgf ''y kj ''y gug''wugt''i tqwr u'kp''o kpf ''\*Dgpghkekcn'F guki pu.'' Kpe0''Lwrkg''D0'Mktuej dcwo .''Rgvgt''Y 0'Czgnuqp.''Rcvtkekc''G0'Nqpi o wkt.''Mcy rggp''O 0'O kur ci gn''Lwrkg'' C0'Uvgkp.''4223+0

Dguv'Rtcevlegu'hqt'Ewtd/tcor'F guki p'\*eqr kgf 'htqo'F guki pkpi 'Ukf gy cmu'cpf 'Vtcku'hqt'Ceeguu." Rctv'KKqh'K4 \*P qvg<Uqo g'ej cpi gu'j cxg'dggp'cf f gf 'vj cv'cnki p'y ký 'RTQY CI .'y j kej 'y cu'r wdnkuj gf 'chvgt 'vj g'' vgz v'kpenwf kpi 'vj ku'vcdrg0Kp'4228.'vj g'WU0F gr ctvo gpv'qh'Vtcpur qtvcvkqp''cppqwpegf 'vj cv

Dguv'Rt cevleg	Тсуфрену
Rtqxlsf g"c"hgxgn"o cpgwxgtkpi "ctgc" qt"hcpf kpi "cv"yj g"vqr "qh"yj g"ewtd/ tco r 0	Ncpfkpiu"ctg"etkklecn'\q"cmqy"yjggnejckt"wugtu"urceg"\q" ocpgwxgt"qp"qt"qhh'yg"tcor0
Engctn{ 'kf gpvkh{ 'vj g''dqwpf ct { '' dgw ggp''vj g''dqwqo ''qh''yj g''ewtd/ tco r ''cpf ''vj g''uvtggv'y kyj ''c'' f gygevcdng''y ctpkpi 0	Y ký qwv'c'f gvgevcdng'y ctpkpi.'r gqr ng'y ký 'xkukqp" korcktogpvu'oc{'pqv'dg"cdng'vq'kf gpvkh{'vý g"dqwpfct{" dgw ggp'vj g'ukf gy cmn'cpf'vj g'uvtggv0
Rrceg''y g''ewtd/tcor''y kj kp''y g'' octngf ''etquuy cm''ctgc0	Rgf guvtkopu"qwukf g"qhi'yj g"o ctngf "etquuy cmi'ctg"nguu" nkngn{ 'vq"dg"uggp"d{ 'f tkxgtu"dgecwug''yj g{ "ctg"pqv'kp"cp" gzr gevgf "nqecvkqp
Cxqlf "ej cpi gu"qh"i tcf g"yj cv" gzeggf "33' "]RTQY CI "?3505' _" qxgt"c"832"o o "kpygtxcn0	Ugxgtg"qt"uwffgp"itcfg"ejcpigu"oc{"pqv"rtqxkfg" uwhhkekgpv"engctcpeg"hqt"yjg"htcog"qh"yjg"yjggnejckt" ecwukpi"yjg"wugt"vq"vkr"hqtyctf"qt"dcenyctf0
F guki p''y g''tcor ''y cv'f qgu''pqv'' tgs wktg''wtpkpi ''qp''y g''tcor'' uwthceg0	O cpgwxgtkpi "qp"c"uvggr "i tcfg"ecp"dg"xgt{"jc ctfqwu"hqt" rgqrng"ykj "oqdknkv{"korcktogpvu0
]RTQY CI f gvgevcdng'y ctpkpi 'uwthcegu0_	I tcf wcn'unqr gu'o cng'k/f khkewn/hqt'r gqr ng'y kj 'xkukqp'' korcktogpw'y g'f gygev'y g'r tgugpeg''qh'c'ewtd/tcor0
F guki p''y g''tco r ''y ky ''c''i tcf g''qh'' 908''Õ'304''r gtegpv''qt ''nguu0 ]RgppF QV''cumi'ku''gpi kpggtu''yq'' r tqxkf g''y g''ncwguv'unqr g''r quukdng0_	Uj cmqy "itcf gu"ctg"fkhhkewn/hqt"rgqrng"ykj "xkukqp" korcktogpvu"vq"fgvgev"dw/uvggr"itcfgu"ctg"fkhhkewn/hqt" yjqug"wukpi"cuukuvkxg"fgxkegu"hqt"oqdknkv{0
F guki p''y g''tco r ''cpf ''i wwgt''y ky ''c'' etquu''unqr g''qh'402''r gtegpw0	Tcoru'uj qwnf 'j cxg'c'o kokocn'etquu'unqrg'vq''cxqkf" y jggnejcktu'htqo'f tkhtkpi 'qhh'yjg'tcor0
Rtqxkfg"cfgswcvg"ftckpcig"vq" rtgxgpv'vjg"ceewowncvkqp"qh'ycvgt" qt"fgdtku"qp"qt"pgct"vjg"tcor0	Y cvgt. 'keg. ''qt 'f gdtku''ceewo wrcvkqp 'y knif getgcug''y g''urkr '' tgukuvcpeg''qh''y g''ewtd/tcor ''uwthceg0
Vtcpukkqpu'htqo 'tco ru'\q'i wvgt" cpf 'uvtggvu'uj qwrf 'dg'hrwuj 'cpf 'htgg" qh'ngxgriej cpi gu0	O cpgwxgtkpi "qxgt"cp{"xgtvkecn"tkug"uwej "cu"hkru"cpf" fghgevu"ecp"ecwug"y jggnejckt"wugtu"vq"rtqrgn"hqtyctf" y jgp"y jggnu"jkv"vjku"dcttkgt0
Crki p''y g''ewtd/tcor ''y ky ''y g'' etquuy cm''uq''y gtg''ku''c''uvtcki j v'' r cy ''qh''tcxgrihtqo ''y g''qr ''qh''y g'' tcor ''y g''egpvgt''qh'y g''tqcfy c{'' vq''y g''ewtd/tcor ''qp''y g''qy gt''ukf g0	Y j gtg''ewtd/tco r u''ecp''dg''cj gcf .'r gqr ng''wukpi " y j ggnej cktu''qhygp''dwknf ''wr ''o qo gpwo ''kp''y g''etquuy cmi' kp''qtf gt''vq''i gv''wr ''y g''ewtd/tco r ''i tcf g''*Kg0''y g{ ''\$vcng''c'' twp''cv'k&&+0Vj ku''crki po gpv'o c{ ''dg''wughwi'hqt''r gqr ng'y ky '' xkukqp''ko r ckto gpw0
Rtqxkf g"engctn{ "f ghkpgf "cpf "gcukn{ " kf gpvkhkgf "gf i gu"qh'vj g"tco r 'vq" eqpvtcuv'y ky "vj g"ukf gy cm0	Engetn("f ghkpgf"gf i gu"cuukuv'wugtu"y kj "xkukqp" korcktogpvu'vq"kf gpvkh{"yjg"rtgugpeg"qh"yjg"tcor"yjgp"kv" ku"crrtqcejgf"htqo"yjg"ukfg0

RTQY CI 'õku'ý g'ewttgpvn{ 'tgeqo o gpf gf 'dguv'r tcevkegu."cpf 'ecp''dg''eqpukf gtgf 'ý g''uvcvg''qh'ý g r tcevkeg'ý cv'eqwrf ''dg''hqmqy gf 'hqt''ctgcu''pqv'hwm{ ''cf f tguugf ''d{ ''ý g''r tgugpv'CF CCI ''uvcpf ctf u \*Kungt."4228+06+

 $\label{eq:constraint} Ewtd/Tco\ r\ 'V\{r\ gu'kp'F\ guki\ pkpi\ 'Ukf\ gy\ cmu'cpf\ 'Vtcknu'hqt'Ceeguu.\ 'Rctv'KKDguv'Rtcevkegu'F\ guki\ p''\ I\ wkf\ g$ 

F guki pkpi "Ukf gy cmu"cpf "Vtcku"hqt 'Ceeguu. "Rctv"K&Dguv'Rtcevkegu"F guki p'I vkf g."c"tgeqo o gpf gf " tguqwteg"hkuvgf "qp"yj g"HJ Y Cøu"Qhhkeg"qh"Rncppkpi. "Gpxktqpo gpv."( "Tgcnv{"y gdukvg."kf gpvkhkgu"yj g" v{r gu"qh"ewtd/tco r u"yj cv"ecp"dg"kpuvcmgf 0





Rgtr gpf lewret

Rgtr gpf kewret "ewtd/tco r u"ctg"r gtr gpf kewret "\q"\y g"ewtd0' I gpgtcm{."wugtu"y km"cnq"dg"\tcxgrkpi "r gtr gpf kewret "\q" xgj kewret "\tchhke"y j gp"\y g{"gpvgt"\y g"uvtggv'cv'\y g"dqvqo "qh"\y g" tco r ."y j kej "o cmgu"kv"gcukgt "hqt "f tkxgtu"\q"ugg"\y g"r gf guvtkcpu"cu" y g{ "etquu"\y g"uvtggvORgtr gpf kewret "ewtd/tco r u"ctg"dguv'uvkkgf " hqt '\ki j v'tcf kwu"eqtpgtu="y j gp"\y ku"ku'\y g"ecug."r gf guvtkcpu"j cxg"c" uvtcki j v'r cy "qh"\tcxgnlcnki pgf "y ky "\y g"etquuy cm0'Vj g{"ctg"cnq" cv'cp"gzr gevgf "nqecvkqp"hqt"dnkpf "r gf guvtkcpu0'Ugr ctcvg"ewtd/ tco r u"ctg"r tghgttgf ="j qy gxgt."kpucmkpi "\y q"r gtr gpf kewret" ewtd/tco r u"cv'cp"kpvgtugevkqp"eqo r ctgf "\q"c"ukpi mg"f kci qpcn"

ewtd/tco r 'tgs vktgu'c'ukf gy cmi'eqttkf qt 'y cv'ku'y kf g"gpqwi j " vq"eqpvckp'dqyj 'y g"ewtd/tco r "cpf "c'6øz6ø'ngxgnincpf kpi " \*DgpghkekcniF guki pu. 'Kpe0'Lwrkg'D0'Mktuej dcwo. 'Rgvgt "Y 0' Czgnuqp. 'Rcvtkekc'G0'Nqpi o wkt. 'Mcy nggp'O 0'O kur ci gn" Lwrkg'C0'Uvgkp. '4223+0

F kci qpcn

C'f kci qpcn'ewtd/tco r 'ku'c''ukpi rg'tco r 'y j kej ''ugtxgu''y q'' f ktgevgf ''qh''o qxgo gpv0F kci qpcn'ewtd/tco r u'uj qwf ''dg'' kpuvcngf ''cu''c''ncuv'tguqtv''qr vkqp''\*\*QF QV+.''4238=**''R**P F QV.''p0f 0='' O ctngukpq'( ''Dctnqy .''4229=**''**RgppF QV.''4237=**''WU0**Ceeguu'Dqctf.''

4233+0Rgf guvtkcpu'ctg'r w/kpvq'cp"ctgc"qh"eqphrkev'y kj "o qvqtkuvu'y j q" ctg"vtcxgrkpi "uvtcki j v'qt"wvtpkpi 0Cu"c"tguvuv."y j ggnej cktu"wugtu"o wuv" o cng"cp"gz vtc"wvtp"cpf "drkpf "r gf guvtkcpu"o ki j v'o kuvcng"c"f kci qpcn'ewtd/ tco r "hqt"c"r gtr gpf kewrct"qpg."vj wu'vtcxgrkpi "kpvq"vj g"o kf f ng"qh" kpvgtugevkqpu0

#### Rctcrrgn

Retempn'ewtd/tco r u"ctg"r etempn'q"y g"xgj kewnet"r cyj "qh"vtexgn'qp" y g"cf leegpv'uvtggv'cpf "\q"y g"wugtøu"r cyj "qh"vtexgn'qp"y g" ukf gy cm0Vj g{ "tgs wktg"o kpko cn'tki j v qh'y c{."uq"y g{ "ctg'kf gcn" hqt"pettqy "ukf gy cmn0Vj g{ "eep"cnuq"dg"gcukn{"ngpi y gpgf "\q" eqo r gpucvg"hqt"uvggr "vgttekpu"qt"j ki j "ewtdu0Vj g{ "enq"f q"pqv" tgs wktg"cp{ "wutpkpi "qt"o epgwxgtkpi "qp"y g'tco r "kugth"epf "ctg" engetn{"f ghkpgf "hqt"r gqr ng"y kj "xkuven'ko r ekto gpu0J qy gxgt." y g{ "f q'tgs wktg'r gf guvtkepu'\q"pgi qvkevg"ugxgten'unqr g"ej epi gu'kp" c'uj qtv'f kuvepeg"y j gp"4"r etempn'teo r u"etg"wugf "qp"y j gp"f guki pkpi 0





Eqo dkpcvkqp Eqo dkpcvkqp"ewtd/tco r u"ctg"c"eqo dkpcvkqp"qhi'yj g" r gtr gpf kewrct"cpf 'r ctcmgnif guki pu0'Vj gug"ewtd/tco r u" ctg"gzegmgpv'hqt"ko r tqxkpi "ceeguu"kp"ej cmgpi kpi " ukwcvkqpu. "uwej "cu"c"pcttqy "ukf gy cmi'qt"uvggr "i tcf g0' Vj g{ 'r tqxkf g"yj g"dgpghku"qhi'dqvj "yj g"r gtr gpf kewrct" cpf 'r ctcmgn'ewtd/tco r u. "cnki pgf "y kyj "etquuy cmi'cpf " etquukpi "f ktgevkqp. "ngxgn'o cpgwxgtkpi "cv'yj g"\qr "cpf " dqwqo "qh'yj g"tco r u. "cpf "cf gs wcvg"f tckpci g"hqt'y cvgt" cpf 'f gdtku0'Eqo dkpgf "ewtd"tco r u'tgs wktg"o qtg"ur ceg" yj cp"c"r ctcmgnlewtd/tco r "cmpg0 Dngpf gf "Vtcpukkqpu

Dıgpf gf "Vtcpukklqpu'i tcf wcm{ 'nqy gt 'y g''ıgxgn'qh''y g''ukf gy cmm'y tqwi j ''cp''cro quv'wpf gygevcdıg'' ej cpi g'kp''uqr g.''q''o ggv'y g'' tcf g''qh''y g''uvtggv0D{ ''f ghlpkklqp.''dıgpf gf ''tcpukklqpu'f q''pqv'j cxg'' uqr gu'kp''gzeguu'qh'7' 0F gr tguugf ''eqtpgtu''ctg''qhygp''f guki pgf ''cu''cp''gzr cpf gf ''f kci qpcn'ewtd/tco r '' y cv''gz ygpf u''ctqwpf ''y g''gpyktg''eqtpgt''cv'y g''kpygtugevkqp0'Kp''cf f kklqp.''c''f geqtcvkxg''r cwgtp''ku''qhygp'' wugf ''kp''f qy pyqy p''wtdcp''ctgcu''yq ''xkuwcm{ ''dngpf ''y g''ukf gy cmi'cpf ''y g''uvtggv.''i kklpi ''y g''ghhgev'qh'' qpg''uo qqyj ''r cy y c{0Cu''c''tguwuv.''kv'ku'o wej ''o qtg''f khhewn/'hqt ''xkuwcm{ ''ko r cktgf ''r gf guvtkcpu''y f gygev'y g''dqwpf ct{ ''dgw ggp''y g''ukf gy cmi'cpf ''y g''uvtggv0'Vtwemu''cpf ''o qvqtkuvu'o c{ ''cnuq''t{ ''yq'' o cng''ki j ygt 'wtpu'd{ ''f tkxlpi ''qp''y g''ukf gy cmm'y j kej ''ku''gz vtgo gn{ ''f cpi gtqwu''hqt''cmi'r gf guvtkcpu0

### F guki p'Ej cmgpi gu'cpf 'T geqo o gpf cvkqpu

Vj g''ewtd/tco r ''o wuv'dg'f guki pgf ''vq''o ggv''y g''gzkuvkpi ''vqr qi tcr j kecn'cpf ''r j {ukecn'eqpuvtckpvu.''cpf '' y g''tgs wktgo gpvu'hqt ''ewtd/tco r ''unqr g. ''etquu''unqr g. ''ncpf kpi u. ''cpf ''eqppgevkqp''vq''y g''uvtggv0' Cngtkpi ''qpg'f ko gpukqp''vq''o cng''kv'CFC''eqo r ncpv'eqwrf ''ecwug''cpqvj gt'f ko gpukqp''vq''dg''qwv'qhi'' ur ge. ''cpf ''pqv'o ggv'qpg''qt''o qtg''i kxgp''ur gekhecvkqpu0

Vj g''wug''qhi'gpi kpggtkpi ''lwf i o gpv'o wuv'dg'ko r ngo gpvgf 'y j gp''y gtg''ctg''uki pkhecpv'eqpuvtckpu''y cv'' r tgugpv'f guki p''ej cmgpi gu0Hqt'kpuvcpeg.''tco r u''y cv'j cxg''4''qt''5' hgcwutgu''urki j w( ''qw''qh'' eqo r ncpeg'o c{ ''dg''c''o qtg'hcxqtcdng''f guki p''eqo r ctgf ''q''c''f guki p''y cv''qpn{ ''j cu''qpg''hgcwutg''y cv'' ku''gz vtgo gn{ ''qw''qh''eqo r ncpeg0'Cngtpcvkxg''f guki pu''ecp''dg''o qf khgf ''cpf ''cr r tqxgf ''vq''etgcvg''c''' o qtg''uwkxcdng''f guki p0

Vq'ko r tqxg"gpi kpggtkpi "lwf i go gpv'y g"WUUCeeguu'Dqctf "gpeqwtci gu'gpi kpggtu'\q'uggm'qr kpkqpu" cpf "tgeqo o gpf cvkqpu'htqo "r gqr m"y kj "f kucdktkkgu"cpf "q"uj ctg"kf gcu"cpf "uqnwkqpu'y kj "kpf wut { " r ggtu0Ucc { kpi "qr gp/o kpf gf '\q'pqp/vtcf kkqpcn'uqnwkqpu'y km'dgwgt "gpcdm"y go "\q"etgcvg"c" f guki p'yj cv'dcmpegu'yj g"pggf u'qh"cm'wugtu<'r gqr m'y j q"wug'y j ggnej cktu."r gqr m'y j q"j cxg"xkukqp" ko r ckto gpvu."cpf "qy gt"r gf guttkcpu."{ qwpi "cpf "qn 0F qewo gpvkpi "cm'cpcn{ uku'y qtm"hkpf kpi u." cpf "f gekukqpu'y km'o cmg"kv'gcukgt"\q"uy kej "dgw ggp"qt"eqo dkpg"kf gcu."cu'y gmicu'f ghgpf 'yj g'hqcn" uqnwkqp0õVj gtg'y km'cny c { u'dg'uqo gqpg'y kj "c'ugeqpf "qr kpkqp"qt"c'dgwgt 'f guki p'uqnwkqp0' J qy gxgt."kh'y g"ueqr g"qh'y g"r tqlgev'ku'engctn{ 'f gekpgf."tgugctej 'ku'cf gs wcyg."cpf 'yj g"o gy qf "qh" ugngevkpi 'y g"r tghgttgf "cngtpcvkxg"ku'engctn{ 'f gekpgf."tgugctej 'ku'cf gs wcyg."cpf 'y g"o gy qf "qh" ugngevkpi 'y g"f guki pgtøu'tgur qpukdktw{ '\q"f gxgmr 'yj g"gzr gtvkug"pggf gf '\q"gxcmvcy"r qygvkcn' cmgtpcvkxgu'dghtg"eqphto kpi "cp"gpi kpggtkpi 'uqnwkqp"\*O ctngukpq'( 'Dctmy ."4229+66 Kp''y g''uco g''r wdnkecvkqp''tghgtgpegf ''cdqxg''/ 'Ceeguukdng''Rwdnke''Tki j w/qh/Y c{ ''Rncppkpi ''cpf '' F guki pkpi 'hqt''Cngtcvkqp. ''y g''Ceeguu'Dqctf ''hkuvi'y gpv{/pkpg''eqo o qp''r tqdrgo u''cpf ''r tqr qugu'' ceeguukdng''uqnwkqpu0'Vj g''ecug''uwf kgu''ctg''f kxkf gf ''kpvq''hkxg''ecvgi qt kgu<'rko ksgf 'tki j v'qh'y c{.'' cdqxg/i tqwpf ''qduvtwevkqpu.''r wuj ''dwwqpu''ctg''pqv''ceeguukdng.''gzeguukxg''tqcf y c{ ''unqr g.''cpf '' wpf gti tqwpf ''qduvcengu0'Vy gpv{/hkxg''ugr ctcvg''gzco r ngu''qh''ewtd/tco r ''f guki pu''hqt''32''hqqv'cpf ''52/'' hqqv'tcf kwu'tgwtpu''ctg''cnq''kpenwf gf 0

F guki p"gzco r ngu"ctg"c'tgewttkpi 'ý go g'ý tqwi j qwv'ý g"hkgtcwtg"tgxkgy gf 0D{ "ngctpkpi 'htqo "ecug" uwwf kgu."gpi kpggtu"gzr cpf 'ý gkt "dqf { "qh"npqy ngf i g."o cmkpi "ý go "dgwgt"gs wkr r gf '\q"qxgteqo g" tgcn/y qtrf "f guki p"ej cmgpi gu'ý cv'ý g{ "o c{ "pqv'j cxg"r gtuqpcm{ "gpeqwpvgtgf "dghqtg0 Cnj qwi j 'ý g"Wpkxgtukx{ "qh"Rkwudwti j øu"ewtd/tco r "kpur gevkqp"u{ugo "\*EKU+"o c{ "pqv'j cxg"f ktgev" cr r nkecvkqpu"kp 'ý g"f ko gpukqpcn"cpf "nqecvkqp"f gekukqpu'ý cv'f guki pgtu"o wuv'o cmg. 'ý g"EKU'j cu" r qvgpvkcn'\q"kpetgcug'ý g"ghhekgpe{ "cpf "ceewtce{ "qh"r tgnko kpct{ "vqr qi tcr j ke"uwtxg{ kpi 0'Vj ku'y km" dg"f kuewugf 'y ký "eqpvtcevqtu"f wtkpi "Vcunt8"qh"RKVV"Y Q/370 Dkdnkqi ter j {

- \*QFQV+: "V0I 0\*4238+0F guki p"qh"CFC"Ewtd/tco r u0Tgvtkgxgf "htqo <u>j wr u<1ly y y 0f q<0xcvg0qj 0xu1F kxkukqpu1Rrcppkpi 1NqecnRtqi tco u1NVCR1CFCaEqwtugaO cvgtk</u>" cnuaP qxgo dgta42381F guki p"qh"CFC"Ewtd/tco r u"/"42380 f h
- CCUJ VQ0\*4233+0C "Rqnle{ "qp"I gqo gxtle"F guli p"qh"J ki j y c{u"cpf "Utggu0 j wr u $\leq$ If qlQti 1320824; 14226IE224583
- Dctf gp'x0'Ekx{ "qh"Ucetco gpvq'\*4224+0Tgvtkgxgf 'htqo "j\_wru<br/>ly y y @kx{ qhucetco gpvq(lqti 1/"<br/>
  <br/>
  lo gf kc lEqtr qtcvg1Hkrgu1J T1F kxkukqpu1QET1CFC1Dctf gp1Dctf gp/P kpvj /Ektewkv/"<br/>
  <br/>
  Qr kpkqp0t f hArc? gp
- Dgpghkekcn<sup>T</sup>F guki pu. "Kpe0"Lwdg"D0'Mktuej dcwo. "Rgvgt "Y 0Czgnuqp. "Rcvtlekc"G0Nqpi o wkt. "Mcvj nggp" O 0'O kur ci gn "Lwdg"C0'Uvgkp. 'F 0'C0[\_0\*4223+0'F guki pkpi "Ukf gy cmu"cpf "Vtckui'hqt"Ceeguu" Rctv'lKk'qh"KK'Dguv'Rtcevkegu'F guki p'I\_wkf g0'T gvtkgxgf "htqo <u>j wru<lly y 0 hj y c0f qv0 qx lgpxktqpo gpvldke { engar gf guvtkcp lr wdnlecvkqpulukf gy cm4 leqpvgpu</u>0' elio
- Dwuj gm 'C0O 0'c. 'Rqqrg. 'D0'Y 0'\ gi ggt. 'E0X.'( 'Tqftki wg|.'F0'c0\*4235+0'Equvu'hqt'Rgfguvtkcp" cpf 'Dke{erkuv'Kphtcuvtwewtg'Kortqxgogpvu0'Ej crgn'J km<'WPE''J ki j y c{''Uchgv{'Tgugctej '' Egpvgt0Tgvtkgxgf 'htqo '<u>j wr⊲ly y y 0 gfdkngkphq0qti leo ulfqy prqcfu1Eqwpvgto gcuwtg</u>'' Equvua TgrqtvaPqx42350 fh
- $\label{eq:hermitical_states} \begin{aligned} & \texttt{Ht} \texttt{engt}. \texttt{`F 0*3}; \texttt{; 7+0WU0Uc} \texttt{`u'Ewtd'Ewu'Ctg'Ekx} \texttt{'Gzr gpug0Tgvt} \texttt{gxgf'ht} \texttt{qo} \\ & \texttt{j wr <lctw} \texttt{enge} \texttt{o} \texttt{ ecm} \texttt{eqo 13}; \texttt{; 7/24/48 lpgy u1523}: \texttt{; 99a3artqr gtv} \texttt{/qy pgtu/tcor u/eqtpgt} \end{aligned}$
- I wo cp. 'F 0<sup>&</sup>4239. 'Cr tki'39+0Ugcwrg'o c{'j cxg'\q'ur gpf 'o krikqpu'o crikpi 'ukf gy cmu'o qtg'' ceeguukdrg'\q'r gqr rg'y kj 'f kucdkikkgu0Ugcwrg'Vko gu.'r 040Tgxtgxgf 'htqo '' <u>j wr u<1y y y 0ugcwrg\ko gu0eqo lugcwrg/pgy ul\tcpur qt\c\kqp lugcwrg/o c{/j cxg/\q/ur gpf/''</u> <u>o krikqpu/o crikpi /ukf gy cmu/o qtg/ceeguukdrg1</u>
- IP F QV0\*pff 0#0F guki pkpi 'Rgf guvtkcp''Hcekrkskgu'hqt 'Ceeguukdkrks{ 'O qf wrg'8'RTQY CI <T528 Ceeguukdrg''Rgf guvtkcp''Uki pcnt0Tgvtkgxgf 'htqo j wr ⊲lly y y 0x00 qx lkof qyllstrguIF RHCO qf wrg5EwtdTco r uDrgpf gf VtcpukskqpuP S (RF H
- Kungt. "HDF 0\*4228+0'Uwdlgev<'KP HQTO CVKQP <'Rwdnke'Tki j w/qh/Y c{'Ceeguu'Cf xkuqt{0 Y cuj kpi vqp. 'F (E0c'Hgf gtcn'J ki j y c{'Cf o kpkuvtcvkqp0'Tgvtkgxgf 'htqo j wr u<1y y y 0h y cff qv0 qx lgpxktqpo gpvldke{engar gf guvtkcp ltguqwtegulr ty cc0elio
- Nco d. 'O 0'Cof gtuqp.'F 0'Y 0'Mkppg{.'C0'P qxcm'I 0'( 'Mj cf go .'L0\*4233-0'F gr ctvo gpv'qh'' Ekk{ 'Rrcppkpi 'Co gtkecpu'y kj 'F kucdktkkgu'Cev'Eqo r tkcpv'Rtqi tco 0'Rkxudwti j 0'T gvtkgxgf '' htqo 'j wr <lcr r u0 kwudwti j r c0 qx leq IF ERaCF CaEqo r tkcpegaRtqi tco aHgdtwct{a42330 f fh
- Ncy uwky < Ej leci q'licktopi 'f kucdrgf 'tgukf gpw0<sup>\*4</sup>227.'Qevqdgt'6+0'Ej leci q'Vtkdwpg0Tgvtkgxgf 'htqo '' <u>j wr < lictvkergulej leci qvtkdwpgleqo 14227/32/261pgy u127322624; 3a3af kucdrgf/ceeguukdrg/</u>'' <u>ekk{/o c{qt/f crg{</u>}}
- O cj. 'P 0<sup>k</sup>4238+0E wtd/tco r 'F guki p <P qv'cu'Uko r mg'cu'kv'Uggo u0T gvtkgxgf 'htqo j wr ⊲luf qvdnqi 0ugcwng0 qx 14238127125 lewtd/tco r/f guki p/pq√cu/uko r mg/cu/kv/uggo u1
- O ctngukpq.'IO''( 'Dctmy .'IO\*4229+0Ceeguukdng'Rwdnke'Tki j w/qh/Y c{'Rrcppkpi ''cpf 'F guki pkpi '' hqt'Cngtcvkqp0Ceeguu.'\*Lwn{+0
- O epct {.''W\*4237.'Cr tkn/0NC''\q''r c {''&'3'06''dkmkqp''kp''ukf gy cmi'tgr cktu''ugwrkpi ''CF C''rcy uwk0' Uqwj gtp'Ecrkhqtpkc'Rwdrke'Tcf kq0Tgvtkgxgf 'htqo j wr u⊲lly y y 0uer t0qti lpgy ul42371261231729491n'c/vq/r c {/3/6/dkmkqp/kp/ukf gy cmi'tgr cktu/'' ugwrkp1

- P cvkqpcn'Cuuqekcvkqp''qh'Ekx{ "Vtcpur qtv'Qhhkekcn:0\*4238+0'Vwtp'Tcfkt0'Kp''Vtcpukv'Uvtggv'F guki p'' I vkfg0'Y cuj kpi vqp. "F (E 0."Kurcpf "Rtguu0Tgvtkgxgf 'htqo "j wr <<u>lpcevq0qti lr wdrkecvkqp1wtdcp/</u>" uvtggv/f guki p/i vkfg1uvtggv/f guki p/grgo gpvu1vtcpukv/uvtggvu1dwu/uvqru1
- RgppFQV0\*4237+0Rwdnlecvkqp'35O <F guki p'O cpwcn'Rctv'4'\*O ctej ''4237+0J cttkudwti <'' RgppFQV0
- RgppFQV0\*4232+0Rwdnlecvkqp'94O <Tqcfyc{'Eqput wevkqp'\*TE+'Ucpfctfu'\*Lwpg'4232+0' J cttkudwti <'RgppFQV0
- WU0Ceeguu'Dqctf 0\*4224+0Co gtkecpu'y kj 'F kucdkrkkgu'Cev'\*CFC+'ceeguukdkrkk{ 'i wkf grkpgu'hqt'' dwkrf kpi u'cpf 'hcekrkkgu='r rc{ 'ctgcu0Ctej kgewtcn'cpf 'Vtcpur qtvcvkqp'Dcttkgtu'Eqo r rkcpeg'' Dqctf 0'Hkpcn'twrg0Hgf gtcn'Tgi kuvgt '\*Xqr087+0
- WUU)Ceeguu'Dqctf 0\*4233+0/Ceeguukdkrk{ 'I wkf grkpgu'hqt'Rgf guvtkcp'Hcekrkkgu'kp'y g'Rwdrke''Tki j √ qh'Y c{058'EHT'Rctv'33; 2'\*Xqr098+0/Tgvtkgxgf 'htqo '<u>j wr u<lty y @eeguu/</u>'' dqctf 0 qx li wkf grkpgu/cpf/uvcpf ctf uluvtggw/ukf gy cmulr wdrke/tki j w/qh'y c{ lr tqr qugf/tki j w/ qh'y c{/i wkf grkpgu
- WU0F gr ctvo gpv'qh'Lwuvleg0\*4232+04232'CFC''Uvcpf ctfu'hqt'Ceeguuldug'F guli p0'Tgvtlgxgf''hqo'' j wr u<br/>dly y y 0cfc0 qx ltgi u42324232CFCUvcpf ctfu4232CFCUvcpf ctfu0 fh
- WU0F gr ctvo gpv'qh'Lxuvleg."( "Hgf gtcn'J ki j y c{ 'Cf o kpkntcvkqp0\*4235+0F gr ctvo gpv'qh" Lxuvleg IF gr ctvo gpv'qh"Vtcpur qtvcvkqp"Iqkpv'Vgej pkecn'Cuukuvcpeg"qp"y g"Vkxg"KKqh"y g" Co gtkecpu'y kj 'F kucdkrkkgu'Cev'Tgs vktgo gpvu'vq"Rtqxkf g'Evtd/tco r u'y j gp"Utggvu."Tqcf u." qt 'J ki j y c{u'ctg'Cngtgf 'y tqwi j 'Tguvthcekpi 0Tgvtkgxgf "Ugr vgo dgt"3."423: .'htqo " j wr u<ly y y 0 j y cff qv0 qx lekxktki j wlr tqi tco ulf qlahj y cavc0eho

#### Crrgpf kz'H

#### Vcum/8'Eqpf wev'c'P ggf u'Cuuguuo gpv'hqt''y g'Ewtd/Tcor 'F guki p'Rtqeguu

#### Kpvt qf wevkqp

Vcum'8'hqewugu'qp'f qewo gpvkpi ''y g'kphqto cvkqp'i cy gtgf 'htqo 'kpvgtxkgy u'y kj ''ewtd/tco r '' f guki p''gpi kpggtu''cpf ''eqpvtcevqtu0Ugxgtcn'kpf wuxt { ''r tqhguukqpcm''y gtg''kpvgtxkgy gf 'tgi ctf kpi ''y gkt '' gzr gtkgpegu''cpf ''y g'hqmqy kpi 'f qewo gpv'ku''dcugf ''qp''hkpf kpi u'htqo ''y gkt ''gur qpugu0Vj gug'' kpvgtxkgy u'hqewu''qp''j qy ''wughwrl'y g''Ewtd''Kpur gevkqpu''U{ urgo '\*EKU+'f gxkeg''y qwrf ''dg'kp''y g''f guki p'' r tqeguu''cpf ''r quv'eqputwevkqp''gxcnxcvkqp0'Vj g''pvgtxkgy u'kpenwf g''y g''f kuewukqpu''qh''ewtd''' tco r ''f guki p.''eqputwevkqp''r tqeguugu ''cpf ''f gyckri'y g''j ctf uj kr u''gpi kpggtu''cpf ''eqpvtcevqtu''gpeqwpvgt'' kp''y g''hkgrf 0'Ncum{.''y g''kpvgtxkgy ggu''ctg''cumgf ''cdqwi''y g''tqmg''y g''EKU'f gxkeg''o c{ ''r m{ ''kp''dqy' ''y g'' f guki p''r tqeguu''cpf ''r quv'eqputwevkqp''r tqeguu0

#### Dceni t qwpf

Y j gp"cp"cngtcvkqp"vq"ý g"tqcf y c{"ku"r gthqto gf."uwej "cu"tguwtheekpi."ý g"f gr ctvo gpv" kf gpvkhlgu"pqp/eqo r nkcpv"gz kuvkpi "CF C"tco r u"cpf"wr i tcf gu"ý g"gz kuvkpi "CF C"tco r u"vq"ewttgpv" uvcpf ctf u0Vj ku"r tqeguu"o c{"dg"f qpg"ý tqwi j "f guki p"kp"cf xcpeg"cpf "kpenvf gf "kp"ý g"eqpvtcev" r rcpu"qt"kpeqtr qtcvgf "kp"c"f guki p klvkuf "kgo 0'Ki"ý g"r tqeguu"ku"r gthqto gf "wukpi "c"f guki p klvkuf " kgo ."ý g"eqpvtcevqt"j ktgu"cp"gpi kpggt"vq"eqo r ngvg"ý g"uvtxg{kpi "cpf"f guki p"qh"ý g"r tqr qugf " tco r u"cv"ý g"nqcvkqpu"kf gpvkhlgf "kp"ý g"eqpvtcev" rcpu0'Vj g"gpi kpggt"ý gp"uvdo ku"ý gkt"f guki pu'vq" ý g"f gr ctvo gpvú"CF C"eqo o kwgg"hqt"tgxkgy 0'Vj g"eqo o kwgg"ecp"gkj gt"ceegr v'ý g"r tqr qugf " r mpu"qt"o cng"eqo o gpvu"hqt"tgxkukqpu"vq"ý g"r ncpu0'Ki"c" ncp"ecppqv'o ggv"ý g"evttgpv"uvcpf ctf u"hqt" cp{"f ko gpukqpu"qt"i tcf gu."ý g{"pggf "vq"uvdo kv"c"Vgej pkecm{"Kphgcukdng"Hqto "%VKH+"qwvhpkpi "ý g" tgcuqpu"ý cv"c"tco r "ecppqv'dg"dwkuv"q"ý g"cuukuvcpv"F kuvtkev'Gpi kpggt"ó" F guki p"qt"o cnngu" eqo o gpvu"cu"q"tgs wktgf "tgxkukqpu0'Qpeg"cp"cr r tqxgf "f guki p"ku"cej kgxgf ."ý g"eqpvtcevt"ecp" dgi kp"tgo qxcn"qh'ý g"gy qwrf"dg"cdng"vq"o gcuvtg"ý g"hpcnli tcf gu"cpf "f kuvcpegu"kp"ý g"cu" eqpuvtweyf"tco r 0

Cm'cngtcvkqp''v{r g'r tqlgevu'o wuv'cuuguu'r gf guvtkcp''pggf u'cpf 'o wuv'ko r tqxg. ''qt''wr i tcf g'' cngtgf ''gz kuvkpi ''hcektvkgu''q''y g''ncvguv'uvcpf ctf u0'Y j gtg''gz kuvkpi ''ukg''eqpuvtckpvu'nko kv'y g''cdktvk{ ''q'' hwm{ ''o ggv'y g''ncvguv'uvcpf ctf u ''y g''ko r tqxgo gpvu''qt''wr i tcf gu'o wuv'dg'f qpg''q''r tqxkf g''ceeguu''q'' y g''o czko wo ''gz vgpv'hgcukdng''y kj kp''y g''ueqr g''qt''nko ku''qh''y g''f guki pcvgf ''r tqlgev0'Vj gtghqtg.'' gz kuvkpi ''tco r u'y j cv'f q''pqv'o ggv'ewttgpv'uvcpf ctf u'cpf ''c''VKHj cu'pqv'dggp''cr r tqxgf ''ctg''kf gpvkhgf '' cu''pqp/eqo r nkcpv0T co r u'y j kej ''ctg''gky gt <\*3+''cdng''q''dg''f guki pgf ''cpf ''eqpuvtwevgf ''q''ewttgpv'' uvcpf ctf ''qt''\*4+''pqv'hwm{ ''cdng''q''o ggv'ewttgpv'uvcpf ctf u''dw''ctg''f guki pgf ''q''y g''o czko wo ''gz vgpv'' hgcukdng''cpf 'j cxg''cp''cr r tqxgf ''VKH ''ctg''eqpukf gtgf ''eqo r nkcpv0

#### Uwo o ct{

Vj gug'kpvgtxkgy u'tgxgcn'ng{ 'kphqto cvkqp"cdqwv'yj g"ewtd"tco r 'f guki p"cpf 'kpur gevkqp" r tqeguugu'htqo 'yj g"uvcngj qnf gt"cpf "eqpuvo gt"r qkpv'qh'xkgy 0P co gn{.'yj gug'kpuki j vu'f go qpuvtcvg \*3+" y g'r qygpylcnlwughwrpguu'qh'y g'EKU'lop'y g'f guli p'r tqeguu. "\*4+"y g'i gpgtcnleqpugpuwu'y cv'y g" EKU'y knildg"cr r nlecdrg'lop'y g'r quv/eqput weylqp"xgtkhlecylqp"cpf 'lour geylqp"r tqeguu. "\*5+"y g"o {tkcf " ej cmgpi gu"cuuqelcygf 'y kj 'y g"eqo r ngz 'r tqeguu'qh"CF C/eqo r nlcpv'ewtd'tco r 'f guli p. "cpf '\*6+'y g" xctlqwu'o gy qf u'd{ 'y j lej 'uwtxg{kpi 'ku'eqo r ngyf "cmpi 'y kj 'y gkt 'tgur geylxg"cf xcpvci gu'cpf " f kucf xcpvci gu0Gcej 'qh'y gug'louki j wi'tgngxcpv'yq"EKU'f gxgnqr o gpv'cpf 'wughwrpguu'lop'y g'hlgnf "ctg" f kuewuugf 'lop'f gycki'dgny 0

Vj g'hqmqy kpi 's wguvkqpu'y gtg'cf f tguugf 'kp'y g'kpvgtxkgy 'vq'dgwgt'wpf gtuvcpf 'y g'' eqpuvtwevkqp'cpf 'tgeqpuvtwevkqp'r tqeguu'hqt'CFC/eqo r nkcpv'ewtd/tco r u='y g''eqpvgzv'qhi'gcej 'mg{ '' kpuki j v'ku'dcugf ''qp'f kuewuukqpu'i gpgtcvgf ''d{ ''y gug''s wguvkqpu<

- É' Y j cv'ctg''y g''uvgr u'kpxqrxgf ''kp''y g''r tqeguu''vq''f guki p''c''ewtd''tco r A
- É' Y j cv'ctg''uqo g''qh''y g''ej cmgpi gu''{qw'hceg''cv''y g''ewtd''tco r ''ukyA
- É Y j cv'ctg''uqo g''qh''y g''ej cmppi gu''{qw'hceg''y kj ''f cvc''eqmgevkqp''qp''ewtd/tcor " o gcuwtgo gpvuA
- É' Y j cv'ctg''uqo g''ej cmgpi gu''{qw'hceg''y ky ''ewtd/tco r ''f guki pA
- É' Y j cv'ku'kpxqnxgf 'kp'uwtxg{kpi "c'ukkg'hqt"dwkrf kpi "c'ewtd/tco r A
- $\acute{E}'$  Y j kej "o gyj qf u"qh'uwt xg{kpi "f q"{qw'r tghgt "cpf "y j {A
- $\acute{E}$  Y j cv'ku''y g'r tqeguu'hqt "ewtd/tcor" tgeqput wevkqp'kh'pggf gf A
- $\acute{E}'$  Y j cv'vqqnı'cpf 'uqhy ctg'f q''{qw'ewttgpvn{ 'wugA}
- É' Kp'y j cv'y c $\{u'ecp''y g'EKU'hcekrkscvg''y g'f guki p'cpf''gxcnxcvkqp'r tqeguuA$
- É' Y qwrf "c'f cvcdcug"qh'r tkqt "EKU"kpur gevkqp'f cvc"dg'j grr hwn'nqpi /vgto A'J qy A

Dcugf ''qp''y g'tgur qpugu''qh'y g'kpvgtxkgy ggu. 'y gug''s wguvkqpu''qhygp''ngf ''q''xct { kpi ''ngxgnu''qh'' hqmqy /wr ''s wguvkqpu''cpf 'f kuewuukqpu''y j kej ''cnnq''eqpvtkdwgf ''q''y ku'tgr qtv0Kp''cf f kkqp.'' kpvgtxkgy ggu''qhygp''qhtgtgf ''y gkt''qy p''s wcpvkxcvkxg''guvko cvgu''qh''y gkt''r gtuqpcn'gzr gtkgpegu'kp''y gkt { gctu''qh''ewtd'tco r 'f guki p''cpf ''eqpvtcevkpi ''gzr gtkgpeg0'Vj gug''hki wtgu''ecp''dg''hqwpf ''kp''y g'' cr r gpf kegu''hqt''gcej ''kpf kxkf wch'kpvgtxkgy 0

### Mg{ 'EKU'Kortqxgogpv'Uwii guwkqpu

Vj g'htuv'o clqt "eqpegtp 'kpvgtxkgy ggu"gzr tguugf ''y cu'j qy ''q"echdtcvg''y g'EKU'f gxkeg" dghqtg"gcej 'o gcuwtgo gpv''q"gpuwtg'i tcf g'ceewtce{0Vj g{"cnq"gzr tguugf 'j qy ''y g'EKU'echdtcvkqp" eqwf ''dg'r ctvkewrctn{ 'r tqdngo cvke''kp'j km{ ''qt'o qwpvckpqwu"ctgcu0C'tgf guki p''uko krct''q'j qy ''tcpukx'' vkr qf u'y qtngf 'y cu'f kuewugf .''dw'cnq'c'tgy qtnkpi ''qp''y g'EKU'o gcuwtgo gpv'echdtcvkqp" y qtnhqy 'y cu'eqpukf gtgf 0Vj gtg'y gtg'cnq''eqpegtpu'cdqw'dgpej o ctnkpi ''q'c''dwddng''ngxgricv'y g'' dcug''qh'y g'f guki p='kpvgtxkgy ggu''gzr nckpgf ''y cv'r tgekukqp"cpf ''ceewtce{ ''qh'y g'o gcuwtgo gpwu'y kj '' y g'gpeqf gt ''cpf ''ceegngtqo gygt ''o wu''dg''cu'i qqf ''qt''dgwgt ''y cp''o gcuwtgo gpwi'y kj '' c''cr g''o gcuwtg'' cpf ''ngxgr0Vj wu.''y g''echdtcvkqp''r tqeguu''cpf ''y qtnhqy ''y kn'dg'ko r tqxgf ''kp''y g'pgzv'f guki p'' ksgtcvkqp0'Hqt''r qvgpvkcn'wughwpguu''kp''c''f guki p''eqpvgzv.''c''pqp/eqpvcev'o gcuwtgo gpv''cr r tqcej ''uwej '' cu''NKF CT 'y cu'f kuewugf .''dw'y ku'y cu'f ggo gf ''q'dg''cr r tqr tkcvg''hqt''c'f khngtgpv''qqn'qt''cp'' ksgtcvkqp''hwty gt ''kp''y g''hwwtg0

### Rgteglægf 'Xcnwg'qh'EKU'hqt 'Ewtd''T cor 'Kpur gevlap

Cmlkpvgtxkgy ggu'ucy "c"eqpukf gtcdng"r qvgpvkcnldgpghk/qh"vj g"EKU"f gxkeg"cu"c"xgtkhlecvkqp" cpf "kpur gevkqp"vqqn"cpf "gcej "kpvgtxkgy gg"r tqxkf gf "i tgcv"hggf dcemicdqwv'y gkt "kngu"cpf "f kukngu" qh"vj g"f gxkeg0Kpvgtxkgy ggu"hqwpf "vj g"EKU"vughwrlkp"f getgcukpi "vj g"vko g"tgs vktgf "vq"o cpvcm{" o gcuvtg"vj g"tco r u0Kpvgtxkgy ggu"cnq"cr r tgekcvgf "j qy "vj g"f cvc"y cu"cwqo cvkecm{ "cf f gf "vq"cp" qprkpg"f cvcdcug."cpf "yi cv"y tkwgp"o gcuvtgo gpv"f kf "pqv"pggf "vq"dg"tgeqtf gf "cpf "rcvgt "vtcpuetkdgf " kpvq"O ketquqhv'Gzegr0Rctvkekr cpvu"y gtg"i gpgtcm{ 'kp"ci tggo gpv"yi cv"&3.222"y cu"qp"yi g"j ki j gt "gpf " qh"y j cv"vj g{ "ctg"y knkpi "vq"r c{."y j krg"uqo g"gzr tguugf ."yi g{ "o c{ "dg"kpvgtguvgf "kp"r vtej cukpi "qpg" qt"ugxgtcnlf gxkegu0

#### RqvgpvlcnF guli p'Rj cug'Xcnvg

Kyytxky ggu'y gtg'j gukcpv'\q'kf gpvkh{ ''y g'r qygpvkcn'wughwpguu''qh'y g'E KJ'kp''y g'f guki p" r j cug."dwv'uqo g'kpf kecygf ''y cv'y g'E KJ'o c{ ''j gm ''r tkqtkkk g'ewtd'tco r u'y cv'ctg''hwt y gt''qwv'qh" eqo r nkcpeg''y cp''qy gtu01 gpgtcm{..'y g'f cvc''y cv'y g'E KJ'eqmgevu'eqwf ''dg''wughwn'kp''y g'f guki p" r j cug'kh'uvqtgf ''qxgt''ko g''kp'c'f cvcdcug0'Hqt'kpuvcpeg.''kpygtxkgy ggu'kpf kecygf ''y cv'ky'y qwf ''dg'' j ki j n{ 'f guktcdmg'kh'cmi'qhi'y g''ewtd'tco r u'kp'c''r ctvkewrct''ctgc''j cf ''y gkt''o gcuwtgo gpvu'htqo " kpur gevkqpu''ceeguukdmg''q''ewtd'tco r ''f guki pgtu'kp''c'f cvcdcug0'Vj ku''j knqtkecn'kpur gevkqp" kphqto cvkqp'y qwff ''dg''ncti gn{ ''o qtg''wughwnl'qp''cp''cuugv'o cpci go gpv'ngxgnl'cpf ''j gm ''kp''y g''' r tkqtkkk cvkqp''qh'tco r ''tgf guki pu.''tcy gt''y cp''cev'cu''c''uqwteg''qh''uwtxg{ ''f cvc''q''i wkf g''y g''ewtd''tco r '' f guki p''r tqeguu0

Vj g'kpvgtxkgy ggu'o cf g'engct 'vj cv'CF C/eqo r ncpv'ewtd'tco r 'f guki p. 'gur gekcm{ 'kp'' tgeqpuvtwevkqp''qt'tgj cdkkscvkqp'r tqlgevu. 'ku''qhvgp''pqv'uvtcki j vhqty ctf 0'Vj ku''ngf 'vq'o cp{'' eqpxgtucvkqpu''cdqwi'yj g'ko r qtvcpeg''qh''ceewtcvg. 'r tgekug. ''cpf ''cdwpf cpv'uvtxg{ 'f cvc0'Kp''eqpvtcuvkpi '' vcf kkqpcn'uvtxg{kpi ''vgi pks wgu''xgtuwu''o qtg''gzr gpukxg''cpf ''r tgekug''NKF CT''o gyj qf u.'' kpvgtxkgy ggu'i gpgtcm{ ''r tghgttgf ''NKF CT''y j gp''r quukdng. ''dwi'go r j cuk{ gf ''yj cv'vtcf kkqpcn'uvtxg{ ''ku'' qhvgp''uvkn'wugf 0'Uqo g''cnvgtpcvkxg''o gyj qf u''qhi'uvtxg{kpi ''y gtg''cnq''f kuewugf .''uvej ''cu''yj g'' eqo r krcvkqp''qhi'ko ci gu''d{ ''uqhvy ctg''kpvq''c''5F ''o cr 0'Vj ku''rj qvqi tco o gvtke''cr r tqcej ''q''uvtxg{kpi '' equf ''dg''ceeqo r nkuj gf ''yj tqwi j ''yj g''wug''qh''y g''cdngv'eqo r wgt'''KQg0'KRcf +''qp''yj g''EKU'kp'' eqplwpevkqp'y kj ''uqhvy ctg''uwej ''cu''EqpvgzvEcr wtg''htqo ''Dgpvg{ ''U{uvgo u0'Vj ku'kpuki j v'y km'dg'' hvty' gt ''kpxguvki cvgf ''kp''hwwtg'tgr qtvu. 'kpenvf kpi ''y g''r tqeguu''ctej kvgewtg''f gxgnr o gpv0

#### Eqpenvulqpu

Dcugf "qp"'y gug'kpvgtxkgy u."y g'EKU."kp"ku"gzkukpi "hqto."f qgu'pqv'r tqxkf g'uki pkhecpv' xcnvg'f wtkpi "y g'f guki p'uvci g'qh'y g'ewtd'tco r "kpuvcmcvkqp"cpf "kpur gevkqp"r tqeguu0J qy gxgt." y gtg'ku'r qvgpvkcnhqt 'EKU'wug'kp'r quv'eqpuvt wevkqp"cpf "xgtkhecvkqp"qh"ewtd'tco r "f ko gpukqpu0Kp" y g'hwwrtg."c"NKF CT/dcugf "o gcuwrgo gpv'u{uvgo "cpf "ECF "vqqnu"y qwf "dg"wughwrlcf f kkqpu'vq" j gm "vq"j gm 'uvrgco nkpg'y g'f guki p'r j cug0Hwry gto qtg."c"pqp/eqpvcev'r j qvqi tcr j ke "o gcuwrgo gpv" uqhwy ctg"eqwrf "dg"wugf "y kj "y g'qp/dqctf "vcdngv'eqo r wgt"qh'y g"EKU'vq"cff "xcnwg"vq"y g"f guki p" r j cug'd{ "r tqxkf kpi "o qtg"ceewtcvg."r tgekug."cpf "wughwrluwrxg{ "f cvc0

### Crrgpf kegu

#### Crrgpfkz'C<'Kpvgtxkgy'3

Kþvgtxkgy gg"3. "c"eqpvtcevqt"vj qwi j v'vj cv'vj g"EKU'f gxkeg"y qwrf "dg"xgt { "wughwrlkp"f guki p"cpf "r quv" ewtd"eqpuvtvevkqp"r tqeguu0'Vj g"kpvgtxkgy gg"ku"qpg"qh"o cp{ "eqo r cpkgu"vj cv'v qtm"y kj "RgppF QV" vq"cuuguu'cpf "dwkrf "ewtd/tco r u"kp"vj g"Rkvudwti j "ctgc0'Y kj "ugxgtcrl"{ gctu"qh"gzr gtkgpeg"y kj " RgppF QV"cpf "tco r "eqpuvtvevkqp."vj g"kpvgtxkgy gg"r qkpvgf "qwi'vj g"qduvcergu"vj g{ "hceg"kp"qtf gt "vq" dwkrf "cp"CFC"eqo r nkcpv"tco r 0

Vq"dgi kp. 'yj g"kpvgtxkgy gg"gzr nckpu"yj g"f guki p"cpf "eqpuvtwevkqp"r tqeguu'yj cv"RgppF QV'i qgu" yj tqwi j 0'Vj g"r tqeguu'qh'uwtxg{kpi "dgi kpu."cu"f guki p"eqpuvncpvu"ctg"ugpv'qw'd{ "gkj gt" eqpuvtwevkqp"eqo r cpkgu"qt "RgppF QV'yj go ugnxgu'vq"cuuguu'yj g"vqr qi tcr j { "qh"yj g"ukg0'Y kyj kp"72" hggv'qh'yj g"ukg."uj qw"ctg"vcngp"wukpi "c"tqxgt. 'vtcpukv'qt"I RU'u{uvgo "vq"f gxgnqr "f guki pu"cpf "cuuguu" cp{ "wpgxgp"ctgcu0Dcugf "qp"yj g"o gcuwtgo gpvu"yj g"eqpuvncpvu'y kn'etgcvg"c"f guki p"uej go cvke"qp" r cr gt "vq"uwdo kv'vq"RgppF QV'hqt"cr r tqxcn0Ceeqtf kpi "vq"yj g"kpvgtxkgy gg."cnvj qwi j "yj g"r tqeguu" o c{"uggo "gcu{ 'yj gtg"ctg"uqo g"f khhkevnkgu'yj cv'yj g{ "hceg0

Vj g'kpvgtxkgy gg'y cu'cungf 'vq''gncdqtcvg''qp''y g'crrtqzko cvg''dtgcnf qy p''qhi'pqpg."o kpqt."cpf " o clqt''ej cpi gu''pggf gf 'hqt'tgeqputvevkqp0'Vj g'kpvgtxkgy gg''pqvgf ''y cv."kp''j ku''gzrgtkgpeg."qpn{''7/ 32' "qh''tcor"eqputvevkqpu''ctg''eqornkcpv'y kj ''CFC''uvcpf ctf u'wrqp''eqorngvkqp=''72' ''pggf '' o kpqt'tgf guki p''ej cpi gu''cpf ''y g''tgo ckpkpi 062' ''tgs wktg''o clqt''kortqxgo gpvu'y j kej ''o c{ ''kpenvf g'' eqorngvg'tgeqputvevkqp0'RgppF QV''f qgu''pqv'eqxgt''cm'tgf guki p''cpf 'tgeqputvevkqp''equvu.'tcvj gt'' y qug''ej cpi gu'y kn'dg''eqxgtgf ''d{ ''y g''f guki p''qt''eqputvevkqp''eqorcp{0'Vq''cxqkf ''cp{''o clqt'' tgeqputvevkqp''equvu.''ectrgpvgtu''ctg''j ki j n{ ''tckpgf ''q''o cmg''cf lwuvo gpvu''q''gpuvtg''tcoru''ctg''dwknv'' y kj kp''CFC''uvcpf ctfu'y kj ''o kpko cn'gttqt0

Y j gp"cungf "y j gy gt"y g"EKU"y qwf "dg"wughwihqt"f guki pkpi . 'y g"kpygtxkgy gg"uwi i guvgf "y g" dgpghku"qh"y g"f gxkeg"r tkqt"yq"f go qrkkqp"y qtm"cpf "yq"ej gem"gzkuvkpi "r ctco gygtu0Ej gemkpi "y g" urqr gu"qh"hqto "y qtm"yq"ugg"ki"y g{ "o cvej "y ky "y g"f guki pu"y cu"cp"cf f kkqpcn'pggf 0Kp"ygto u"qh" r qukkxg"cwtkdwgu. "y g"hpygtxkgy gg"dgrkgxgf "y g"f gxkeg"y qwf "dg"wughwihyq"ur ggf "wr "y g"r tqeguu"qh" o gcuwtkpi "gzkuvkpi "ewtd"tco r u0Cf f kkqpcn'ecr cdkrkkgu'y cv'j g"uwi i guvgf "y qwff "dg"dgpghkekcn'ku" o gcuwtkpi "y g"ctgc"qh"y g"tco r ."cf f kpi "c"rkf ct "hqt"cp"ko ci g"qh"5F "yqr qi tcr j { "cpf "xgtkh{ kpi "hqto " y qtm"qh'y g"ukg0

Vj g'kpvgtxkgy gg'hqwpf ''y g'f gxkeg''dgpghkekon 'dwi'cu''pqvgf ''cdqxg.''uwi i guvgf ''c'hgy ''cwtkdwgu''y cv' o c{ ''j gki j vgp''y g''xcnwg''cpf ''wuci g''qhi'y g'f gxkeg0'Cnqi gy gt.''y g'hggf dcemhqt''y g''EKU'y cu'' r qukkkg''cpf ''y qwrf ''dg''xgt{ ''tgngxcpv''q''y g''f guki p''r qtvkqp''qhi'ewtd/tco r ''eqpuvtwevkqp0

### Crrgpf kz'D<'Køvgt xkgy '4

Kovetxkey gg"4."c"f guki p"gpi koget."qxgtcm'vj qwi j v'vj cv'vj g"EKU'f gxkeg"o c{"f getgcug'vj g"vko g" tgs wktgf "hqt"f guki p"d{"o cmkpi "vj g"kokkcn'hkgrf "v qtm'uko r ngt"dwi'kpf kecvgf "vj cv'vj g"ncti gt"dgpghku" y qwrf "dg"kp"vj g"r quv/eqpuvt wevkqp"kour gevkqp"r tqeguu00 qtg"ur gekhkecm{."j g"gzr nckogf "vj cv'vj g" EKU'f gxkeg'v qwrf "dg"j gr hwn'v j gp"gzco kokpi "gzkuvkpi "ewtd"tco r u"cpf "o gcuwtkpi "vj gkt"unqr gu'vq" f gvgto kog"v j gvj gt"c"v{r g"qh"tco r "o c{"uko r n{"dg"ur gekhkgf "hqt"c"eqpvtcevqt"vq"dwkrf "kpuvgcf "qh"

<sup>&</sup>lt;sup>3</sup>I gukpunk 'Iqj pcy cp0'Rgtuqpcn'Kpvgtxkgy 048'Ivn{ '423: 0

tgs wktkpi "c'hwnitgf guki p0"Vj g"kpvgtxkgy gg"cnuq"uckf "vj cv"khif cvc"i cvj gtgf "xkc"vj g"EKU'vqqnlf wtkpi " kpur gevkqpu'y cu'uvqtgf "kp"c"f cvcdcug"qhij kuvqtkecnlewtd"tco r u"o gcuvutgo gpvu."cpf "vj gkt"eqo r nkcpeg" kpur gevkqp"tgeqtf u"gzkuvgf "y kj "vj g"nqpi /vgto "vug"qhiEKU."vj gp"vj ku'y qwrf "ckf" y kj "f guki p"kp"vj g" hwwtg0

Y j krg'f guetkdlpi ''y g'f guki p''r tqeguu. ''y g''kpygtxkgy gg''gzr nckpgf ''y cv''ceewtcyg''cpf ''r tgekug'' uwtxg{kpi 'ku''ng{ ''kp''f guki pkpi ''cp''CF C/eqo r ncpv'ewtd'tco r 0'Vj g''uwtxg{kpi 'i tqwr ''cv'j ku''eqo r cp{'' wugu''c''eqo dkpcylqp''qh'5F ''uecppkpi ''y kyj ''NKF CT ''cpf ''tcf kkqpcn'uwtxg{ ''qqnu''hmg''tcpuksu. ''ngxgnu.'' o gcuwtkpi ''y j ggnu ''cpf ''cr g''o gcuwtgu0J g''cnq''uckf ''y cv.''y j gpgxgt'r quukdrg.''f guki pgtu''cwgo r v''q'' ngcxg''tqqo ''hqt''r qygpylcn''gttqt ''kp''tco r ''eqput weylqp0Dcugf ''qp''j ku''gzr gtkgpeg. ''kv'ku''pqv''xgt { eqo o qp''hqt ''gttqtu''kp''y g''kpkkcn'eqput weylqp''qh''c''ewtd''tco r ''q''f gxkcyg''htqo ''y g''f guki p''cpf ''y gp'' tgs wktg''ygctf qy p0'Kp''cf f kkqp.''j g''kpf lecygf ''y cv.''kp''j ku''r gtuqpcn''gzr gtkgpeg.''qxgt 'y tgg/s wctygtu''qh'' j ku''ewtd''tco r ''lqdu'y gtg''tgeqput weylqp''qt''tgf guki p''qh''gzkuylpi ''tco r u'tcy gt ''y cp''pgy '' eqput weylqp''dgecwug''RgppF QV''ku'j ku''o clp''enlgpv0

Kp''yto u'qh'higgf dcemi'qp''y g'EKU'r tqvqv{rg'fguki p.''y g'kpvgtxkgy gg''gzr tguugf ''eqpegtp''cdqwi'y g'' ewttgpv'kp/crr necvkqp''ecnkdtcvkqp''r tqegf wtg.''y j kej ''wugu''c''dwddrg''rgxgni'qp''y g''dcug''qh''y g'fgxkeg0' J g''gzr mkpgf ''y cv'y ku''ecnkdtcvkqp''o wuv'dg''ceewtcvg''cpf ''i kxg''eqpukuvgpv'i tcf g''ecnewncvkqpu''y kj y qug''qh'fki kcn'hgxgnu0Hwt y gt.''j g''uwi i guvgf ''y cv'c''hguu'htgs wgpv'qt''o qtg''wugt/htkgpf n{ ''ecnkdtcvkqp'' r tqegf wtg''dg''r wtuwgf 0Kp''y g''hwwtg.''y g''kpvgtxkgy gg''uckf ''y cv'c''pqp/eqpvcev'uqnwkqp''uwej ''cu''5F '' uecppkpi ''xkc''NKF CT''y qwff ''dg'kf gcnff

### Crrgpf kz'E<'Kpvgt xkgy '5

Kovgtxkgy gg"5."c"f guki pgt"cpf "uwtxg{qt."vj qwi j v'vj cv'vj g"EKU'f gxkeg"y qwrf "r gthqto "y gm'y j gp" o gcuwtkoi "ukf gy cmu'hqt"f guki p"dwo'o c{"uvtwi i rg"y j gtg"f khigtgpvn{"unqr gf "uvtggvu"o ggv"qpg" cpqvj gt0Vj g"ueqr g"qh"j ku'y qtmlkpenwf gf "uwtxg{kpi "qh"y g"ukg"cpf "f guki p."cpf "vj gp"c"eqpvtcevqt" dwkrf u'vj g"ewtd"tco r 0J g"cmq"cr r tgekcvgf "vj cv'vj g"EKU'u{uvgo "cwvqo cvkecm{"gpvgtu'vj g"tgeqtf" lphqto cvkqp"kpvq"c"f cvcdcug='vj g{"ewttgpvn{"tgeqtf"o gcuvtgo gpvu"qpvq"r cr gt"cpf "vj gp"rcvgt" vcpuhgt"vj go "vq"c"eqo r wgt."uq"vj ku'y qwrf "ucxg"vko g"cpf "ghhqtv0

Kp'f guetkdkpi 'j ku'y qtmkp'ewtd'tco r 'f guki p'cpf 'uwtxg{kpi .'y g'kpvgtxkgy gg'gzr nckpgf 'y cv'hqwt " hqqv'cpf 'w q/hqqv'ngxgni'ctg'i gpgtcm{ 'uvcpf ctf 'vq'wug'kp'o gcuwtgo gpv0J qy gxgt.'j g'cf o kwgf 'y cv' kv'ku'y g''ej qkeg''qh'y g''uwtxg{qt''qh'y j kej 'ukl g''ngxgn'vq''wug''q''o gcuwtg'y g'f ko gpukqpu''qh'y g''dwkm'' gpxktqpo gpv'dghqtg''y g''f guki p''r j cug''cpf 'y cv'y ku''ecp'ko r cev'o gcuwtgo gpv0J g''cnq''y gpv'qp''vq'' uc{''y cv'pqv''gxgt{qpg''eqpf weu'y gug'o gcuwtgo gpwi'cr r tqr tkcvgn{0Hqt''uwtxg{kpi .''j ku'hto '' tgegpvn{''dgi cp''wukpi ''cp''gzr gpukxg''NKF CT''uecppgt''vq''5F 'y g''ewtd''dghqtg''f guki pkpi ''c''co r 0J g'' kpf kecvgf 'y cv'y ku'y cu''c''uvcy/qh'y g/ctv'r tcevkeg''cpf ''y cv'o quv'hto u''nkm''wug''tcf kkqpcn'' uwtxg{kpi ''o gy qf u0'Vj g''kpvgtxkgy gg''cnq''gzr nckpgf ''y cv'cf lwuvo gpvu''y cv''ctg'tgs wktgf 'kp''y g''hgrf.'' uwej ''cu'c'tguwn''qh'uwthceg''hgcwtgu.''ctg'' gpgtcm{''tgxkgy gf ''d{''f guki p''gpi kpggtu0

Ur genkpi "edqwi'y g'htgs wgpe { "qh'eqput weykqp"qh'pqp/eqor nkepv'ewtd't cor u. 'y g'kpygtxkgy gg'uckf " y ev't cor u'etg"qhygp"eqput weygf "eu'pqp/eqor nkepv'gxgp"kh'y g{ "etg'f guki pgf "eu'eqor nkepvOHtqo" j ku'gzr gtkgpeg. 'y ku'ku'o quv'qhygp"e'tguwn/qh'uwd/uwtheeg'hgewtgu'y ev'o wuv'dg'y qtngf "etqwpf "epf"

<sup>&</sup>lt;sup>4</sup>"Vgrgi c. 'Gf 0Rgtuqpcn'Kpygtxkgy 0'; 'Cwi wuv'423: 0

ecwug''y g''r tqr gt'f guki p''q'dg''gej pkecm{ "kphgcukdng0J g''cnuq''uckf ''y cv'tco r u''y cv'ctg''f guki pgf ''cu'' eqo r ncpv'dwi'dwknv'pqp/eqo r ncpv'y ky qwi'c''i qqf ''tgcuqp''qeewt.''kp''j ku''r gtuqpcn'gzr gtkgpeg.'' ctqwpf ''hkxg''r gtegpv'qh''y g''vko g0

Hqt 'liggf dceni'qp''y g'E KU'f gxkeg''r tqvqv{ r g. 'y g'kpvgtxkgy gg'uckf 'y cv'y g''gzkuvkpi ''ecnkdtcvkqp'' r tqegf wtg''o c { 'r qug''ej cmppi gu'kp''j km{ ''qt''o qwpvckpqwu''ctgcu0'Vq'ko r tqxg. 'j g''uwi i guvgf ''y cv'' ecnkdtcvkqp''gkj gt''dg''eqpf wevgf ''qpn{ ''r gtkqf kecm{ ''qt''dg''uko r nkhgf ''vq''c''u{ uvgo ''uko krct''vq''j qy '' vtcpukv'vtkr qf ''u{ uvgo u''ctg''rgxgrgf ''kp''uwtxg{ kpi 0J g''cnuq'kpf kecvgf ''y cv''eqpvtcevqtu''o c { ''dg'' lpvgtguvgf ''kp''y ku''vqqn''dw''y gkt''kpvgtguv'y qwnf ''f gr gpf ''wr qp''r tkeg''dgecwug''qwt''vqqn'ku''eqo r gvkpi '' y kj ''kpgzr gpukxg''cpf ''wdks wkqwu''vqqn''rkng''f ki kcn'hgxgni''cpf ''cr g''o gcuvtgu0

#### Crrgpfkz′F<′Kpvgtxkgy′6

Kovgtxkgy ggu'hggf dcem'qp''y g''E KU'f gxkeg''cpf 'kohqto cvkqp'tgi ctf kpi 'y g''ewtd'tco r 'f guki p''r tqeguu'' y cu'i cy gtgf 'kp''kovgtxkgy u'y kj ''y q''r tqlgev'o cpci gtu''cu'y gm'cu'c''r tkpekr cn'cv'y g'hto 0'Vj gkt'' hto ''gpi ci gu''kp''hwm/ugtxkeg''tcpur qtvcvkqp''gpi koggtkpi .''y j kej 'kpenvf gu''y g''tgr ncego gpv'cpf '' tgeqpuvtwevkqp''qh'ewtd'tco r u0'Qp''y gug''r tqlgewu.''y g{ ''cnnq''kpur gev'ewtd'tco r u'f wtkpi ''y g'' eqpuvtwevkqp''r tqeguu0'Vj g''enkgpwu'hqt''y gug''r tqlgewu''ctg'' gpgtcm{ ''RgppF QV''cpf ''kpf kxkf wcn'' o wpkekr cnkvkgu.''cu''y gm'cu''qy gtu0

Kp'ur genkpi ''cdqw'j ku'tqng''cu'c''r tqlgev'o epci gt. ''y g'kpvgtxkgy gg'kpf kecvgf ''y cv'j ku'tqng''xetkgu'' dgw ggp''r tqlgevu'dgw ggp'f guki p.''uwtxg{.''cpf ''kpur gevkqp0J g'i gpgtem{ ''y qtmu''vq''f guki p'' tqef y c{u.'hqt''kpuvcpeg''ctqwpf ''y g''eqpuvt wevkqp''qh''c''pgy ''eqpxgpkgpeg''uvqtg''qt''uj qr r kpi ''egpvgt0' Cnqpi ''y kj ''y ku''eqpuvt wevkqp.''j g''pqvgf ''cur gevu''nkng''eqpukf gtcvkqp''qh''vchhe''uki penu'cpf ''CFC/'' eqo r nkepv''ewtd''tco r u''eqo g''j cpf ''kp''j cpf0

Y j gp"cungf "cdqwi'y g"dki i guvej cngpi gu"kp"y g"ewtd"tco r "f guki p"r tqeguu. "y g"kpvgtxkgy gg" go r j cuk gf "y cv'y g"ræni'qh"ceewtcvg"uwtxg {"kphqto cvkqp"r qugf "y g"i tgcvguvf khhewn{0Dgecwug" CFC"tgs wktgo gpvu"ctg"uq"uvtkpi gpv"cpf "r tgekug. "uo cm'xctkcpegu"ecp"tguwn/kp"pqp/eqo r ncpeg0' Cu"c"tguwnx "ræni'qh"s wcnk{ "uwtxg{ "f cvc"r tgugpvu"c"ej cmgpi g"vq"f guki pgtu"vq"f guki p"c"ewtd"tco r " y cv'y knihkv'y g"hgnf "eqpf kkqpu'y j kg"tgo ckpkpi "CFC"eqo r ncpv0Hqt"kpuvcpeg. "y g"kpvgtxkgy gg" gzr mkpgf "y cv'j g"qhvgp"y qtmu"y kj "RGEQ"cpf "y cv'y g{ "wug"NKFCT"vq"qdvckp"uwtxg{ "f cvc0J g" cempqy ngf i gf "y cv'y ku"NKFCT"f cvc"y cu"o qtg"ceewtcvg. "r tqxkf gf "o cp{ "o qtg"f cvc"r qkpvu."cpf " y cu'tgrcvkxgn{ "s wkemicpf "gcu{0Qpg"f qy pukf g"qh"NKFCT"y cv'y g"kpvgtxkgy gg"pqvgf 'y cu'y g" tgs wktgo gpv"nt"uwduvcpvkcnleqo r wkpi "r qy gt0'Vj ku"ho kxcvkqp"ku"c"tgcuqp"y cv'qy gt "qqnu"o c{"dg" wugf "vq"uwtxg{ "j g"dwkny"gpxktqpo gpv."uwej "cu'tcf kkqpcn'hgxgnu"cpf "o gcuwtgo gpv'y j ggn0

I kxkpi ''y gkt ''y qwi j wi'cdqwi'y g'kputwevkqpcn'EKU'[ qwVwdg'xkf gq."cm'y tgg'kpvgtxkgy ggu'y gtg'' ko r tguugf ''y ky ''y g''qqn'cpf ''ci tggf ''y cv'y g''u{uvgo ''j cf ''kpetgf kdm''xcnwg''kp''y g''ewtd'tco r '' kpur gevkqp''r tqeguu0'Vj g{ ''gzr nckpgf ''y cv'y cv'gzkuvkpi ''y qtnhrqy ''hqt''ewtd'tco r ''o gcuwtgo gpv'wugu'' c''ngxgn'cpf ''o gcuwtgo gpv'y j ggn'q ''qdvckp''f cvc''cdqwi'y g''ewtd'tco r ''cpf ''y ku'kphqto cvkqp'ku'y gp'' tgeqtf gf ''y ky ''r gp''cpf ''r cr gt. 'y j kg''ncvgt''y g''kphqto cvkqp'ku'kpr w'kpvq''O ketquqhv'Gzegn0Qp''y g'' f guki p''ukf g. ''y g''kpvgtxkgy ggu'f kf ''pqv'ugg''cu''o wej ''r qvgpvkcn'xcnvg0'Vj g{ ''pqvgf ''y cv'gzkuvkpi ''ewtd'' tco r u''ctg''uqo gvko gu''o gcuwtgf ''kp''y g''f guki p''r tqeguu. ''dwi'pqv'qhvgp=kki'ku''o qtg'ko r qtvcpv'vq''y go '' q''o gcuwtg''y g''qy gt ''eqpf kkqpu''qh'y g''dwkny''gpxktqpo gpv'y cv'y kn'ko r cev'f guki p0 Ur genkpi "cdqwi'y g'kQU'er r necvkqp"eeqo r cp{kpi "y g'EKU'f gxleg. "y g'kpvgtxlgy ggu'y qwi j v'y ev' kv'y eu'j gn hwi'y ev'e 'EU'6623'hqto "o c{"dg"ewqo evleem{"r qr wrevgf 'y ky "y g'tgrgxcpv'f ee "chgt" o geuwtgo gpv'kp"y g'hwwtg0'Hwt y gt. "y g{ "f guetkdgf "y g'er r neevlqp"eu'wugt 'htlgpf n{"epf "gzr rekpgf" y ev'ky'y qwrf "dg"gur gelem{ 'j gn hwihiqt 'r gqr rg'y j q"etg"pqv'xgt { "npqy rgf i gedrg"edqwi'CF C 't co r " kpur gevlqp0'Y j gp"eungf ''y j g' g g' y qwrf "entgef { 'j exg'lRef u'hqt'y g"er r neevlqp. 'y g { "pqvgf" y ev'y gkt"eqo r cp{ 'y qwrf 'hkngn{"pggf ''q'uwr r n{ 'y g'lRef u'epf ''y ev'RgppF QV'tglo dwtugu'o qpy n{ '' f eve'wuei g'hp'y gkt 'hkto 0

Ewttgpvn{.''y gkt '522'kpur gevqtu''ctg''gs wkr r gf ''y kj ''c''uo ctv'igxgn'cpf ''cr g''o gcuwtg''j cv.''eqo dkpgf.'' equvu'nguu''j cp''&3970'Vj g''EKU'ku''gzr gevgf ''vq''dg''kp''j g''tcpi g''qh''&3222''r nwu''j g''equv''qh''cp'' Y j gp''ur gcmkpi ''y kj ''j g''kpvgtxkgy gg.'j g''o gpvkqpgf ''j g''r tkeg''r qkpv'ku''c''eqpegtp0

F gvcktkpi "o qtg"qh'y g"pwcpegu"qh"ewtd"tco r "f guki p. "y g"kpvgtxkgy ggu"f guetkdgf "y gkt"wug"qh" Dgpvg{ 'O ketqUcvkqp"uqhyy ctg."cpf "j qy "o quv'ewtd"tco r u."kp"tgcrkv{."ctg"j {dtkf u"qh'c"hgy "õuv{ nguö" qh"y g"tco r ."cpf "y cv'kv"o wuv'dg"rcdgrgf "y j kej gxgt"ku"enquguv0Kp"cf f kklqp. "y g{ "go r j cuk gf "y cv" y g"ewtd"tco r "f guki p"j cu"uqo g"j wo cp"grgo gpvu"y cv'y qwrf "dg"f kthkewnv'vq"cwqo cvg="j wo cp" lwf i go gpv'cpf "tgxkgy gt"r tghgtgpeg"qhgp"eqo gu"kpvq"r m{0Vj g"kpvgtxkgy gg"guvko cvgf "y cv'f guki p" cpf "tgxkukqp."kp"j ku"gzr gtkgpeg."vcmg"cdqw'32/34"j qwtu"r gt"tco r "qxgtcm"dwv'y cv'y ku"xctkgu"y ky " f kthgtgpegu"kp"y g"uwttqwpf kpi "dwkn/gpxktqpo gpv'cpf "y g"eqo r nkecvkqpu"kv'o c {"r qug0

Qp'ý g'\qr ke'qh'uwtxg{kpi '\gej pks wgu.'ý g'kpygtxkgy ggu'y gtg''cungf 'y j gý gt''j g{ ''r tghgttgf ''NKF CT'' qt'o qtg''tcf kkqpcn'uwtxg{ ''gej pks wguOVj g{ "gzr nckpgf ''j cv'NKF CT''tgs wktgu''cm quv'pq'' kpygtr qncvkqp''dgw ggp''r qkpwi'cpf ''j cv'y ku''ngcf u'\q''nguu''\ko g'tgs wktgf ''hqt''f guki p''cpf ''nguu'' qr r qtwpkk{ ''hqt''gttqt='c''uqhvy ctg''ecngf ''ōVtwXkgy ö''ku''wugf ''q''xkuvcrk{ g''y g''NKF CT''f cvcOHwty gt.'' y g''equv'qh''NKF CT ''xgtuwu''tcf kkqpcn'uwtxg{ kpi ''xctkgu''dgw ggp''eqo r cpkgu//''y g{ ''kpf kecygf ''y cv'' NKF CT''r tkegu''ctg'f getgcukpi .''cpf ''tcf kkqpcn'uwtxg{ ''r tkegu''ctg''kpetgcukpi 0'J qy gxgt.''qpg'' ej cngpi g''y kj ''NKF CT''ku''r qygpvkcnlkpygthgtgpeg''d{ ''qduvcengu''qt''qy gt''tki j v.''uq''y g''uecpu'o c{ '' uqo gvko gu''pggf ''q''dg''eqpf weyf ''cv'pki j vOHwty gt.''y gkt 'hkto ''qhngp''tgegkxgu''uvtxg{ ''f cvc''htqo '' q'j gt''r ctvlgu.''uq''y g{ ''f q''pqv''cny c{ u'i gv'\q''ej qqug''y j kej ''o gyj qf ''ku''wugf 0'F gur kg''y ku.''y j gpgxgt'' y g{ ''f q''y gkt''qy p''r tqlgevu''qt ''ecp''ej qqug''y g''uvtxg{ ''o gyj qf .''y g{ ''uvuxcm{ ''tgs wguv'c''NKF CT''uecp0'' Uqo gvko gu'y g''uvtxg{ 'j cu''cntgcf { ''dggp''eqo r ngvgf ''d{ ''y g''ko g''y g{ ''ctg''dtqwi j v'qpvq''c''r tqlgev.''kp'' y j kej ''ecug''y g{ ''o wuv'y qtmly kj ''y g'f cvc''y g{ ''ctg''i kxgp0

Qp"c"hkpcn'pqvg."vj g"kpvgtxkgy ggu"ci ckp"gzr nckpgf "vj cv"vj g"f guki p"qh"ewtd"tco r u"j cu"o cp{"j wo cp" gngo gpvu"vq"kx."dwv"vj cv"vj g{"ci tggf "vj cv"vj g"kpur gevkqp"eqwrf "wug"uqo g"cwvqo cvkqp"cpf " uvtgco nkpkpi ."uvvej "cu"y kj "vj g"EKU"cpf "ceeqo r cp{kpi "kQU"cr r nkecvkqpØ

#### Crrgpf kz'G<'Kpvgt xkgy '7

Hggf dcem'cpf 'kphqto cvkqp''cdqwv'y g''ewtd''tco r 'f guki p''r tqeguu'y gtg''tgegkxgf 'htqo ''y q'' kpvgtxkgy ggu''cv'Dgpvrg{ ''U{uvgo u<c''r tqf wev''o cpci gt''cpf ''cp''gpi ci go gpv'o cpci gt0'Vj g''r tqf wev'' o cpci gt''gzr rekpgf ''y cv'j g''j cu'hkhggp''{gctu''qh''gzr gtkgpeg''kp''tqcf ''cpf ''dtkf i g''f guki p. ''kp''dqy '' gpi kpggtkpi ''cpf ''ucrgu'tqrgu0J g''qtki kpcm{ ''y qtngf ''hqt ''Dgpvrg{ ''cu''cp''cr r nkecvkqp ''gpi kpggt.''cpf '' y gp'y qtngf ''cv'J gy kw'Eqput wevkqp''dghqtg'tgwtpkpi ''q''Dgpvrg{ ''kp''j ku'tqrg''cu''c''ugpkqt''r tqf wev''

<sup>&</sup>lt;sup>5</sup>Ucpvqp. 'Ugcp='F vqpi.''Vvcp='F qwijgtv{.'Cpyjqp{0'Rgtuqpcn'Kpvgtxkgy042''Ugrvgodgt''423:

o cpci gt0Eqo o gpvkpi "cdqwi'y g"o gcuwtgo gpvu'qhi'y g"EKU.'j g"y cu'eqpegtpgf "cdqwi'r tgekukqp" cpf "ceewtce{.'cu''y g"vqngtcpegu'hqt "kpur gevkqpu'ctg"xgt{"uo cm0Y j gp"cungf "y j gy gt"y g"EKU'y qwf" dg"wughwrlkp''y g"f guki p"cpf "uvtxg{kpi "r tqeguu. 'y g"kpvgtxkgy ggu'uckf "y cv'kv'o c{'j gr "y kj " r mppkpi "cpf 'kf gpvkh{kpi 'r tqdngo "ctgcu'dghqtg"eqpuvtwevkqp."cu'y gm'cu'r tkqtkk{ g"tco r u'y cv" uj qwf "dg'tgr megf "uqqp"cpf "y cv'o c{"dg'hwty gt"htqo "eqo r nkcpeg0'Qxgtcm"y qwi j .''y g{"dgnlgxgf" y g"EKU'y cu'o qtg"wughwrlkp"cp"kpur gevkqp"cpf "xcnkf cvkqp"tqng0'Kp"cf f kkqp.''y g{"nkmgf "y cv'y g"EKU" y qtmhqy 'y cu'uko r m"cpf "uvtgco nkpgf "cpf "cr r tgekcygf "y cv'f cv"y cu'uvqtgf "kp"c"I KU'f cvcdcug0

Qp''y g''geqpqo keu'qh'y g'EKU'f gxkeg. 'y g'kpygtxkgy ggu'kpf kecygf 'y cv'y g''ewrqo gt''y qwf " rkngn{"dg'o wpkekr chkkgu'cpf 'ekkgu'dgecwug''y g{ 'ctg'i gpgtcm{ 'korceyf 'y g'o quv'd{ 'y ku'kurwg0' Vj g{ 'cnq''gzr mkpgf 'y cv'y ku'o c{ 'xct{ 'd{ 'uvcvg0'Hqt'kpuvcpeg.'' g'f guetkdgf 'y cv'Echkhqtpkc'' cu'' o cp{ 'uvcvg'tqcf u'y cv'i q'y tqwi j 'ekkgu.''dw'P gdtcumc'' cu'uvcvg'tqcf u'y cv'uvqr 'cv'ek{ ''dqtf gtu'cpf '' y gp''y g''ek{ ''o ckpvkpu'tqcf u'htqo ''y gtg''qp0'Y j gp''c'r tkeg''r qkpv'qh''ctqvpf ''&3222'y cu'uwi i guvgf.'' y g{ ''y gtg''dqy ''wpuvtg.''cu'y g{ ''o quvq{ ''f gcn'y ky ''y g''ucngu'qh'uqhy ctg''r tqf weu0'Dqy ''kpygtxkgy ggu'' ci tggf ''y cv'NKF CT''y cu'gz tcqtf kpcthq{ ''wghvnlkp''uvtxg{ kpi ="kh 'hqt'kpuvcpeg.''y g{ ''ctg''tgf guki pkpi '' cp'kpygtugevkqp.''y g{ ''y qwf ''nkngn{ ''dtkpi ''NKF CT''q''uvtxg{ ''cm'y g''cor r 'ctgcu0'Vj g{ ''gzr mkpgf ''y cv'' NKF CT''ku''gzr gpukxg''cpf ''uqo gvko gu''f khkewn''vq''r gthqto 0'Hqt''kpuvcpeg.''qpg''o c{ ''j cxg''q''uj w'' f qy p''cp'kpygtugevkqp''q''gpuvtg''y cv'cm'ukf gu''ecp''dg''uecppgf ''cpf ''y cv'pqy kpi ''ku'kp''y g'y c{ 0'Cu'c'' tguvnx.''y g''tcf kkqpcn'uvtxg{ 'ku'uvkn'qhxgp''f qpg0

Kp'\gto u''qh''qy gt''uwtxg{kpi '\gej pqmi kgu.''y g''kpvgtxkgy ggu'f kuewuugf '5F ''uwthceg'o crrkpi '' xkc''r j qvqu'y kj ''c''uqhy ctg''ecmgf 'Eqpvgzv'Ecrwtg0'Vj g''uqhy ctg''ecp''etgcvg''c''o guj ''q''wug''kp'' ECF 'cpf 'j grr''q'xkuwcrk g''cp''kpvgtugevkqp0'Qpg''cf xcpvci g''qxgt''NKF CT''ku''y g''gcug''qh''wug''dgecwug'' NKF CT''ku'f khhewn''q''ugv'wr 0'Qp''y g''qr ke''qh''ewtd''tcor r'f guki p.''y g''kpvgtxkgy ggu''gzr nckpgf ''y cv'kv'' ku''qhvgp'f khhewn''q''f guki p''c'tcor r'dgecwug''qh''y g''o cp{ ''kpvgtf gr gpf gpekgu''cpf ''tgrcvkqpuj kr u'' dgw ggp'f ko gpukqpu'y kj kp''c'f guki p0'Vj g{ ''y gpv'qp''q''uc{ ''y cv.'kp''y gkt''r gtuqpcn'gzr gtkgpegu.''qpn{ cdqwi'qpg'kp''ygp'tcor u''ctg''ucpf ctf ''cpf ''y cv'y gtg'ku''cm quv'cny c{u'uqo gy kpi ''kp''y g'' c{''qt''y g'' i tcf gu'f q''pqv'y qtm'qw0'Vj ku''r tqeguu'ku''o wej ''gcukgt'kp''pgy ''tqcf ''f guki p''dgecwug''y g'f guki pgt''j cu'' o qtg''eqpvtqnf

<sup>&</sup>lt;sup>6</sup>Lqj puqp. 'Eqtg{='Dcej guqp. 'Gf 0'Rgtuqpcn'Kpvgtxkgy 043''Ugr vgo dgt '423: 0

#### Crrgpf kz'I

#### Vcum'9<'Rtqeguu'Ctej kgewtg'Fgxgnqrogpv

#### Kpvt qf wevkqp

Dcugf "qp"yj g"kpygtxkgy u"eqpf weygf "cu"c"r ctv"qh"yj g"pggf u"cuuguuo gpv"qh"yj g"ewtd/tco r " f guki p"r tqeguu"kp"Vcuni8. "c"r tqeguu"ctej kgewtg"f guetkdkpi "c"ewtd"tco r "f guki p"yqqn"y cu" f gxgmr gf "\q"uj qy "j qy "c"eqo r wgt"r tqi tco "eqwf "i gpgtcyg"c"ewtd"tco r "f guki p"htqo "5/F " r j {ukecn"ukg"f cvc0"Vj g"cwcej gf "r tqeguu"hnqy "ku"c"tqcf o cr "qh"j qy "c"\qqn"y qwf "\cng"kpvq"ceeqwpv" y g"tgs wktgo gpwu"yj cv"c"f guki pgt"pggf u"\q"gxcnwcyg"kp"yj g"ugngevkqp"qh"c"tco r "\{ r g. "crki po gpv" y kyj kp"cp"kpvgtugevkqp. "cpf "yj g"o kplo wo "tgs wktgo gpwu"hqt"unqr gu"cpf "f kuvcpegu. "cpf "wnko cvgn{" f guki p"c"tco r 'yj cv"ku"eqo r nkcpv'vq"yj g"o czlo wo "gzvgpv"hgcukdng0"Vj ku"f guki p"f cvc"o c{"yj gp"dg" gz vtcevgf "cpf "kpugtvgf "kpvq"c"VKH"hqt"tco r u"y j kej "f kf "pqv"o ggv"yj g"etkgtkc0

#### Rt qeguu'Ct ej køgevøt g

Ugg"RF H'hqt''y g'hwm'Rtqeguu'Ctej kgewstg'hqy ej ctv0'Vj g'hqy ''ej ctv'ku''qti cpk gf ''uwej ''y cv'' gcej ''tqy ''eqttgur qpf u''vq''c''pwo dgt.''cpf ''cp''cf lcegpv'dqemiku''i kxgp''c''ngwgt0

#### Fkæwukqp

Hktuv.''c''5/F ''o qf gn'qh''y g''dwkn/'gpxktqpo gpv'ku''etgcvgf '\*3+0'Vj g''tguqnwkqp.''r tgekukqp.''cpf '' ceewtce{''qh''y ku''5/F ''o qf gn'y kn'xct{''dcugf ''qp''o gcuwtgo gpv'cpf ''r tqeguukpi ''o gy qf u=f gvcku'' tgi ctf kpi ''y ku''ctg''eqxgtgf ''cv''ngpi yj ''kp''Cr r gpf kz ''C0'Vj ku''5/F ''o qf gn'ku''y gp''gzr qtvgf ''kp''y tqwi j '' y g'ECFF ''r tqi tco ''kp''gkj gt''FY I ''qt''FZH'hkg''v{r g'\*4+0'Htqo ''y ku''gzr qtvgf ''5/F ''ECFF''f cvc.'' o cy go cvkecn'ur cvkcn'cpcn{uku''ku''eqpf wevgf ''vq''f gvgto kpg''y g''r j {ukecn'ukvg''r ctco gvgtu'\*5+0'Vj gug'' r ctco gvgtu''kpenvf g<

- /" Kovgtugevkqp"v(rg"\*Kg0'y g"pwo dgt"qh'tqcfu. "kovgtugevkqp"cpi ngu. "ttchke"hqy +
- /" Ukf gy cm/y kf y
- /" Ukf gy cmi'nqecvkqp'y kj 't gur gev'vq''y g''dcemihceg''qh'ewtd
- /" J gki j v'cpf "y kf yj "qh"ewtd"etquu"ugevkqp
- /" F guki p'wtpkpi 'tcf kwu'cpf ''ngpi yi ''qh''yi g''ewtxg''cmpi ''yi g''ewtd''hceg
- /" Cpi rg"qh'ut ggv'kpygt ugevkqp\*u+
- /" Rrcppgf "qt "gz kuvkpi "nqecvkqp"qh'uki pcn'cpf 'uki pcn'eqpvtqn'f gx kegu
- /" Uvqto 'y cvgt'kprgvu'cpf 'r wdrke'uwthceg'wkrkskgu
- /" Rquukdıg'uki j v'qduvt we vkqpu
- /" Uttggv'y kf y
- /" Qy gt 'r j {ukecn'qduxt wevkqpu'uwej "cu'dwkrf kpi u. 'dt kf i gu. 'cpf 'y cmu
- /" Tqcf y c{"i tcf g
- /" Rctmkpi "ur cegu
- /" Thij v'qh'y c{"hpgu

Vj gp. "c"r tqi tco o gf "dguv'r tcevlegu"ewtd"tco r "v{r g"twngugv'lu"cr r nkgf "vq"vj g"cdqxg"cpcn{| gf "qwr wv" r ctco gvgtu0Vj g"r tqi tco o gf "twngugv'ugngevu"vj g"cr r nkecdng"r quukdng"ewtd"tco r "v{r gu. "cpf "dtgcmu" f qy p"cu"hqmqy u<

V{rg'3

- /" Kf gcn'hqt "nqecvkqpu'y j gtg'y g'gzkuvkpi 'ukf gy cmiku'y kf g
- /" Y gin'uwkygf 'hqt'\ki j vtcf kwu'eqtpgtu
- /" Vj g'f tcy dcemiku'y g'y kf y ''qh'y g't grcvkxgn{ ''y kf gt ''ukf gy cmi'pggf gf ''vq''kpuvcmi'y ku'v{r g

#### V{ r g''4

/" Wughwh'qp"pcttqy "ukf gy cmu

/" F tcy dcemi'ctg'c'hævlung g'cv'ý g'f gr tguugf 'ewtd.'cpf 'ý cv'r gf guvtkepu'o wuv'vtexgtug'ý g" ewtd'teo r 'tgi etf nguu'qh'y epvkpi 'vq'etquu'ý g'uvtggv

/" V{r kecm{ ''wugf ''kp''ukwcvkqpu''y j gtg''pqp/y cm''ctgcu''ctg''pqv'r tgugpv

#### V{rg"6"( "6C

/"	Uko knet"vq"v{rg"3
----	--------------------

- /" Rtqxkf g'hnetgu''y ev'o c{ "dg'kpuvengf 'y j gtg' wkkkkgu'nko kv'kpuvennevkqp''qh'hnewgt 'unqr gu
- /"  $V{r \text{ kecm} '' \text{ wugf '' kp'' u kwc kqpu''y j gtg'' pqp/y cm' ctgcu'' ctg''r tgugpv}$

#### V{rg'8

- /" Y qtmu'y gm'y kj 'pcttqy gt'ukf gy cmu
- /" Kf gcnlkp'tgukf gpvkcn'ctgcu'y j gtg''c'i tggplr ncpvgf 'uvtkr 'ugr ctcvgu'y g'ukf gy cmilitqo 'y g'' ewtd
- /" Tgs wktgu'o qtg''ur ceg
- /" F tcy dcemi'ctg''y cv'r gf guvtkcpu'o wuv'vtcxgtug''y g''tco r 'y j gp''eqpvkpwkpi ''vq''y cmi'qp''y g'' ukf gy cmi'cpf ''cf f kkqpcn'hqto ''y qtmi'vq''eqpuvtwev

/"  $V{r \text{ kecm} ("wugf "kp"ukwcvkqpu"y j gtg"pqp/y cm"ctgcu"ctg"r tgugpv }$ 

#### Drgpf gf 'Vtcpukkqp

- /" Wughwi'y j gtg"pcttqy "\*6/7ø+"ukf gy cmiku"cv'dcemiqh"ewtd
- /" Nguu'f gukt cdng'hqt 'kpf kxkf wcnu'y kj 'xkuwcn'ko r ckto gpw
- /" Nqecvkpi "6øz "6ø'wtpkpi "ctgc"ku'r tghgttgf "dgj kpf "y g"ewtd

#### F kci qpcn

/" Ugtxgu''w q'f ktgevkqpu''qh''o qvkqp."dw'cxqkf 'kh'r quukdng

/" Wugf "qpn{ 'ur ctkpi n{ 'kp 'ctgcu'y kj 'o qf gtcvg/vq/j ki j 'xgj kewnct''cpf 'r gf guvtkcp''vtchhe" xcnwgu

- /" Cxqkf 'hqt'hcti g'tcf kwu''eqtpgt''ewtdu
- /" Nguu'ucvkuhcevqt { "hqt "r gqr ng"y ky "xkuvcn"f kucdkrkkgu
- /" Nqecvkpi "6øz "6ø'wtpkpi "ctgc"ku'r tghgttgf "dgj kpf "y g"ewtd

 $Crrn{kpi "ij g"cdqxg"dguv"rtcevkegu"ewtd"tcor "v{rg"twrgugv"pcttqy u"fqyp"ij g"ugv"qh"rquukdrg"ewtd"tcor "hqt "jg"i kxgp"ukg"eqpf kkqpu"*6'('6C+0)$ 

Htqo "cpcn{| gf "r j {ukecn'ukg"r ctco gvgtu"( "grki kdng"ewtd"tco r "v{r gu"f gvgto kpgf "d{"y g"dguv" r tcevkeg"twngugv."c"f guki p"ku"i gpgtcvgf "y cv'o quv"enqugn{"cf j gtgu"vq"y g"xctkqwu"i tcf gu"cpf " f kuvcpegu"qwrkpgf "d{"RgppF QVøu"tgs wktgo gpvu"cpf "tgeqo o gpf cvkqpu."y j kej "ctg"cu"iqmqy u<

Tgs what go gp vu. 'O kp ko wo u. '( 'O cz ko wo u

/" 4022' 'o czko wo 'nqpi kwf kpcn'cpf "etquu'unqr g

/" O kpko wo '6)2\$'z'6)2\$'hgxgnhcpf kpi 'dg{qpf 'yj g'ewtd'hceg'y j gtg'wtpkpi 'o qxgo gpwl' qeewt'kp''y g'uvtggv

/" Tco r "rgpi y "pqvtgs wktgf "vq"gzeggf "37"hv0

/" O kpko wo "y kf yj "qh'c"ewtd"tco r "ku'6: "kp0'gzenwukxg"qh'hrctgf "ukf g'urqr gu /" Ukf gy crmi'eqpuvtwevgf "cv'c"rqpi kwf kpcn'urqr g"pqv'\q"gzeggf "7022' O'Hqt"tqcf y c{"r tqhkrg" urqr gu'yj cv'gzeggf "7022' ."eqpuvtwev'r ctcrngn'ukf gy crmu"cf lcegpv'\q"yj g"tqcf y c{"cv'c" rqpi kwf kpcn'urqr g"pqv'\q"gzeggf "tqcf y c{"r tqhkrg"urqr g0

/" Vj g''eqwpvgt''unqr g''qh''y g''i wwgt''qt''tqcf ''cv''y g''hqqv''qh''c''ewtd''tcor.''ncpf kpi ''qt''dngpf gf '' vtcpukklqp''ku''pqv''vq''gzeggf ''7022' ''o czko wo ''unqr g

/" I tcf g'f khigtgpeg'dgw ggp'tqcf y c{ 'urqr g''cpf 'ewtd'tco r 'urqr g''pqv'\q''gzeggf '3505' ." y j gtg'i tcf g'f khigtgpeg''gzeggf u'35055' .'r tqxkf g''c'46ö'\tcpukkqp''uvtkr ''cetquu'y g'F Y U'' uwthceg''uq''y cv'y g'i tcf g''f khigtgpeg''ku''pqv'gzeggf gf 0'Vtcpukkqp''uvtkr ''pqv'\q''gzeggf '7022' 0' /'Etquu''urqr g'tcvg''qh''ej cpi g''uj qwf ''pqv'gzeggf '5022' ''r gt''3ø/2ö''y j gp''tcpukkqpkpi '\q'' tqcf y c{''r tqhkrg

/" Ngxgnhcpf kpi u'\*4022' 'o czko wo 'mpi kwf kpcn'cpf 'etquu'umqr g+'ctg'tgs wktgf 'y j gtg'' r gf guvtkcpu'r gthqto 'wutpkpi 'o cpgwxgtu0

/"  $6\emptyset/2$ ö'nepf kpi u'r gto k<br/>/'32022' "o cz 'hnetg''unqr gu."cpf ''nguu''y cp''6 $\emptyset/2$ ö''nepf kpi u't<br/>gs wktg'' : (55' ''hnetg''unqr gu0

- /" Tqcf y c{ 'uwthceg'uj cm'dg'hnwij 'y kj ''y g'f gr tguugf 'ewtd
- /" O czko wo "ewtd"tco r "unqr g"ku": 055'
- /" Ewtd"tco r "qr gpkpi 'y kf ý "cv'ngcuv'6: "kp0
- /" Rgf guvtkcp''ceeguu''tqwg''ctqwpf ''eqtpgtu''uj qwf ''dg''cuuguugf

Tgeqo o gpf cvkqpu

- /" Ewtd'tco r 'cpf 'hrctg'urqr gu'eqpuvt wevgf 'y kj 'y g'hrcwguv'urqr g'r quukdrg
- /" F kci qpcn'ewtd'tco r u'cxqkf gf "y j gp'r quukdrg
- /" Uo qqyi '\tcpukkqpu'htqo 'tco r '\q'i wwgt'y kj 'pq''ngxgn'ej cpi gu'dgwy ggp'tco r 'cpf 'uvtggv
  - /" Rgf guttkcp"o qxgo gpv"tgutkevkqp"uj qwf "dg"cxqkf gf
  - /" Ewtd"tco r u'uj qwrf "dg"crki pgf "y kj "etquuy crmu
  - /" I tcf g"dtgcmu"ctg"r gtr gpf kewrct "\q"\j g"f ktge\kqp"qh'\tcxgn
  - /" FY U'uj qwrf "dg"mecvgf "kp"ceeqtf cpeg"y ky 'TE/890
  - /" P ggf 'hqt 'ewtdkpi ''uj qwrf ''dg''cuuguugf ''cpf ''c''v(r g''uj qwrf ''dg''f gvgto kpgf

Htqo ''y ku.''y g''ugv'qh'r quukdrg'tco r 'f guki pu'ku''qwr wi'y ky ''ceeqo r cp{kpi 'ECFF ''f tcy kpi u'( 'f cvc \*7+0Cv''y ku'r qkpv.''y g''ewtd''tco r ''f guki pgt''cuugtwi'gpi kpggtkpi ''lwf i go gpv'cpf ''ej qqugu''y g''o quv'' uwkscdrg''tco r ''f guki p''hqt''y g''i kxgp''uksg''eqpf kkqpu'\***8**+0

Vj ku'ej qugp'tco r 'f guki p'ku'y gp''gxcnvcvgf 'hqt'vgej pkecn'hgcukdktkv{ ''dcugf ''qp''y g''RgppF QV'f guki p'' tgs wktgo gpvu''qwvtkpgf ''cdqxg''cu'y gm'cu'y j gy gt''cp{ ''cf f kkqpcn'ukkg''eqpuvtckpvu''ctg''r tgugpv'\*9+0' Rquukdrg''ukkg''eqpuvtckpvu''y cv''eqwrf ''ecwug'vgej pkecn'hptgcukdktkv{ ''kpenvf g<

/"Xkqrcvkpi "cp{"qh"yj g"RgppFQV"tgs wktgo gpvu."o kpko wo u."("o czko wo u /" Tqcf y c{"Rtqhkrg"Unqr g
- /" Nko kygf 'Tki j  $\sqrt{qh'Y}$  c{
- /" Gzkuvkpi 'wkrkvkgu
- /" Gzkuvkpi "dwkaf kpi u."y cmu."qt"xcwnu
- /" Gpxktqpo gpvcn'Ko r cevu
- /" J kuvqtkecn'Ko r cevu
- /" Uchgv{ "J c| ctfu

Ki'y g''ej qugp''ewtd''tco r 'f guki p'ku'f gvgto kpgf ''q''dg''yej pkecm{ 'kphgcukdng. ''c''VKH'ku'i gpgtcvgf ''kp'' EUX''hqto cv'hqt''kpr wv''q''Gzegn''cpf ''y gp''y g''hkpcn'ECFF''f tcy kpi u''ctg''gzr qtvgf ''\*9C+0

Ki'y g'ej qugp'ewtd'tco r 'f guki p'ku'f gvgto kogf 'vq'dg'vgej plecm{ 'hgcukdng.''y gp'pq''VKH'ku'i gpgtcvgf " cpf ''y g'hlocn'ECFF 'f tcy koi u'ctg''gzr qtvgf '\*: +0

#### RqvgpvkcnO gyj qf u'qh'Korngo gpvcvkqp

ECFF 'hkrgu'y j kej ''ctg''i gpgtcvgf 'htqo ''uwtxg{ ''f cvc''o c{ ''dg''gzrqtvgf ''cu''GFYI ''qt''GFZH'hkrg'v{rgu0' Vjgug''hkrg'v{rgu'o c{ ''dg''cpcn{| gf ''cpf ''o qfkhgf ''eqorwcvkqpcm{ ''y tqwij ''y g''qrgp/uqwteg'' Uqhvy ctg'Fgxgrqrogpv''Mkvu'\*UMFu+'rwdrkuj gf ''cpf ''o ckpvckpgf ''d{ ''y g''Qrgp'Fgukip''Crrrkcpeg'' \*QFC+0'Hqt''cpcrqiqwu''vqqnu'fgxgrqrgf ''y kj ''y gug''rtqvqeqnu''ugg''y gkt''o godgt''uj qyecug70'Hqt'' oqtg'kphqtocvkqp''cdqwv'y g''etgcvkqp''qh'ECFF''hkrgu''qh''y g''dwknv'gpxktqpogpv''htqo''uwtxg{ ''f cvc'' cpf ''y g''dgpghksu'cpf ''fgvtlogpvu'vq''gcej ''o gy qf.''ugg''Crrgpf kz''C0

#### Eqpenwikqp

Vj g'r tqeguu''ctej kgewtg'f gxgnr gf 'r tgugpu''c''dnwgr tkpv'hqt''y g''o gcpu''d{ 'y j kej ''c''ewtd''tco r '' f guki p''qqn'o c{''dg''etgcvgf.''kp''y j kej ''y g''qqn'qwr wu''c''f guki pgf 'tco r ''y cv'ku''eqo r ncpv''q''y g'' o czko wo ''gzvgpv'hgcukdng''cmpi ''y ky ''f cvc''cdqwi'y g''pgy ''tco r 0'Vj ku''kpenwf gu''c''f guetkr vkqp''qh''y g'' pgeguuct{''r j {ukecn'uksg''r ctco gvgtu''q''f gvgto kpg''y tqwi j ''ur cvkcn'o cy go cvkecn'cpcn{ uku.''y g'' xctkqwu''j gwtkukeu''cpf ''i wkf grkpgu'hqt''ej qqukpi ''y g''o quv''cr r tqr tkcvg''ewtd''tco r ''v{r g.''y g'' tgs wktgo gpvu.''cpf ''tgeqo o gpf cvkqpu''qwrkpgf ''d{ ''RgppF QV'hqt ''ewtd''tco r ''f guki pu.''cu''y gm''cu'' r qvgpvkcn'uksg''r ctco gvgtu''y cv''o c{ ''ecwug'vgej pkecn'kphgcukdktkv{0'Qr gp/uqwteg''f gxgnr o gpv'' tguqwtegu'hqt''etgcvkpi ''uqhvy ctg''y cv''cpcn{|| gu'5/F ''ECFF ''f cvc.''uwej ''cu''y g'' r tqxkf gf ''d{ ''y g''Qr gp'' F guki p''Cmkcpeg.''r tqxkf g''c''r qvgpvkcn'r rcvhqto ''hqt''y g''f gxgmr o gpv'qhi'uwej ''c''qqn0

#### RgppFQV'Uqwt egu

RgppF QV'Rgf guvt kcp''Hcekrkskgu''Rqengv'I vkf g Ej cr vgt '8''Rgf guvt kcp''Hcekrkskgu'cpf 'vj g''Co gt kecpu'y kj 'F kucdkrkskgu''Cev TE/89O 'E wtd''Tco r u'cpf ''Ukf gy cmu

## Crrgpf lz'C<Ewtd'Tcor'Fgulip'Rtqeguu'Hqy

Dcugf "qp" y g"kpvgtxkgy u"eqpf wevgf "cu"c"r ctv"qh" y g"pggf u"cuuguuo gpv"qh" y g"ewtd/tco r "f guki p" r tqeguu" kp" Vcum'8. "y g"EKU 'qqn"r tqxkf gf "qpn{"o kpqt"dgpghku" kp" y g"ewtd/tco r "f guki p"r j cug" kp"ku" ewttgpv" hqto 0"Htqo "y g"f kuewuukqpu" kp" y gug" kpvgtxkgy u"cpf "cff kkqpcn" tgugctej "kpvq" y g"uvgr u" tgs vktgf "\q" kpuvcm"qt" tgr ckt "CFC/eqo r ncpv" ewtd" tco r u"htqo "uvctv" y "hkpkij." c"r tqeguu" hqy "y cu"

<sup>7&</sup>quot;j wrudly y y Qr gpf guki pQeqo lo go dgt/uj qy ecug"

f gxgnqr gf "\q"qwnlpg"\j g"o clqt"f cvc"lpr wu. "tgs wltgf "f gekulqpu. "r qvgpvlcn'dqwngpgemu."cu'y gm'cu" uvtgpi y u"cpf "y gcnpguugu"qh"f khlgtgpv'cur gevu"qh"\j g"CFC/ewtd"tcor "r tqeguu0lkp"cff kklqp. "y ku" r tqeguu"hnqy "f go qpuvtcvgu"\j g"r ncegu"y j gtg"\j g"EKU'\qqn"o c{ "r tqxkf g"cff kklqpcn'xcnwg"kp"dqyj "\j g" f cvc/i cvj gtkpi "cpf "uwtxg{kpi "uvgr u"cu"\y gm'cu"lp"\j g"f gekulqp"o cnkpi "qp"cp"cuugv'o cpci go gpv" uecng0

Vj g'r tqeguu'hny 'f gxgnr gf 'qxgtxlgy u'gcej 'uvgr '\q'i q'htqo '\j g'tgs wltgo gpv'qh'c'ewtd'tco r '\q'' y g'uveeguuhwiløuvcmcvlqp''qt'tgr ckt'qh'cp'CF C/eqo r nkcpv'ewtd'tco r 'y kj '\j g'r tqr gt 'køur gevlqp'' htto u'uvdo kwgf 0'Vj g'o clqtk{ ''qh'y g'kphtto cvlqp'kp''y ku'tgr qtv'eqo gu'f ktgevn{ 'htqo ''y g'' køvgtxlgy u'eqpf wevgf 'y kj ''ewtd'tco r ''f guli pgtu''y j q''ctg'hco khct''y kj ''y ku''r tqeguu0'Uqo g''ng{ løvgtxlgy u'eqpf wevgf 'y kj ''ewtd'tco r ''f guli pgtu''y j q''ctg'hco khct''y kj ''y ku''r tqeguu0'Uqo g''ng{ løvli j wi'kpenvf g'\*3+'y g''o r qtvcpeg''qh'r tgekug. ''ceewtcvg. ''cpf ''f gvckgf ''uvtxg{ 'f cvc''kp''y g''ewtd'tco r '' f guli p''r j cug. '\*4+'y g''r qvgpvlcn'hqt ''wg''qh'y g''EKU'\qqn'lp''y g''uvtxg{ kpi ''r j cug''cpf ''cu'j gn hwi'kp''c'' j ki j gt/ngxgn'cuugv'o cpci go gpv'ecr cekv{.''cpf '\*5+'y g''xkuvcn'wpf gtuvcpf kpi ''qh'y j gtg'f gm{ u'o c{'' qeewt'kp''y g''r tqeguu''qh'kpuvcmkpi ''qt'tgr cktkpi ''cp''CF C/eqo r nkcpv'ewtd'tco r 0

## Crrgpf kz'C3<J kij/NgxgriRt qeguu'Hnqy



Vj ku'j ki j gt/ngxgn'r tqeguu'hnqy 'j grr u'\q'uwo o ctk g'\j g'i gpgtcn'uvgr u'qh'kpuvcmkpi ''qt'tgr cktkpi ''c'' ewtd'tco r 0'Hktuv.'o gcuwtgo gpvu'ctg''qdvckpgf 'htqo ''y g'ukg''y j gtg'y g''ewtd'tco r 'ku'kpuvcmgf 0' Htqo ''y ku'o gcuwtgo gpv'f cvc.''uqhiy ctg'ku'wugf ''q''etgcvg''c''5F ''o qf gn'qh'y g''ukg.''cpf ''y gp''cp''CFC/'' eqo r ncpv'ewtd'tco r 'ku'f guki pgf ''wukpi ''y ku'o qf gn0C''eqpvtcevqt ''y gp''eqpuvtweu'y g'f guki pgf '' tco r .''cpf ''ncvgt'y ku'tco r 'ku'kpur gevgf ''q''cuuguu''eqo r ncpeg''y kj ''CFC''tgi wncvkqpu0'Vj ku'i gpgtcn'' wpf gtuvcpf kpi 'ku'j gr hwn'y j gp''xkgy kpi ''y g'f gvckngf ''r tqeguugu'hnqy ''dgecwug''qh''y g''o cp{'' eqpvkpi gpekgu''cpf ''r qvgpvkcm'hqt ''gttqtu''cpf ''f gnc {u'y cv'eqo g''y kj ''gcej ''uvgr 0'Hqt 'kpucpeg.''y g'' ej qkeg''qh''uwtxg{''o gcuwtgo gpv'o gy qf ''qt''vgej pkecn'kphgcukdkkw{ ''qh'c''ewtd''tco r ''r qug''ej cmgpi gu'' cpf ''f gekukqpu''q''o cmg=''y gug''ctg''eqxgtgf ''dgnqy ''kp''j g'f gvckngf ''r tqeguu'hnqy 0

# Crrgpf kz'C4<Fgvckgf'Rt qeguu'Hnqy

Ugg'RF H'hqt''y g'hwniRtqeguu'Hnqy 'hnqy ej ctv0Vj g'hnqy 'ej ctv'ku''qti cpk gf 'uwej 'y cv'gcej 'tqy " eqttgur qpf u'\q'c''ngvgt''cpf ''gcej ''dnqenikp''c''tqy 'ku''cuuki pgf ''c''pwo dgt0Hqt''kpuvcpeg.''y g'htuv'' f gekukqp''dnqeniõUvtxg{ 'O gy qf Aö'ku''cuuki pgf ''y g''cn j cpwo gtke''eqf g''õC3ö0Hqt''c''uko r ngt'' f kuewukqp''qh''y g''r tqeguu'hnqy .''gcej ''cur gev'y kn'dg''tghgttgf ''q''cu''ku''cn j cpwo gtke''eqf g''kp''y g''tguv'' qh'y g''tgr qtv0

# Crrgpf lz'C5<Fgwlgf 'Rt qeguu'Hnyy 'F kæwulkap

Uvctvkpi 'htqo 'C3.'vj g'o gvj qf 'qh'uvtxg{kpi 'o gcuvtgo gpv'o wuv'dg''ej qugp0Vj ku''ecp''dg''gkj gt''

vtcf kkqpcn'uwtxg{kpi 'y kj 'gxgni'cpf 'o gcuwtgo gpv'y j ggni.'pqp/eqpvcev'r j qvqi tcr j ke'' o gcuwtgo gpv.''qt''pqp/eqpvcev'NKF CT8''o gcuwtgo gpv'\*D3/5+0'Gcej 'o gy qf 'j cu'f kuvkpev'uvtgpi yj '' cpf ''y gcnpguugu.''y j kej ''ctg''gzr mtgf ''ncvgt''kp''y ku'tgr qt 0'Dcugf ''qp''y g''v{r g''qh''uvtxg{ ''eqpf wevgf .'' y ku'f cvc'ku'r tqeguugf ''xkc''uqhiy ctg'\*E3/5+''y cv'etgcvgu''c'5F ''o qf gn'qh''y g''dwknv'gpxktqpo gpv'' uwtxg{gf ''\*F 3+0

Wukpi "y ku"5F "o qf gn"cp"CFC"ewtd"tco r "ecp"dg"f guki pgf "yq"hky'y g"eqpf kkqpu"qh"y g"ukg"\*G3+0K6" y g'ukg'f guki p'hgcwtgu'f q'pqv'eqo r n('y kj 'guvcdrkuj gf 'CFC'etkgtkc''cpf 'uvcpf ctf u'\*HB''cpuy gtgf " pq+'y gp''y g'f guki p'r rcpu'cpf 'c'Vgej pkecm{ 'Kphgcukdrg'Hqto '\*VKH+'kf gp\kh{kpi ''y g'tgcuqpu'y cv' y qug'tgs whtgo gpvu'ecppqv'dg"o gv'o wuv'dg"uwdo kwgf "vq"y g'CFC"eqo o kwgg"\*H4+0**K**a'y g'f guki p" cpf "VKH'ctg"ceegr vgf "\*1 4"cpuy gtgf "{ gu+: "vj gp" vj g"f guki p"ku'i kxgp" vq "c"eqp vtcevqt "vq "cwgo r v'vq" dwkrf ''y g''pgy ''ewtd''tco r ''cu''f guki pgf "\*K3+0'K6'y g''VK+f'ku''pqv''ceegr vgf . ''y gp''kv'o wuv'dg''o qf khgf '' dcugf "qp"eqo o gpvu"cpf "tgxkukqpu"cpf "tguvdo kvgf "\*K4+"K6'ý g"ukvg"r quuguugu"f guki p"hgcvvtgu"ý cv" r tgenwf g"c"tco r "f guki p"yj cv'o ggwl"guvcdnkuj gf "etkygtkc"cpf "uvcpf ctf u"\*HB"cpuy gtgf "{gu+."yj gp"yj g" f guki p"o c{"dg"uwdo kwgf "vq"y g"RgppFQV"CFC"9"\*1 3+0Kt"y g"eqo o kwgg"f qgu"pqv"crrtqxg"y g" f guki p. 'y gp'ks'o wuv'dg'o qf khkgf 'dcugf 'qp''eqo o gpwl'cpf 'uwi i guvgf 't gxkukqpu'\*J 3+0'Ki'kv'ku'' crrtqxgf. "y gp"c"eqpytcevqt"o c{ "tgo qxg"y g"tco r "ki"qpg"gzkuvu"cpf "y gp"dwkrf "y g"pgy n{ "f guki pgf" tco r "\*K3+0K6'c"eqpvtcevqt"f kueqxgtu'y g'f guki p'ku'pqv'vgej pkecm{ 'hgcukdrg. 'hqt 'kpuvcpeg. 'f wg'vq"cp" wpmpqy p'uwduwthceg'hgcwtg'uwej ''cu''c'r krg. ''y gp''c''VKH'hqto ''o wuv'dg''uwdo kwgf '\*H4+''cpf ''ceegr vgf '' \*1 4+0Ka'y g"eqpytcevqt "kpuvcmu'y g'tcor cu'f guki pgf "cpf "crrtqxgf. 'y gp"kv'ecp"dg kpur gevgf "\*M4+0' Ki'y g'kpur gevkqp'uj qy u'y g'ewtd'tco r 'f qgu'pqv'eqo r n{ 'y ky 'CFC'tgi wrcvkqpu'cpf 'kv'f qgu'pqv' j cxg"cp"ceegr vgf "VKH "vj gp"vj g"pqp/eqo r nkcpv"tco r "o wuv"dg"vqtp"f qy p"\*MB+"cpf "vj gp"tgdwkn/\*K3+0" Kä'yj g'tco r 'ku'eqo r ncpv'qt "cnki pu'y kyj 'ku'ceegr vgf 'VKH 'yj gp"c'EU/6623'hqto 'ku'eqo r ngvgf "cpf " wr ngcf gf "\q"c"f cvcdcug"\*N3+"cpf "\y g"r tqeguu"ku"eqo r ngvg0

Vj ku'f gvckrgf "qwxkpg''uj qy u''y cv''y gtg"ctg"o cp{ "f khigtgpv'eqpvkpi gpekgu"cpf "r rcegu'hqt 'y g"r tqeguu" vq"dg"f gtckrgf 0KV'cnq"f go qpuvtcvgu''y cv'y gtg"ctg"c'hgy "ej qkegu''y cv'ewtd"tco r "f guki pgtu'o wuv" o cng''y cv'i wkf g''y gkt "f guki p='pco gn{.''y ku'kpenwf gu''y g''ugrgevkqp"qh''y g''v{r g''qh''uwtxg{ "f cvc0 Dgrqy .''y g''cf xcpvci gu'cpf 'f kucf xcpvci gu''qh''f khigtgpv''v{r gu'qh''uwtxg{ "o gcuwtgo gpv'ctg"f kuewugf 0' Kp"cf f kkqp.''y g''ewttgpv'cpf 'r qvgpvkcn'hwwtg''tqrg"qh''y g''EKU''qqn'kp"gcej ''uvgr "qh''y ku'r tqeguu'hrqy " ku'f kuewugf ''dgrqy 0

Utgpi y u'cpf "Y gcnpguugu'qh"Fkhigtgpv'Uttxg{ 'F cvc''Uqvtegu



Cmlkpvgtxkgy ggu'htqo 'Vcuni8''go r j cuk gf 'vj g'i tgcv'ko r qtvcpeg''qh'j ki j /s vcnkv{ 'uvvtxg{ 'f cvc'kp''y g

<sup>8&</sup>quot; NKF CT'ku'c'uwtxg{kpi 'o gyi qf 'yj cv'o gcuwtgu'f kucpeg'vq"c'\cti gv'd{ 'kmvo kpc\kpi 'yj g'\cti gv'y kj 'r wngf 'ncugt'hki j v' cpf 'o gcuwtkpi ''yj g'tghrgevgf 'r wngu'y kj 'c'ugpuqt0

<sup>9&</sup>quot; Uqo g'F kutlevu'f q''pqv'tgs wktg'tgxlgy "qh'tco r 'f guli pu'y j kej 'o ggv'guvcdrkuj gf 'r ctco gvgtu0J qy gxgt.'o cp{" f guli pgtuleqpvtcevqtu'r tghgt''y g''eqo o kwgg''q'tgxlgy ''y g'f guli p''vq''eqphto ''y cv'y g'tco r 'ku''eqo r hcpv'y kj kp'' guvcdrkuj gf 'r ctco gvgtu0

ewtd'tco r 'f guki p'r j cug0Vj gug'kpvgtxkgy ggu'uwo o ctk gf ''y g'xctkqwu'v{r gu'qh'uwtxg{ 'f cvc'' eqo o qpn{ 'wugf 'vq''etgcvg''c'5F ''Eqo r wgt/Ckf gf 'F guki p'\*ECF +'o qf gn'qh'y g''dvkn/'gpxktqpo gpv'' uwej ''y cv'c'tco r ''o c{ ''dg''dguv'f guki pgf ''q''uwkv'y g''pggf u''qh'c'r ctvkewrt''ukg0'Kp''i gpgtcn''y g'' kpvgtxkgy ggu'htqo ''Vcun'8'kpf kecvgf ''y cv''y g{ ''r tghgttgf ''c''pqp/eqpvcev'uwtxg{ kpi ''o gy qf ''uwej ''cu'' NKF CT0'J qy gxgt.''y g{ ''gzr rckpgf ''y cv''NKF CT''ku''qhxgp''gzr gpukxg.''ewo dgtuqo g.''cpf ''tgs wktgu'' ur gekcnk gf ''eqo r wkpi ''r qy gt''q'r tqeguu''y g'f cvc0'Cpqy gt''f kucf xcpvci g''q''NKF CT''u{ uvgo u'ku'' y cv'y g{ ''tgs wktg''c''engct''hqg''qh'uki j v'vq''y g''ewtd'tco r .''y j kej ''o gcpu''y cv''qduvtwevkqpu'\*k0g0'ectu.'' r gf guvtkcpu+''o wuv'dg''ceeqwpvgf ''hqt0'Uqo g''ewtd/tco r ''f guki pgtu''kpvgtxkgy gf ''uwi i guvgf ''y cv.''kh'' i kxgp''y g''qr r qtwpkx{ ''q''ugrgev'y gkt''uwtxg{ ''f cvc.''y cv'y g{ ''y qwrf ''ej qqug''NKF CT''hqt''ku''j ki j '' r tgekukqp.''ceewtce{.''cpf ''tguqnwkqp''qh'y g''5F ''ECF ''o qf gn'y cv'kv'etgcvgu0

F gur kg''y kı. 'qhgp''y g''uwtxg{kpi 'j cu'cntgcf { 'dggp''eqo r ngvgf. 'cpf ''tcf kkqpcn'uwtxg{kpi " o gcuwtgo gpv'y ky ''ngxgni'cpf ''o gcuwtgo gpv'y j ggni'ku''uvkni'y g''o quv'eqo o qp''o gy qf ''ceeqtf kpi ''q'' y g'kpvgtxkgy ggu0Dcugf ''qp''y kı. 'y g''tcf kkqpcn'uwtxg{ 'ku''cf xcpvci gqwu''dgecwug''kv'ku''gcukgt ''q'' eqo r ngvg''cpf 'ku'i gpgtcm{ ''nguu''gzr gpukxg0'Ewtd'tco r 'f guki pgtu''uckf ''y cv''tcf kkqpcn'uwtxg{ 'f cvc'' tgs wktgu''o qtg''kpvgtr qncvkqp'kp''ECF ''o qf grkpi ''cpf ''y gtghqtg''i kxgu''y go ''c''ny gt/s wcrkv{ ''o qf grlqh'' y g''dwknv''gpxktqpo gpv0Vj ku''ecp''ko r cev'y g''r tqdcdkrkv{ ''qh''uweeguuhwn'eqpuvt wevkqp''qh'y g''f guki pgf '' ewtd'tco r 0'Kp''cff kkqp. ''j wo cp''gttqt''r megu''c''ncti gt''qng''kp''y g''eqnrgevkqp''qh''tcf kkqpcn'uwtxg{ '' f cvc''xgtuwu''eqo r wcvkqp''o gy qf u''uwej ''cu''NKF CT0

Koʻcf f kkqp. "qpg"ewtd'tco r 'f guki pgt'uwi i guvgf ''y g''wug''qh''pqp/eqpvcev'r j qvqi tco o gvt { " o gyi qf u ''kp'y j kej ''r j qvqi tcr j u''ctg''vcngp''qh''y g''dwkn/'gpxktqpo gpv''cv'tgi wrct''kpvgtxcni''cpf " r tqeguugf ''vq"eqo r wcvkqpcm{ ''r tqf weg''c ''5F ''ECF ''o qf gn'qh''y g''dvkn/'gpxktqpo gpv0'Vj ku'o gyi qf .'' cnj qwi j ''guu''eqo o qp''co qpi ''qwt ''kpvgtxkgy ggu ''ku''c ''r tqo kukpi ''uwtxg{ ''f cvc''uqwteg0' Rj qvqi tco o gvt { .''qt''uwtxg{kpi ''cpf ''o gcuvtkpi ''y kj ''y g''wug''qh''r j qvqi tcr j { .''eqo dkpgu''y g''j ki j gt'' ceewtce{ ''cpf ''r tgekukqp''cu''y gm'cu''pqp/eqpvcev'cf xcpvci gu''qh''NKF CT''y kj ''y g''nyy gt ''equv'cpf '' gcug/qh'wug''qh''tcf kkqpcn'uwtxg{ ''o gyi qf u0Gzco r ngu''qh''uqhvy ctg''r cenci gu''y cv''gpcdng''y ku''v{ r g'' qh'uwtxg{ kpi ''kpenxf g'Eqpvgz vEcr wtg''htqo ''Dgpvrg{ ''U{ uvgo u0'Uqhvy ctg''uvej ''cu''Eqpvgz vEcr wtg'' ecp''dg''wugf ''cmpi ''y kj ''r j qvqi tcr j u''htqo ''gkj gt''c''uvcpf cmpg''eco gtc''qt''o qdkrg''r j qpg/kcdrgv'' eco gtc''vq''r tqf weg''c''f gvckrgf ''5F ''o qf gn'qh''y g''dwkn/'gpxktqpo gpv0

#### Tqng''qh'EKU''Vqqn

Vj g'EKU'\qqn'j cu'c'hgy 'ng{ 'ctgcu'kp'y j kej 'kv'ecp'r tqxkf g'xcnwg'\q'\j g'ewtd'tco r 'r tqeguu0' Vj gug''ctgcu'kpenwf g'\*3+'ewtd'tco r 'kpur gevkqp.'\*4+'cuugv'o cpci go gpv'f gekukqp'o cnkpi 'dcugf 'qp'' j kuvqtkecn'EKU'f cvc.''cpf '\*5+'y g'r qvgpvkcnhqt'r j qvqi tco o gvt { 'xkc''y g'EKU'\cdngv'eqo r wgt0



Kp'ewtd'tcor r'kpur gevkqp.''y g'xcnwg''qh''y g'EKU'\qqn'ku''crrctgpv0Kp''uvgr''MB''qh''y g'rtqeguu'' hqy.''y g'ewtd'tcor r'kpur gevkqp''qeewtu.''cpf 'oc{''gky gt''dg''eqor rgvgf''d{''tcfkkqpcn'ogy qf u \*ngxgni'cpf 'o gcuwtg'y j ggni+'qt'xkc''y g'EKU'vqn0Dg{qpf 'y g''guvcdnkij gf 'dgpghku'qh'y g'EKU'vqn1' kp'kpur gevkqp. 'wikpi 'y g''EKU'ecp'ugco nguun{ 'wr nqcf 'ewtd'tco r 'f cvc'vq''c'f cvcdcug0'Vj ku'f cvc.''qxt'' vko g. 'eqwff 'dg''ceewo wrcvgf 'vq'hqto 'c'hcti g'ugv'qh'f cvc'tgi ctf kpi 'y g''o gcuwtgo gpwi'qh'ewtd'tco r u'' y kj kp''c''ekk{ ''qt''o wpkekr cnkv{0Dcugf ''qp'kpkkcnl'eqpxgtucvkqpu''y kj 'kpvgtxkgy ggu'htqo ''Vcunt8.''y ku'' j kuvqtkecn'EKU'f cvc''eqwff ''dg'wughwh'qp''c'hcti gt''uecrg''y j gp'f gekf kpi ''y j kej ''ewtd'tco r u''vq''tgr rceg'' cpf ''tgdwkrf 'hktw0'Vj gtghqtg.''y g''EKU'vqn1'o c{ ''r tqxg'wughwh'kp''y g''cuugv'o cpci go gpv'qh''ewtd'' tco r u''cpf ''y g''r tkqtkkk cvkqp''qh'tco r u'y j kej ''ctg''y g'hcty guv'htqo ''CF C/eqo r ncpeg''cpf ''y j kej pose the most risk.



Koʻ'cf f kklqp'\q'\j g'kpur gevkqp''cpf ''r qvgpvkcn'j gri hwpguu'kp''cuugv'o cpci go gpv'qh'\j g'EKU'' vqqn'\j gtg''o c{ ''cnuq''dg''r qvgpvkcn'hqt ''wughwpguu'kp'\j g''uwtxg{kpi 'r j cug0'P qp/eqpvcev'' o gcuwtgo gpv'qh'\j g''dwkny'gpxktqpo gpv'xkc''r j qvqi tco o gvt{ ''\*uvgr ''D4''cdqxg+'ku''r quukdrg''wukpi ''y g'' eco gtc''y j kej 'ku'r ctv'qh''\j g''o qdkrg''cdngv'eqo r wgt ''\*Kcf ''O kpk+'cwcej gf ''\q''\j g''EKU'f gxkeg0

Koʻkoxguvki cvkpi ''y g'r qvgpvkcnhqt 'y g'EKU'vcdrgv'eqo r wgt 'kp'r j qvqi tco o gvtke''uvtxg{kpi .'' EqpvgzvEcr wtg'O qdkg''cu'y gmlcu''y g'EqpvgzvEcr wtg''Emywf ''Rtqeguukpi ''Ugtxkeg'htqo 'Dgpvg{'' U{ uvgo u ''y gtg''hqwpf ''cu''gzco r ngu''qhi'uqhwy ctg''y cv'eqwrf ''gpcdrg''y g''EKU'vcdrgv'eqo r wgt ''q''eqmgev'' y ku'nkpf ''qhi'uvtxg{ ''f cvc0'Vj gtg''ctg''cnq''wvqtkcni'htqo ''Dgpvg{ ''U{ uvgo u'kp''y j kj ''y ku''uqtv'qh'f cvc'' ku'wugf ''q''o qf gnl'cpf ''y gp''tgf guki p''cp''CF C/eqo r nkcpv'ewtd''tco r 0P qp/eqpvcev'uvtxg{ '' o gcuwtgo gpv'xkc''r j qvqi tcr j u'ku''cp''kpvgtguvkpi ''o cppgt''kp''y j kej ''y g''EKU'vqqn'o c{ ''r tqxg''q''dg'' wughwn'kp''y g''ewtd''tco r ''f guki p'r j cug.''cpf ''y ku''cr r nkecvkqp''uj qwf ''dg''gzr mtgf ''o qtg''y qtqwi j n{ ''kp y g'hwwtg''vq'kpetgcug''y g'wughwpguu''qhi'y g'EKU'vqqnhqt''ewtd'tcor f guki pgtu0

## Crrgpf lz'C6<Fgvckgf'Ewtd'Tcor'Fgulip'Rtqeguu'Hnqy'Eqpenwukqpu

Vj g''r tqeguu'hny 'f gxgnr gf 'htqo ''j g'kpvgtxkgy gg'kphqto cvkqp''cu''y gm'cu''cf f kkqpcn' tgugctej ''f go qpuvtcvgu''y g''ctgcu'kp''y j kej ''y g''EKU'vqn'o c{''r tqxkf g''xcnwg'kp''ku''ewttgpv'uvcvg. ''cu'' y gm'cu''ctgcu'hqt 'hwwtg''f gxgnqr o gpv'qh''y g''EKU'kp''r ctvkewrct. ''y g''wug''qh''y g''EKU'vcdrgv'eqo r wgt'' q''eqpf wev'r j qvqi tco o gvtke''uwtxg{kpi ''o c{''i tgcvn{ ''kpetgcug''ku''wughwpguu'kp''y g''f guki p''uvci gu Hwty gt. ''y g''eqpvkpwgf ''eqnrgevkqp''qh''EKU'f cvc''qxgt''ko g''o c{''r tqxkf g''xcnwg''qp''c''rcti gt''uecrg''kp'' r tkqtkkl kpi ''egtvckp''tgf guki pu''qt''tgr cktu''qxgt''qy gtu0'Kp''cf f kkqp. ''y g''qwrkpgf ''r tqeguu'hny ''uj qy u'' y g''o cp{''f khigtgpv'f gekukqp''r qkpw''cpf ''y c{'u'kp''y j kej ''y g''ewtd''tco r ''kpuvcmcvkqp''qt''tgr ckt''r tqeguu' o c{''dg''f gm{gf 0'Qxgtcm''y ku''r tqeguu'hny ''xkuvcm{ ''f go qpuvtcvgu''y g'kphqto cvkqp''i cy gtgf ''htqo '' kpvgtxkgy ggu'kp''Vcun'8''cpf ''r tqxkf gu''kpuki j v'kpvq''y g''tqm''qh'y g''EKU'kp''gcej ''uvci g''qh'y g''r tqeguu0

# Crrgpf lz'C7<Kpvgt xlgy gg'Uqwt egu

- "'' I gukpunk "Iqj pcy cp0'Rgtuqpcn' Kpvgtxkgy 048' Ivn{ '423: 0
- "'' Vgrgi c. 'Gf 0'Rgtuqpcn'Kpvgtxkgy 0'; 'C wi wuv'423: 0
- "' Ncpi cp. 'F cxkf 0'Rgtuqpcn'Kpvgtxkgy 0'37'C wi wuv'423: 0
- "'' Uvcpvqp.''Ugcp="Fwqpi.''Vwcp="Fqwijgtv{.''Cpyjqp{0Rgtuqpcn'Kpvgtxkgy042''Ugrvgodgt''423:
- "'' Iqj puqp. 'Eqtg{='Dcej guqp. 'Gf 0'Rgtuqpcn'Kpvgtxkgy 0'43'Ugr vgo dgt '423: 0

# Crrgpf kz'C8<Fgvckgf 'Rtqeguu'Ctej kvgevvtg'Hnqy 'Ej ctv

Ugg'pgzv'r ci g

