

*Fgrctw gpv'qh'*

*Ekxkl'cpf''*

*Eqcuxn*

*Gpi kpggtkpi*

**; fUXi UhY'Gh XYbh  
< UbXVcc\_**

**UF**

**Herbert Wertheim  
College of Engineering**

*Engineering School of Sustainable  
Infrastructure & Environment*

**UNIVERSITY of FLORIDA**

## RWTRQUG<

Vj ku'lpqhto cvkqp'i wkf g'ku'r tqxkf gf "q" { qw'lp'qtf gt "q" hco kktk' g' { qw'y kj "y g'r tgeg' wtu'cpf "hqtto u"cm'r quvg' "cv" [j wr u<1guukg0wh0f wlgugwtegu'ewt gpy'uwf gpyu<](#) "y cv'y kn'dg'w'k' gf "f w'kpi " { qwt "f gi tgg'r tgeguu0J qy gxgt. " { qw'y qwf " htu'v'tghgt "q" { qwt "eqmgi g'ecv'mgi "cpf "y g'I tcf wcv'Uej qqn'u'r qrlkgu'cpf "r tgeg' wtu'cu'q'w'k'p'gf "qp"y g" [j wr u<1i tcf wcv'uej qqr0wh0f w](#) "y gdukg0K'ku'gz'tgo gn' "lo r qtcv'p'y cv' { qw'w'p'f gtucpf "y gug'r tgeg' wtu'cpf "o c'k'p'v'k'p' "y g" r tgegu'kpi "qh'y g'tgs w'k'gf "hqtto u'lp" c' "k'o gn' "o c'p'p'gt0Cnuq. "dg'egt'v'k'p' "q" t'ghgt "q"y g'EEG'F gr ctvo gpy'y gdukg'cv'w'p'f gt " y g' [j wr u<1guukg0wh0f wleeg'I](#) tcf wcv'g'k'k'p' "hqt"y g'o qu'w'r /q/f cv'g'lpqhto cvkqp0

Vj g'Ek'k'k'p'f "Eqcucn'Gpi kpggtkpi "F gr ctvo gpy'hcew'w' { "cpf "u'ch'ctg"j gtg'q"cu'k'u' { qw'lp'gctkpi " { qwt "f gi tgg'cpf " o ggv'kpi " { qwt "h'w'w'g'i qcn0K'ku' { qwt "t'gur qpukd'k'k' { "q"cf j gtg'q"cp { "f gcf r'k'p'g'f cv'gu'y j lej "j cxg'dggp'r wdr'kuj gf "lp"y g" Wp'k'x'gtuk' { "Ec'v'mgi . "y g'ugo guvg't "uej gf w'g'q'h'eqwtugu" "h'w'p'f "qp"y g'Q'h'eg'q'h'y g'Wp'k'x'gtuk' { "T gi k'ut'ct'v'y gdukg'+"cpf "y g" I tcf wcv'Uej qqn'p'f "f gr ctvo gpy'cn'lpqhto cvkqp'cpf "hqtto u0Cnuq. "k'ku'p'gegu'ct { "hqt" { qw'q"dg'lpqhto gf "qh'y g'r tqr gt " r tgeg' wtu. "r qrlkgu. "t'w'gu'cpf "t'gi w'w'v'k'p'u'y cv'o w'u'd'g'h'm'y gf "y j gp'o qxl'kpi "h'q'ty ctf "y kj " { qwt "f gi tgg'tgs w'k'go gpyu0

## QWT'O KUKQP 'CPF 'QDLGEVKGU<

Vj g'o ku'k'qp'qh'y g'F gr ctvo gpy'q'h'Ek'k'k'p'f "Eqcucn'Gpi kpggtkpi "EEG+'ku'q'dw'k'f "w'r qp" c' "r'gcf kpi "r tqi tco "qh" gze'g'v'k'p'cn'v'gcej kpi . "l'p'p'q'x'cv'k'g't'gug'tej . "cpf "f gf k'ec'v'f "ugt'x'leg'd { "o c'k'p'v'k'p'kpi "c' "ut'qpi "ew'ttlew'w'o . "c"j k'j n' { "s'w'k'h'k'gf " cpf "eqo o k'v'g'f "hcew'w' . "q'w'w'p'f kpi "h'cek'k'k'gu. "cpf "gu'g'p'v'k'cn'lp'f kpi "tgs w'k'gf "q" o ggv'r tqi tco "p'gg'f u0Vj g'r tko ct { " qdl'ge'v'k'g'qh'y g'F gr ctvo gpy'ku'q'r tqxkf g'yj g'uw'f gpy'y kj "c'ew'ttlew'w'o "f gu'k' p'gf "q" cee'qo r r'kuj "y tgg'r tko ct { "r w'r qugu<

30' Vq'r tqxkf g'c' "dtqcf "i gpg'tcn'gf w'ec'v'k'p' "y cv'gpj c'p'egu'eqo o w'p'k'ec'v'k'p' "u'k'm'u'cpf "g'p'eqw'tci gu'cm'ct'q'w'p'f "f gx'gn'r o gpy' q'h'uw'f gpyu. "dq'y "lp'f k'k'f w'cm' { "cpf "cu'r tqf w'ev'k'g'o go dgtu'q'h'v'q'ek'v'f .

40' Vq'g'pu'w'g'y q'tqwi j "r tgr ct'v'k'p' "lp"y g' "h'w'p'f co gpy'cn'q'h'ue'k'p'eg' "cpf "gpi kpggtkpi . "cpf

50' Vq'r tqxkf g'c' "h'w'p'f cvkqp' "hqt"y g'r r'p'p'kpi . "f gu'k' p. "eq'p'ut w'ev'k'p' . "cpf "qr g't'v'k'p' "q'h'ek'k'k'gpi kpggtkpi "r tq'lg'eu0

Vj g'r tqi tco "cpf "ew'ttlew'w'o "q" cee'qo r r'kuj "y gug'qdl'ge'v'k'g'u'r gto k'c'i tcf wcv'q"gp'v't "r tce'v'k'g' "cpf "eqo o g'p'eg' "h'k'g' r'p'pi "h'gct'p'kpi "y tqwi j "r tq'h'gu'k'p'cn'f'ce'v'k'k'k'gu'qt "i tcf wcv'uw'f k'gu0

Vj g'uge'q'p'f ct { "qdl'ge'v'k'g'ku'q"gpj c'p'eg'eq'p't'k'd'w'k'p'u'q"y g'U'cv'g. "P cv'k'qp. "cpf "r tq'h'gu'k'p' "y tqwi j "ut'qpi "r tqi tco u'lp" v'gcej kpi . "t'gug'tej "cpf "ugt'x'leg0

## EQO O WP'ECVQKP<

Cp { "q'h'ek'k'cn'eqo o w'p'k'ec'v'k'p' "y cv' { qw't'geg'k'g' "h'qo "y g'Wp'k'x'gtuk' { II tcf wcv'Uej qqn'Eqmgi g'qh' Gpi kpggtkpi IF gr ctvo gpy'q'h'Ek'k'k'p'f "Eqcucn'Gpi kpggtkpi "EEG+'y kn'eqo g'q" { qw'x'k'c' { qwt "[wh0f w](#)" g'o c'k'k'cf f'tgu0K'ku' { qwt " t'gur qpukd'k'k' { "q"ej gen'y ku'o c'k'it'q'w'k'p'gn' "hqt"lo r qtcv'p'f gcf r'k'p'gu'cpf "eqo o w'p'k'ec'v'k'p'u0K' { qw'ej qu'g'q' "k' p'q't'g'y ku'r'k'p'g'qh' eqo o w'p'k'ec'v'k'p' . "k'eq'w'f "lo r c'ev' { qw'p'gi cv'k'gn' "lp"o cp { "y c { u'lp'cn'w'f kpi "p'q'v'd'g'kpi "cd'rg'q"i tcf wcv'g0

## EJ CRVGT'3<TGI KVT'CVKQP

Qp/'Eco r w'u'uw'f gpyu

WHEQWTUG'UEJ GF WNG'? [j wr u<1qps0wh0f whqe1](#)

WHI TCF WC VG'EQWTUG'F GUET'RVKQP U'? "R'g'cug'x'k'k'v'y g'WHI tcf wcv'Uej qqn'u'y gdukg'cpf "[I tcf wcv'Ec'v'mgi](#) "q'x'k'ey " y g'Ek'k'k'p'f "Eqcucn'Gpi kpggtkpi "I tcf wcv'eqwtugu'q'h'gt'gf 0

WHF KTGEVQT [ "?" [j wr u<1f k'ge'v'q' { 0wh0f w](#)

Eq'p'cv'v'lpqhto cvkqp' "hqt"GUUG'CF o k'p'k'ut'cv'qtu. "Hcew'w' { "cpf "U'ch'f'/" [j wr <1y y y Q'gu'k'g0wh0f w'r gqr'rg1](#)

Y j gp' { qw'ctg't'gcf { "q"ug'r'ge'v'eqwtugu'o'r r'g'cug'p'cx'k' cv'g'q"y g'WHEQWTUG'UEJ GF WNG'q'ug'g'y j cv'eqwtugu'y kn'd'g'q'h'gt'gf 0 Vq'h'k'p'f "q'w'b'o q'tg'cd'q'w'c'ur g'ek'h'le'eqwtug'o' { qw'ec'p'w'ug'y g'WHI TCF WC VG'EQWTUG'F GUET'RVKQP U'="cn'gt'p'cv'k'gn' . " { qw' ec'p'go c'k'ne'cm'y g'h'k'v'g'f "lp'ut w'ev'qt "d { "wulpi "y g'WHF KTGEVQT [ 0K' { qw'y cp'v'p'gg'f "cf x'k'ukpi "qt"u'wi i gu'k'p'u'o'h'g'gn'f'g'g'q" l'ps w'k'g'y kj "lp'f k'k'f w'cn'hcew'w' { "lp" { qwt "lp'v't'gu'v'qt " { qwt "ce'cf go le'cf x'k'ut0I tcf wcv'g'h'g'gn'eqwtugu'ctg'cny c { u'7222"

qt"j ki j gt0Wf "q'8'etgf ku'ecp'dg'cngp'cv'yj g'wpf gti tcf wcv'g'xgn'r tqxkf gf "yj g{ 'ctg'g'xgn'5222'qt"j ki j gt'cpf "qwu'kf g'qh'f qwt" f k'ekr'rkpg'ch'gt'qd'vcl'pki "crr'rtqxcn'ltqo "{ qwt'h'cewn'f'cf xkuqt0Wf "eqwtugy qtniO WUV'DG'QWVUK' G'QHF KUE'RNK' GO

### Qp/Eco r wu'Uwf gpv'Tgi kmt cvkqp'Rt qegui

30'F k'uewu'f qwt'f gi tgg'r'ncpu'y kj "{ qwt'cf xkuqt'cpf 'f gekf g'qp'yj g'eqwtugu'f qw'r'ncp'q'v'cng0  
40' Uki p'lp'q'f qwt'[OP GOMHGF W](#)ceeqwpv'cpf 'hqm'y 'yj g'r tqegf wt gu'r quvgf 'hqt'tgi kmt cvkqp0  
50'K'f qw'y kn'p'ggf "q'gptqm'lp'cp{ 'Ekkl'qt'E'qcu'cn'Gpi kpggt'kpi "\$F GRV\$"eqwtugu'cu'yj g{ "ctg'h'kngf "qp'yj g"  
[\\$Uej gf wr'qh'E'qwtugu\\$. 'qdv'cl'c'GUUK'I tcf wcv'E'qwtug'Tgi kmt cvkqp'Hqto "qpr'kpg'cv'yj wr'cl'"](#)  
[y y y Gu'k'g0'wh'gf wlt gu'qwt'egulewtt'gpv'uwf gpw'f ee'wpf gt'EEG'I tcf wcv'Rtqi tco 'hqt u0](#)

Hqt'yj qug'eqwtugu'uj qy p'lp'yj g'Rwd'rkuj gf "Uej gf wr'qh'E'qwtugu'cu'0F GRV0'k'ku'p'gegu'uct{ "q'i g'v'yj g'uge'v'kqp"  
pwo dgt'ltqo "yj g'f gr ctvo gpv'gcej kpi "yj g'eqwtug0Vj g'f gr ctvo gpw'u'ug'yj ku'u'ugo "q'eqp'v'q'n'yj cv'uge'v'kqp'hqt"  
c'xct'kgv' "qh't'gcu'pu. 'k'g0'yj g'encu'k'k'ec'v'kqp'g'xgn'qh'u'w'f gpw. "f guki p'gr'ge'v'k'g. 'y ckl'kpi 'hqt'yj g'q'yj gt'uge'v'kqp'q"  
h'kn'wr. "gve0Uki pcw't'gu'ct'g'tgs wlt gf 'ltqo "yj g'lp'ut'w'eqt'qh'yj g'eqwtug'cpf "yj g'u'w'f gpw'u'ej ckt'qp'yj g'I tcf wcv'g"  
E'qwtug'Tgi kmt cvkqp'Hqto "q'tgi kngt'hqt'cp{ "qh'yj g'eqwtugu'h'kngf "dgn'y 0

Ekkl'EI P'8; 27.'EI P'8; 32.'EI P'8; 62.'EI P'8; 93.'EI P'8; 96.'EI P'9; 9; . 'EI P'9; : 2.'GI P'7; 6; "  
E'qcu'cn'GQE'8; 27.'GQE'8; 56.'GQE'8; 93.'GQE'9; 9; . 'GQE'9; : 2.'GI P'7; 6;

P'qvg'cl'p'cf f k'kqp'q'yj g'eqwtugu'h'kngf "cd'q'x'g. "q'yj gt'f gr ctvo gpw'u'k'g0'Dw'kf kpi 'E'qpu't'w'ek'qp. "Gp'x'k'q'po gp'v'cn'  
Gpi kpggt'kpi "Uel'g'pegu. "gve0'w'ug'yj g'eqp't'q'm'gf "uge'v'kqp'F GRV0Vj g'u'w'f gpv'o wu'v'qd'vcl'p'r gto k'uk'qp'ltqo "yj g'i tcf wcv'g"  
cf xkuqt'lp'yj g'ur'gek'k'le'f gr ctvo gpv'q'tgi kngt'hqt'yj qug'eqwtugu0

### GUUK'WHGF I G'Uwf gpv'Tgi kmt cvkqp'Rt qegui

WH'GF I G'? "[j wr'cl'wh'gf i g0'wh'gf wlt](#)

WH'GF I G'E'QWTUG'NKU'V'? "[j wr'cl'wh'gf i g0'wh'gf wlt qpr'kpg/i tcf wcv'r tqi tco ule'qwtugu](#)

WHI TCF WC VG'E'QWTUG'F GUET'RV'KQP U'? "R'g'cug'x'kuk'yj g'WHI tcf wcv'Uej qqn'u'y gdu'k'g'cpf "[I tcf wcv'g](#)  
[E'cv'cmj "q'x'k'gy "yj g'Ekkl'cp'f 'E'qcu'cn'Gpi kpggt'kpi "I tcf wcv'g'eqwtugu'qh'gt'gf](#)

WHF K'GE VQT[ "? "[j wr'cl'f k'g'ev'qt i g0'wh'gf wlt](#)

Y j gp "{ qw'ctg't'gcf { "q'ug'ge'v'eqwtugu'0'r'ng'cug'p'cx'ki cv'g'q "[j wr'cl'wh'gf i g0'wh'gf wlt qpr'kpg/i tcf wcv'r tqi tco ule'qwtugu](#)"q'ugg"  
y j cv'eqwtugu'y kn'd'g'qh'gt'gf 0Vq 'h'p'f "q'w'o qt'g'cd'q'w'c'ur'gek'k'le'eqwtug'0'f qw'ecp'w'ug'yj g'WHI TCF WC VG'E'QWTUG'  
F GUET'RV'KQP U'c'ngt'p'cv'k'x'gn "{ qw'ecp'go c'k'ne'cn'yj g'h'kngf "lp'ut'w'eqt'd { "wukpi "yj g'WHF K'GE VQT[ 0K'f { qw'  
y cpv'p'ggf "cf xku'kpi "qt'u'wi i gu'k'q'pu'0'h'g'n'lt'gg'q'lp's wlt g'y kj "P cpe { "O e'k'ic'yj . "yj g'GUUK'GF I G'r tqi tco "eq'q't'f k'p'cv'qt0'  
GF I G'u'w'f gpw'u' g'p'gt'cm'f "c'ng'cp { y j gt'g'ltqo "5'q"; "et'gf ku'r gt'ugo gu'gt'0Uwf gpw'ct'g'p'q'v'k'k'gf "x'k'go c'k'i'cv'yj g"  
dgi k'p'k'pki "qh'g'cej "ugo gu'gt'y kj "ur'gek'k'le'lp'h'qto cv'kqp'tgi ctf kpi "yj g'GF I G'r tqi tco "tgi kmt cvkqp0

[ qw'y kn'y qtn'y kj "yj g'GUUK'I tcf wcv'G'ce'f go le'E'q'q't'f k'p'cv'qt'hqt'GUUK'GF I G'tgi kmt cvkqp'ku'w'gu. "r'ng'cug'go c'k'i'  
GF I G'lp's wlt'gu'q "<[ef i gB gu'k'g0'wh'gf w](#)

P QVG<'Vt'cpur qt'v'k'qp'Ng'cf gt'uj k' "GF I G'u'w'f gpw'uj qwf "t'g'cej "q'w'q'F t0U'k'c'U'k'x'ct'co c'nt'kuj p'cp'hqt'eqwtug"  
cf xkugo gpv'[uk'x'cB eg0'wh'gf w](#)

J QNF U'Uwf gpw'eqw'f "j cx'g'j qrf u'tgi ctf kpi "yj g'k'tgi kmt cvkqp'cpf "yj g'ug'y qwf "dg'r quvgf "wpf gt'yj g'u'w'f gpw"

[OP GOMHGF W](#)ceeqwpv'0K'yj gt'g'ct'g'j qrf u'q'p'g'uj qwf "hqm'y "yj g'lp'ut'w'ek'q'pu'r quvgf "hqt'g'cej "j qrf "q'j cx'g'yj g'j qrf "tgo q'x'gf 0'  
K'f'c'tgi kmt cvkqp'hqto "ku'w'do k'w'gf "hqt'r tqeg'ukpi "cpf "yj g'j qrf "j cu'p'q'v'd'ggp'tgo q'x'gf. "yj g'u'nc'h'o go dgt'yj q'r tqeg'ug'u'yj g"  
hqt0 "ecpp'q'v'r tqeg'gf. "yj gt'g'ht'g'yj ku'uj qwf "dg'ej g'eng'f "r tk'qt "q'w'do k'w'kpi "yj g'tgi kmt cvkqp'hqto 0

H'w'n'v'lo g'tgi kmt cvkqp<Qp/eco r wu'i tcf wcv'u'w'f gpw'y kj "h'p'c'p'ek'n'ck'f "p'ggf "q'g'p't'qm'lp"; "et'gf k'j qwtu'lp'yj g'H'cm'cp'f "  
Ur t'kpi "qt": "et'gf k'j qwtu'lp'yj g'U'wo o gt0

H'p'cn'V'gto 'Tgi kmt cvkqp<F w'kpi "yj g'v'gto "y j gp'yj g'f gi tgg'ku'cy ctf gf. "c'u'w'f gpv'o wu'v'd'g'tgi kngt'gf "hqt'cv'h'g'cu'5"et'gf ku'lp"  
h'cn'lt'ur t'kpi "cpf "4"et'gf ku'lp'u'wo o gt0Vj gu'k'u'w'f gpw'o wu'v'g'p't'qm'lp'EI P'qt'GQE'8; 93'cpf "f q'ev'q't'cn'u'w'f gpw'o wu'v'g'p't'qm'





etkgtk'ht'gputkpi 'y g'cecf go le'kpgi tkf 'qh'eqwtug'y qtn0P q'eqwtugu'cnpg'd{ 'eqttgur qpf gpeg'o c{ 'dg'wugf 'hqt'i tcf wcvg' etgf k'qt'vq'o ggv'y g'tgi kntcvkp'tgs vkt go gput'ht'cp'cuukwcpvj kr 0

Vtcpuigt'qhetgf k'ht'dqj 'y g'O cugt'pqp/vj guku' 'y guku'uwf gput'ku'tgs wugvf 'y tqwi j 'uwo kuukp'qh'c'eqo r rvgf " O cugt'pqp/vj tco 'Rcp'qh'Uwf { 'hqt 'hwpf 'j gtg'/'[j wr u<lgauke0wh0f wltguqwt egulewt gpv'uwf gput'0Vj](#) g'r tqi tco 'r np" k'gp'v'k'gu'y g'uwf gput'eqwtugy qtn'vq'dg'eqo r rvgf 'y tqwi j qw'v'j gk'gp'v'k'g'f gi tgg'r np'0Vj gtg'ku'cnuq'cp'ctgc'qp'y ku'hqt " y j gtg'y g'v'cpuht'qh'etgf k'ecp'dg'k'gp'v'k'g'f 0Qpeg'y g'hqt 'ku'uwo kwg'vq'y g'I tcf wcvg'Cecf go le'uchh'vq'dg'r tqeguuf ." y j g'v'cpuht'qh'etgf k'tgs wugv'v kn'y gp'dg'uwo kwg'vq'y g'I tcf wcvg'Uej qqr'0Uwo kuukp'vko ghtco gu'ctg'cu'hqmy u<

**O cugt'pqp/vj guku'/'o k'vgo 'qh'y g'htuv'ugo gugt'O cugt'pqp/vj guku'/'o k'vgo 'qh'y g'ugeqpf 'ugo gugt**

6- 3<Vj gtg'ecp'dg'pq'o qtg'y cp'c'w q/ugo gugt'i cr 'dgw ggp'y g'eqphgttcr'qh'y g'dcej gmt'u'f gi tgg'cpf 'y g'htuv' ugo gugt'qh'y g'o cugt'u'r tqi tco 'k'6- 3'etgf ku'ctg'vq'dg'tgs wugvf 'vq'dg'v'cpuht'gtf 06- 3'hqt u'eqo r rvgf 'chgt'y g' eqphgttcr'qh'y g'dcej gmt'u'r tqi tco 'ctg'pq'cmqy cdrg'0C'o czko wo 'qh'; 'etgf ku'y kn'dg'eqpuk'gtgf 'hqt'c'6- 3'v'cpuht'qh' etgf k'tgs wugv'ht'y g'Ekxk'Gpi kpgt'kpi 'cpf 'Eqcuw'(' Qegcpqi tcr j le'Gpi kpgt'kpi 'r tqi tco 0

Qdvcp'c'eqr { 'qh'f qwt'v'cpuht'ku'w'cpf 'f'kuewu'y g'v'cpuht'qh'etgf ku'y kj "{ qwt'cf xkuqt'0Chgt'f qwt'cf xkuqt'j cu'o cf g" uwi i gukpu'cpf 'eqo r rvgf 'y g'Rtqi tco 'Rcp'qh'Uwf { 'hqt 'k'y kn'dg'r tqeguuf 'd{ 'y g'I tcf wcvg'Cecf go le'Uchh'0C" uwf gput'v'w'dg'gptqngf 'cv'WH'hqt'y gk'k'p'cn'vgo 'qh'gptqng gput'k'c'uwf gput'ej qug'vq'gptqng'cv'cp'q'wukf g'k'p'k'w'k'p'vq'v'cpuht' eqwtugy qtn'vq'y gk'f gi tgg'r tqi tco 'cv'WH'k'o wu'dg'eqo r rvgf 'r tkqt'vq'y g'k'p'cn'vgo 'qh'y g'f gi tgg'r tqi tco 0

Cp'qh'k'k'cn'v'cpuht'v'htqo 'y g'q'y gt'k'p'k'w'k'p'v'w'dg'cxck'cdrg'd{ 'o k'vgo 'qh'y g'ugo gugt'r tkqt'vq'y g'uwf gput'v'k'p'cn' vgo 'hqt'c'v'cpuht'qh'etgf k'tgs wugv'vq'dg'eqo r rvgf 'd{ 'y g'f gr ctvo gput'0Vj gtg'y kn'dg'pq'gzeqr k'p'v'vq'v' ku'cu'cm'v'cpuht'etgf ku' o wu'dg'r tqeguuf 'cpf 'uj qy p'qp'y g'uwf gput'v'cpuht'ku'd' 'y g'uwf gput'v' tcf wcvpi 'ugo gugt 0

Vq'hgt'p'o qtg'cdqw'v'cpuht'etgf k'tgs vkt go gput'cpf 't'g'ut'k'v'k'p'u' r rvcug't'ghgt'vq'y g'[WHI tcf wcvg'Ecvemj](#) 'w'pf gt'f qwt' t'gur gev'xg'f gi tgg'r tqi tco 0

**I tcf wcvg'Eqwtugu'Vcngp'Y j hg'c'P qp/f gi tgg'uggnkpi 'Uwf gpv**

C'Wpk'gtuk'f 'qh'Hqtk'f c'pqp/f gi tgg'uggnkpi 'uwf gput'y j q'uwdugs wgp'v' 'ku'cf o kwg'f 'cpf 'gptqmi'k'p'I tcf wcvg'Uej qqr'o c{ " v'cpuht'w'vq'37'etgf k'y qwtu'qh'7222'qt'8222'rgxgn'eqwtugu'cnpg'0Vj ku'ku'eqp'kpi gput'w'qp'cr r tqxcn'qh'y g'uwf gput'v' cf xkuqt'cpf 'y cv'y g'eqwtugu'o ggv'y g'o k'pko wo 'i tcf g'tgs vkt go gput 0

**WPKGTUK' 'QH'NQTK'F'CI TCF WCVG'UEJ QQN  
VTCXGNPI 'UEJ QNCT'RTQI TCO**

Vj ku'r tqi tco 'ku'f guki pgf 'hqt'c'uwf gput'y j q'y cpw'vq'r ctv'k'c'v'g'cu'c'WH'i tcf wcvg'uwf gput'v'w'g'p'f kpi 'cp'k'p'k'w'k'p'v'qh' j ki j gt'g'ct'p'kpi 'gnugy j gtg.'gk'j gt'y kj k'p'y g'Hqtk'f c'Uc'v'Wpk'gtuk'f 'U'f ugo 'qt'q'wukf g'qh'y g'Hqtk'f c'Uc'v'Wpk'gtuk'f " U'f ugo 'v'dw'y kj k'p'y g'Wpk'gt'Uc'v'g'0Vj g'hqt 'vq'tgs wugv'r ctv'k'c'v'k'p'k'p'y ku'r tqi tco 'ecp'dg'hwpf 'cv'[Vtcxgnkpi](#) " [Uej qqr' 'Hqto 0](#)

**UWRGTXKUQT' 'EQO O KVVGG'PHQTO CVKQP'6'Vj guku'uwf gput'cpf 'P qp/vj guku'uggnkpi 'c'b k'pqt 'k'p'f +**

**PQVG<K'c'uwf gput'ku'r wtuw'kpi 'c'pqp/vj guku'ucugf 'f gi tgg'pq'uw'gt'xkuqt'f 'eqo o kwgg'ku'p'ggf gf .j qy gxgt'y g'uwf gput'v' cf xkuqt'p'co g'y kn'cr r gct'k'p'y g'I IO U'f ugo 'cu'y gk'ej ct'k'cpf 'uj qwf 'dg'k'w'g'f 'qp'y g'r tqi tco 'r np'cu'y gk'ej ct'cu'y gmt'0 K'c'pqp/vj guku'uwf gput'ku'r wtuw'kpi 'c'o k'pqt'ugg'dgmy 0**

**O go dgtuj k'ICrrqlpw gpv**

Uw'gt'xkuqt'f 'eqo o kwgg'uhqt'i tcf wcvg'f gi tgg'r tqi tco u'ctg'pqo k'p'v'g'f 'd{ 'y g't'gur gev'xg'f gr ctvo gput'ej cku' " cr r tqxg'f 'd{ 'y g'eqm'g'f gcp'cpf 'cr r qlp'v'g'f 'd{ 'y g'F gcp'qh'y g'I tcf wcvg'Uej qqr'0Vj g'F gcp'qh'y g'I tcf wcvg'Uej qqr'ku'cp' gz/qh'k'k'q'o go dgt'qh'cm'uw'gt'xkuqt'f 'eqo o kwgg'0Qp'f 'y qug'o go dgtu'qh'y g'h'c'w'w'f 'y j q'j cxg'dggp'cr r qlp'v'g'f 'vq'y g' " i tcf wcvg'h'c'w'w'f 'o c{ 'ugt'xg'cu'o go dgtu'qh'c'uw'gt'xkuqt'f 'eqo o kwgg'w'p'rgu'c'ur gek'cn'cr r qlp'v' gput'ku'eqo r rvgf 'cpf " cr r tqxg'f 0Hqt'y qug'uwf gput'uggnkpi 'c'y guku'ucugf 'f gi tgg.'y g'eqo o kwgg'o wu'eqpuk'v'qh'c'ej ct'k'f'htqo 'y g'uwf gput'v' j qo g'f gr ctvo gput'v'v'f r k'cm'f 'y g'cf xkuqt'+'cpf 'cpq'y gt'i tcf wcvg'h'c'w'w'f 'o go dgt'0J qy gxgt.'k'y g'uwf gput'v'g'rgew'vq'r wtuw'g' "

c'o kpat'vqy ctf 'c'pqp/vj guku'f gi tgg. 'vj g'uwwf gpv'o wuv'uwdo k'vj g'eqo r ngvgf 'uwr gtxkuqt { 'eqo o kwgg'hqto "ugg'O cugtau" Rtqi tco 'Rncp'qh'Uwff { 'hqto +y kj 'vj g'o kpat'tgr tgugpvcxggu'pco g'hqo 'vj g'f gr ctvo gpv'y j gtg'vj g'o kpat'y knidg'qdcvkgf O' Vj ku'o wuv'dg'eqo r ngvgf 'vj g'ugo guvgt 'dghqtg'vj g'uwwf gpv'kpvgf u'vq'i tcf wcvg0K'v'y q'o kpatu'ctg'f guki pcvgf . 'y q' tgr tgugpvcxgu'o wuv'dg'err qkpvgt 'vq'vj g'eqo o kwgg0K'c'uwwf gpv'cpvkr cvgu'o cnkpi 'c'ej cpi g'kp'j ku'qt'j gt'i tcf wcvg' eqo o kwgg. 'j g'qt'uj g'o wuv'f q'uq'pq'rcvgt'vj cp'o kf vgtto 'qh'vj g'hkpcn'i tcf wcvkpi +ugo guvgt0Vj gtg'ctg'P Q'gzegr vkpu'vq' vj ku'f gcf nkg0

## UrgekndCrrqlpwo gpwu

Vj g'uwwf gpv'o c { 'tgs wguv'vj cv'cp'lpf kxf wcn'y kj 'ur geknd's wcn'k'ecvkvulgzr gt'vug'dg'c'o go dgt'qh'vj g'eqo o kwgg0Vj g' uwwf gpv'o wuv'eqo r ngvg'vj g'0Ur geknd'Uwr gtxkuqt { 'Eqo o kwgg'Crrqlpwo gpv'Rgvkvpö"fqwpf "qp'vj g'GUUK" y gdukg+cpf'vj g'uwwf gpwu'ej ckt'o wuv'crr tqxg'vj g'hqto 0Opeg'vj g'hqto 'ku'eqo r ngvg.'vj g'EEGI tcf wcvg'tgeqtf u' ucnh'y knihqy ctf 'vj g'tgs wguv'hqt'eqpukf gtcvqp'd { 'vj g'I tcf wcvg'Uej qqr0

## I TCFGRQKPV'CXGTCTI G

Cu'r gt'vj g'WHI tcf wcvg'Uej qqn'cp { 'i tcf wcvg'uwwf gpv'o c { 'dg'f gplgf 'hwtv' gt'tgi kntcvkp'kh'r tqi tguv'vqy ctf 'eqo r ngvki 'vj g' r tqi tco 'dgeo gu'wpucvukcevt { 'vq'vj g'cecf go le'wpxk'eqnngi g. 'qt'F gcp'qh'vj g'I tcf wcvg'Uej qqr0

Wpucvukcevt { 'uej qnctuj kr 'ku'f ghkpgf 'cu'hcnwtg'vq'o ckvcpk'c'D'cxgtci g'5022+lp'cnly qtnicwgo r vgf 0I tcf wcvg'uwwf gpwu'pggf " cp'qxgtcmI RC'qh'5022'twpecvgf "cpf'c'5022'twpecvgf 'I RC'lp'vj gkt'o clqt '\*cpf'lp'vj g'o kpat. 'kh'c'o kpat'ku'f genrtgf +cv' i tcf wcvkqp0

Uwf gpwu'y kj 'hguv'vj cp'c'5022'I RC'o c { 'pqv'j qnf 'cp'cuukncpvuj kr 'qt'hgmty uj kr 0

## UVGRUVQ'HQNNQY 'VQY CTF'I TCFWCVKQP

## O CUVGT'qhGPI RGGTRPI '6'PQP/VJ GUKUFGI TGG'TGS WKTGO GPVU

" Ego r ngvg'52'qt'o qtg'etgf k'j qwtu'\*cu'crr tqxgf "d { 'cf xkuqt'cpf lqt'eqo o kwgg+  
" O kplk wo 'qh'37'etgf ku'cnngp'lp'o clqt'ctgc  
" O czko wo 'qh'8'etgf ku'qh'5222/6222'ngxgn'eqwtugu. "qwukf g'f gr ctvo gpv'ecp'dg'wugf 'hqt'uwv r qtv'eqwtugu'kh' crr tqxgf "d { 'cf xkuqt  
" Cnly qtm'lpenn'kpi 'tcpuht'etgf k'v'o wuv'dg'eqo r ngvgf 'f wtkpi 'vj g'ugxgp" { gctu'r tgegf kpi 'vj g'f cvg'qp'y j lej 'vj g' f gi tgg'ku'cy ctf gf  
" Dg'egtvcip'vj cv'cm'tcpuht'qh'etgf k'tgs wguv'y gtg'crr nkgf 'vq' { qwt'tgeqtf u'kh' { qw'uwdo kwgf 'c'tgs wguv  
" O kplk wo 'qh'502'I RC'lp'vj g'o clqt'ctgc'cpf 'ewo wcvkxg'ku'pggf gf 'vq'i tcf wcvg  
" Vj g'ugo guvgt 'dghqtg'i tcf wcvkqp. 'vj g'ecpf k'cvg'uj qwv'ej gemiU K O U'vq'o cng'uwtg'vj gkt'f gi tgg'r tqi tco 'cpf'vj g' Uwr gtxkuqt { 'Eqo o kwgg'lp'hqto cvkqp'ku'ceewtcvg0  
" Uwdo k'c'f gi tgg'crr rkecvkqp"d { 'vj g'r quvgf 'f gcf nkg  
" Cff tguv'r wpxkxg'i tcf gu'qp'vj g'tcpuetkr w'y kj 'vj g'I tcf wcvg'Cecf go le'ucnh  
" Tgxkgy " { qwt'eqr { 'qh'vj g'Rtqi tco 'Rncp'qh'Uwff { 'hqto 'vq'dg'egtvcip' { qw'j cxg'o gv'cnlr tqi tco 'tgs wktgo gpwu  
" Ego r ngvg'vj g'GUUK'F gr ctvo gpv'Gzk'Uwtxgf' ( 'tgwtp'ng { u  
CNY C [ UTGHGT'VQ'VJ G'I TCFWCVG'ECVCNQI 'HQT'CNN'QVJ GT'TGS WKTGO GPVU

## O CUVGT'qhUEKPEG'6'PQP/VJ GUKUFGI TGG'TGS WKTGO GPVU

" Ego r ngvg'52'qt'o qtg'etgf k'j qwtu'\*cu'crr tqxgf "d { 'cf xkuqt'cpf lqt'eqo o kwgg+  
" O kplk wo 'qh'37'etgf ku'cnngp'lp'o clqt'ctgc  
" O czko wo 'qh'8'etgf ku'qh'5222/6222'ngxgn'eqwtugu. "qwukf g'f gr ctvo gpv'ecp'dg'wugf 'hqt'uwv r qtv'eqwtugu'kh' crr tqxgf "d { 'cf xkuqt

" Cml'y qtm'lpemxf kpi 'tcpuht'etgf kx'o wuv'dg'eqo r ngvgf 'f wtkpi 'y g'ugxgp' { gctu'r tgeg f kpi 'y g'f cvg'qp'y j lej 'y g'  
 f gi tgg'ku'cy ctf gf  
 " Dg'egtvc kpi 'y cv'cm'itcpuht'qh'etgf k'tgs wguu'y gtg'cr r rkgf 'q' { qwt'tgeqtf u'kh' { qw'uwo kvgf 'c'tgs wguv  
 " O kpo wo 'qh'50'I RC'lp'y g'o clqt'ctgc'cpf 'ewo wv'kxg'ku'pggf gf 'q'i tcf wcvg  
 " Vj g'ugo gungt'dghgtg'i tcf wcvkqp. 'y g'ecpf kf cvg'uj qwf 'ej gemI KO U'q'o cng'umt g'y gk'f gi tgg'r tqi tco 'cpf 'y g'  
 Uwr gtxkuqt { 'Eqo o kvgg'lphtto cvkqp'ku'ceewtcvg0  
 " Uwo k'c'f gi tgg'cr r rkecvkqp'd { 'y g'r quvgf 'f gcf rkp  
 " Cff tguu'r wpxkxg'i tcf gu'qp'y g'tcpuetkr w'y kj 'y g'I tcf wcvg'Cecf go le'uchh  
 " Tgxkgy " { qwt'eqr { 'qh'y g'Rtqi tco 'Rmp'qh'Uwf { 'hqtto 'q'dg'egtvc kpi' { qw'j cxg'o gv'cm'r tqi tco 'tgs wktgo gpv  
 " O ggvy kj " { qwt'cf xkuqt 'q'f gvgto kpg'y j gp'y g'hpcn'gzco kpcvqp'tgs wktgo gpvy km'dg'eqo r ngvgf  
 " Eqo r ngvg'y g'GUUKG'F gr ctvo gpv/Gzk/Uwtxg'f' ( 'tgwtp'ng { u  
 CNY C [ UTGHGT'VQ'VJ GI TCF WCVG'ECVCNQI 'HQT'CNN'QVJ GT'TGS WKTGO GP VU

## O CUVGT'qh'UEKGPEG'tpf 'O CUVGT'QH'GPI RGGT'PI 'VJ GUK'F GI TGG'TGS WKTGO GP VU

" Eqo r ngvg'52'qt'o qtg'etgf k'j qwtu'\*cu'cr r tqxgf 'd { 'cf xkuqt'cpf lqt'eqo o kvgg+  
 " O kpo wo 'qh'37'etgf ku'cngp'lp'o clqt'ctgc  
 " O czko wo 'qh'8'etgf ku'qh'5222/6222'ngxgn'eqwtugu. 'qwuuf g'f gr ctvo gpv'ecp'dg'wugf 'hqt'uw'r qtv'eqwtugu'kh'  
 cr r tqxgf 'd { 'cf xkuqt  
 " Cml'y qtm'lpemxf kpi 'tcpuht'etgf kx'o wuv'dg'eqo r ngvgf 'f wtkpi 'y g'ugxgp' { gctu'r tgeg f kpi 'y g'f cvg'qp'y j lej 'y g'  
 f gi tgg'ku'cy ctf gf  
 " Dg'egtvc kpi 'y cv'cm'itcpuht'qh'etgf k'tgs wguu'y gtg'cr r rkgf 'q' { qwt'tgeqtf u'kh' { qw'uwo kvgf 'c'tgs wguv  
 " O kpo wo 'qh'50'I RC'lp'y g'o clqt'ctgc'cpf 'ewo wv'kxg'ku'pggf gf 'q'i tcf wcvg  
 " Vj g'ugo gungt'dghgtg'i tcf wcvkqp. 'y g'ecpf kf cvg'uj qwf 'ej gemI KO U'q'o cng'umt g'y gk'f gi tgg'r tqi tco 'cpf 'y g'  
 Uwr gtxkuqt { 'Eqo o kvgg'lphtto cvkqp'ku'ceewtcvg0  
 " Uwo k'c'f gi tgg'cr r rkecvkqp'd { 'y g'r quvgf 'f gcf rkp  
 " Cff tguu'r wpxkxg'i tcf gu'qp'y g'tcpuetkr w'y kj 'y g'I tcf wcvg'Cecf go le'uchh  
 " Tgxkgy " { qwt'eqr { 'qh'y g'Rtqi tco 'Rmp'qh'Uwf { 'hqtto 'q'dg'egtvc kpi' { qw'j cxg'o gv'cm'r tqi tco 'tgs wktgo gpv  
 " O ggvy kj " { qwt'uw'r gtxkuqt { 'eqo o kvgg'q'f gvgto kpg'y j gp'y g'hpcn'gzco kpcvqp'tgs wktgo gpvy km'dg'eqo r ngvgf  
 " O ggvy gcf rkp'q'f ghpf 'y g'o cvgtu'y guku'cpf 'hpcn'uwdo kuukp'f gcf rkp'g0Hpcn'gzco 'r cengv'ctg'qecv'w'pf gt  
 y g'hqtto u'hpn'qp'y g'GUUKG'y gduke0Hqmy 'y g'r tqeguu'y cv'ku'qwkpgf 'y gtg0Qpeg'y g'hpcn'gzco kpcvqp'ku'  
 eqo r ngvg. 'y g'cr r tqxgf 'hqtto u'uj qwf 'dg'eqo r ngvgf 'r tkt'q'y g'I tcf wcvg'Uej qqn'f gcf rkp'gu'qpeg'tgegkxg. 'y g'  
 I tcf wcvg'Cecf go le'uchh'y knly qtm'qp'lp'r wkp' { qwt'hqtto u0  
 " Eqo r ngvg'y g'GUUKG'F gr ctvo gpv/Gzk/Uwtxg'f' ( 'tgwtp'ng { u  
 CNY C [ UTGHGT'VQ'VJ GI TCF WCVG'ECVCNQI 'HQT'CNN'QVJ GT'TGS WKTGO GP VU

## FQEVQT'QHRJ KNQUQRJ [

Rtqi tco u'ctg'f gxgnr gf 'qp'cp'lpf kxf wcn'dcuku'q'ucvuh { 'y g'uwf gpv'u'r gtuqpcn'pggf u'cpf 'ectgg't'pvtguu0  
 Eqpuk'gtcdng'rcvkwf g'ku'r quukdg'lp'y g'f gxgnr o gpv'qh'qwuuf g'lpvtguu'q'uw'r qtv'y g'o clqt'ctgc'qh'eqpegpvcvqp0Vj ku'  
 lpvtguv'o c { 'dg'gucdn'gf 'lp'i gmqi { .o cvj go cvku'cpf 'ucvku'eu. 'dwukpgu. 'qy gt'dtcpej gu'qh'gpi kpggtkpi . 'gve0

Vj g'F qevq't'qh'Rj knquqr j { 'f gi tgg'ku'pqv'f ghpf 'lp'vgo u'qh'eqwtug'j qwtu'dw'tcy gt'ku'eqpuk'gtgf 'q'eqpukv'qh'c'  
 hgzkdng'r tqi tco 'ngcf kpi 'q'o cvgt { 'qh'c'hg'f 'qh'npqy ngf i g'cpf 'eqp'kdwkpi 'q'r tqhguukqpcn'f gxgnr o gpv'y tqwi j 'hqtto cni  
 cpf 'lpf gr gpv'uwf { 'cpf 'tugctej 0lp'cm'hg'f u. 'y g'Rj (F 0f gi tgg'tgs wktgu'cv'rcu'; 2'etgf ku'dg { qpf 'y g'dcej gntu'  
 f gi tgg'qt'c'o kpo wo 'qh'82'etgf ku'dg { qpf 'cp'ceetgf kxf 'cpf 'cy ctf gf 'o cvgtu'f gi tgg'hqtto cm { 'f qewo gpvgf 'xlc'y g'  
 O cvgtu'F gi tgg'Cempqy ngf i go gpv'\*r tqeguu'qwkpgf 'dngy +0Cv'rcu'67'etgf ku'qh'cp { 'f qevqtcn'f gi tgg'o wuv'dg'  
 eqo r ngvgf 'cv'y g'Wpkxgtuk { 'qh'Hqtkf c. 'cpf 'lp'cm'ecugu'y g'uwf gpv'o wuv'eqo r ngvg'y g's wcn'h { kpi 'gzco kpcvqp'cv'y g'  
 Wpkxgtuk { 'qh'Hqtkf c0

Vj g'r qne { 'qp'y g'Rgtkf 'qh'Eqpegpvcv'Uwf { 'tgs wktgo gpv'hqt'Rj F 'uwf gpv'j cu'dggp'tgr megf 'd { 'y g'

Vj g'uwr gtxkuqt { 'eqo o kwgg'eqpukuv'qh'hqwt'r tqhguuqtu0K'i gpgtcn'c'o kpo wo "qh'y g'ej ck'cpf'y q'qy gt'o go dgtu" o wu'dg'htqo 'yj g'F gr ctvo gpv'qh'Ekkn'cpf 'Equcun'Gpi kpggtkpi =lp'cff kkkp. 'yj g'ej ck'cpf'qpg'o go dgt'o wu'dg'htqo 'yj g' uwf gpw'o clqt'tgugetej 'ctgc0Cm'o go dgtu'o wu'j cxg'c'i tcf wvg'ercuk'hec'kqp'qh'I H\*1 tcf wvg'Hcewn{ +0Qpg" eqo o kwgg'o go dgt.'hpqy p'cu'y g'gzvgtpcn'o go dgt.'uj qwr 'dg'htqo 'qwu'f g'qh'y g'f gr ctvo gpv'dw'ukm'WH'I H=0

Cmly qtmhqt"j g"i qevqtcg"o wu'dg"eqo r ngvf"y kj k"hxg"ecngpf ct"i gctu"chgt"j g"s wrnh"i kpi "gzco kpcwqp"qt"j ku"  
gzco kpcwqp"o wu'dg"tgr gcwf 0

*O c u g t ) u ' F g i t g g ' C e n p q y i g f i g o g p v ' \* O F C +*

Cmleqwtugu'dg{ qpf 'y j g'o cugtəu'f gi tgg'cngp'c'v'cpqij gt'wpxgtukf 'q' dg'crr rkgf 'q' y j g'Rj (F 0f gi tgg'o wu'dg'cngp' c'v'cp'lpunkwkp'qh'gt'kpi 'c' f'qevqtcn'f gi tgg'cpf 'tgs wkt g'crr r tqxen'qh'y j g'Uwr gtxluqt { 'Eqo o kwgg'Ej ck. 'Eqmgi g'F gcp'cpf. 'd { ' r gvkqp. 'y j g'T tcf wcvg'Uej qqn'qh'y j g'Wpxgtukf 'qh'Hqtkf c0Cmleqwtugu'q' dg'v'cpuhgttgf 'o wu'dg'hwgt' i tcf gf. 'y kj 'c' i tcf g' qh'D'qt'dgwgt. 'cpf 'o wu'dg'f go qpuntcvf 'q'tgrcv'f k'gevn' 'q' y j g'f gi tgg'dgkpi 'uqi j v0Cm'uwej 'v'cpuhgt'tgs wguw'o wu'dg' o cf g'd { 'r gvkqp'pq'rwgt'y j cp'o k'vgo 'qh'y j g'y k'f 'ugo gugt'qh'Rj (F 0uww { 0Vj g'v'cn'pwo dgt'qh'etgf ku'lp'ewf kpi '52'ht'c' r tkt' o cugtəu'f gi tgg+'y j cv'o c { 'dg'v'cpuhgttgf 'ecppq'v'zeegg'67. 'cpf 'lp'cmlecu'g'y j g'uww gpv'o wu'eqo r rgv'y j g's wckh' kpi " gzco kpcvkp'c'v'y j g'Wpxgtukf 'qh'Hqtkf c0K'cf f k'kqp. 'cp { 'r tkt' i tcf wcvg'rgxgn'etgf ku'gctpgf 'c'v'y j g'Wpxgtukf 'qh'Hqtkf c'lp' y j g'uco g'f k'uekr k'p'o c { 'dg'v'cpuhgttgf 'lpv'y j g'f qevqtcn'f tqi tco 'c'v'y j g'f k'uetg'vkp'qh'y j g'Uwr gtxluqt { 'Eqo o kwgg0Cp { 'r tkt' i tcf wcvg'rgxgn'etgf ku'gctpgf 'c'v'y j g'Wpxgtukf 'qh'Hqtkf c'lp'c'f k'htg'p'v'f k'uekr k'p'o c { 'dg'v'cpuhgttgf 'lpv'y j g'f qevqtcn' r tqi tco 'c'v'y j g'f k'uetg'vkp'qh'y j g'Uwr gtxluqt { 'Eqo o kwgg'cpf 'd { 'r gvkqp'q' y j g'T tcf wcvg'Uej qqn'0K'uwej 'ecugu'k'ku'guugp'v'cn' y j cv'y j g'r gvkqp'f go qpuntcv'g'y j g'tgrxcpeg'qh'y j g'r tkt'eqwtug'y qtm'v'y j g'f gi tgg'r t'gugp'v'f dgkpi 'uqi j v0

Vj g'tgur qpukdrk\ 'tguw'y kj 'vj g'uw' gtxlqt { "eqo o kwgg"q"dcug"ceegr vpeg"qh'i tcf wcvg"tcpuht"etgf kulO F C"  
tgs wguw"qp"guvdrkuj gf "etkgtlc"ht"gpwtkpi 'vj g'cecf go le"kpvi tk\ "qh'eqwtug'y qtnOP q"eqwtugu"cngrp"d\ "eqttgur qpf gpeg"  
o c\ "dg"vugf "ht"i tcf wcvg"etgf k\qt"q"o ggv'vj g'tgi kntcvkp"tgs vkt go gpw'ht"cp"cuukncpvij kr 0



Vq'ngctp'o qtg'cdqw'itcpuhgt'etgf k'tgs wkt go gpw'cpf 'tgutlevkpuu.r ngcug'tghgt 'v'j g'[WHI tcf wcvg'Ecvcmi](#) 'wpf gt'{'qwt' t'gur gev'xg'f gi tgg'r tqi tco 0

## I tcf wcvg'Eqwtugu'Vcngp'Y j kg'e'P qp/f gi tgg'Uwf gpv

C'Wpkxgtuk'{'qh'Hqtkf c'pqp/f gi tgg'uggnkpi 'uwf gpv'y j q'uwdugs wgpw'{'gptqmu'lp'I tcf wcvg'Uej qqn'o c'{'t'cpuhgt'wr 'vq' 37'etgf k'j' qwtu'qh'7222'qt'8222'g'xgn'eqwtugu'v'cngp0Vj ku'ku'eqpvkpi gpv'wr qp'cr r tqxcn'qh'y g'uwf gpv'u'cf xkuqt'cpf 'y cv'y g' eqwtugu'o ggv'y g'o kpo wo 'i tcf g'tgs wkt go gpv0

## WPKXGTUK' 'QHHNQTKFC'I TCFWCVG'UEJ QQN" VTCXGNPI 'UEJ QNCT'RTQI TCO

Vj ku'r tqi tco 'ku'f guki pgf 'hqt'c'uwf gpv'y j q'y cpw'v'q'r ctv'ekr cvg'cu'c'WHI tcf wcvg'uwf gpv'cwgp'f kpi 'cp'lpukwkwqp'qh' j ki j gt'ngctpki 'gnugy j gtg.'gky gt'y kj kp'y g'Hqtkf c'Ucvg'Wpkxgtuk'{'U'ungo 'qt'qwukf g'qh'y g'Hqtkf c'Ucvg'Wpkxgtuk'{' U'ungo 'd'w'y kj kp'y g'Wpkgf 'Ucvgu0Vj g'hqto 'v'q'tgs wguv'r ctv'ekr cvkqp'lp'y ku'r tqi tco 'ecp'dg'hqwpf 'cv'<[Vtcxgnpi](#) " [Uej qnt'Hqto 0](#)

## UWRGTXHUQT' 'EQO O KVVGG'PHQTO CVKQP

### Crr qlpwo gpv

Uwr gtxkuqt'{'eqo o kvggu'hqt'i tcf wcvg'f gi tgg'r tqi tco u'ctg'p'qo kpcvgf 'd'{'y g'tgur gev'xg'f gr ctwo gpv'ej cktu." cr r tqxgf 'd'{'y g'eqmgi g'f gcp'cpf 'crr qlpvgf 'd'{'y g'F gcp'qh'y g'I tcf wcvg'Uej qqn0Vj g'F gcp'qh'y g'I tcf wcvg'Uej qqn'ku'cp" gz/qh'lekq'o go dgt'qh'cm'uwr gtxkuqt'{'eqo o kvggu0Qpn'{'y qug'o go dgtu'qh'y g'h'cewn'{'y j q'j' cxg'dggp'crr qlpvgf 'v'q'y g' i tcf wcvg'h'cewn'{'o c'{'ugtxg'cu'o go dgtu'qh'c'uwr gtxkuqt'{'eqo o kvgg'w'p'guu'c'ur gekn'crr qlpwo gpv'ku'eqo r ngvgf 'cpf " cr r tqxgf 0Vj g'uwr gtxkuqt'{'eqo o kvgg'o wuv'dg'crr qlpvgf 'd'{'o k'f vgt o 'q'h'y g'y k'f 'ugo guvgt 'q'h'gpt qmo gpv'\*ugg'Rj F " Rtqi tco 'Rr'p'qh'Uwf '{'h'qto -0K'c'o k'pqt'ku'f guki pcv'f 'hqt'cp'{'f gi tgg.'y g'eqo o kvgg'o wuv'kpen'f g'qpg'o go dgt'cu'y g' tgr t'gugp'cv'xg'hqt'y cv'r tqr qugf 'o k'pqt0K'w'y q'o k'pqtu'ctg'f guki pcv'f . 'y q'tgr t'gugp'cv'xgu'o wuv'dg'crr qlpvgf 'v'q'y g' eqo o kvgg0K'c'uwf gpv'cp'v'ekr cvgu'o cnkpi 'c'ej cpi g'lp'j' ku'qt'j' gt'i tcf wcvg'eqo o kvgg.'j' g'qt'uj g'o wuv'f q'uq'pq'rcvgt'y cp" o k'f vgt o 'qh'y g'h'kpcn'i tcf wcvkpi '+ugo guvgt0Vj gtg'ctg'P Q'gzegr v'kpu'v'q'y ku'f gcf n'p'g0

### Ogo dgtuj kr

Vj g'Rj (F0Uwr gtxkuqt'{'Eqo o kvgg'uj qwf 'dg'eqo r ngvgf 'd'{'y g'o k'f r qlpv'qh'y g'y k'f 'ugo guvgt'qh'itgi k'utcvkqp0Vj g' i gp'gtcn'f w'ku'cpf 't'gur qpukd'k'k'ku'qh'y g'Uwr gtxkuqt'{'Eqo o kvgg'hqt'y g'f qevqtcn'ecpf k'f cvg'ctg'f guetkdgf 'lp'y g'I tcf wcvg' Ecvmi 0Vj g'Uwr gtxkuqt'{'Eqo o kvgg'eqpuku'qh'hqwt'o go dgtu'ugr'gevgf 'h'qo 'y g'i tcf wcvg'h'cewn'{'0C'v'gcu'v'y q'o go dgtu." k'pen'f kpi 'y g'Ej ckt.'o wuv'dg'h'qo 'y g'uwf gpv'u'j' qo g'f gr ctwo gpv'cpf 'cv'gcu'v'qpg'o go dgt'o wuv'dg'h'qo 'c'f'h'ngtgpv' f gr ctwo gpv'v'q'ugtxg'cu'y g'gzv'gtpcn'o go dgt0

### UrgeknCrr qlpwo gpv

Vj g'uwf gpv'o c'{'tgs wgu'v'y cv'cp'lp'f k'kf wcn'y kj 'ur gekn's wcn'k'ecv'k'p'ulgzr gt'v'ug'dg'c'o go dgt'qh'y g'eqo o kvgg0' Vj g'uwf gpv'o wuv'eqo r ngvg'y g'0Uwr gekn'Uwr gtxkuqt'{'Eqo o kvgg'Crr qlpwo gpv'R'g'v'k'p'o' "h'qwpf 'qp'y g'[GUUG'y edukg+](#) 'cpf 'y g'uwf gpv'u'ej ckt'o wuv'crr tqxg'y g'hqto 0Qpeg'y g'hqto 'ku'eqo r ngvg.'y g'EEGI tcf wcvg'tgeqtf u'v'ch'i'y k'n'hqty ctf 'y g' tgs wgu'v'hqt'eqpukf gtcv'kqp'd'{'y g'I tcf wcvg'Uej qqn0

## I TCFGRQHPV'CXGTCI G

Cu'r gt'y g'WHI tcf wcvg'Uej qqn'cp'{'i tcf wcvg'uwf gpv'o c'{'dg'f gpl'gf 'hwt'y gt'tgi k'utcvkqp'h'r tqi t'guu'v'y ctf 'eqo r ngv'kpi 'y g' r tqi tco 'd'gego gu'w'pucv'k'cevt'{'v'q'y g'cecf go le'w'pk.'eqmgi g.'qt'F gcp'qh'y g'I tcf wcvg'Uej qqn0

Wpucv'k'cevt'{'uej qnt'uj kr 'ku'f gh'p'gf 'cu'h'k'wtg'v'q'o c'k'p'v'k'p'c'D'cxgtci g'\*5022-'lp'cm'y qtn'icwgo r v'g'0I tcf wcvg'uwf gpv'p'ggf

cp'qxgtcm'I RC'qh'5022'twpecvgf "cpf "c'5022'twpecvgf 'I RC'lp'y gkt'o clqt'\*cpf'lp'y g'o lqqt.'h'c'o lqqt'ku'f gerctgf +'cv' i tcf wcvkp0

Uwf gpw'y kj 'rgu'v'j cp'c'5022'I RC'o c{ 'pqv'j qrf "cp'cuukncpvj kr "qt'hgmjy uj kr 0

## NGCXG'QH'CDUGPEG'RQNE[

Vj g'I tcf wcvg'Eqwpekn'cv'y gkt'O c{ '3: . '3; : : . 'o ggkpi . 'cf qr vgf "c'Ngcxg'qh'CDugpeg'Rqrle { 'hqt'cm'f qevqtcn'uwf gpw0' Vj g'r qrle { 'cu'hgmjy u'dgeco g'ghgevkxg'Hcm'Ugo guvgt'3; : : 0

0C'f qevqtcn'uwf gpv'y j q'y kn'pqv'dg'tgi kvgtgf "cv'y g'Wpkxgtukv' "qh'Hmktf c'hqt "c'r gtkqf "qh'o qtg'y cp'qpg" ugo guvgt . 'pggf u'v'q'tgs wguv'y tkwgp'r gto kuukqp'htqo "j kulj gt'f'cewm' "cf xkuqt 'hqt "c'rgcxg'qh'cdugpeg'hqt "c'f guki pcvgf "r gtkqf " qh'ko g0

Vj tgg'ugo guvgtu'qh'eqpugewkxg'pqp/gptqnm gpv'y kn'tguw'lp'f kueqpvpwcvkp'qh'c'r tqi tco "cpf "y g'uwf gpv'y kn' pggf "q'uwdo k'c'tgcf o kuukqp'i tcf wcvg'cr r rkecvkp'v'q'dg'eqpukf gtgf "ci ckp'hqt'tgcf o kuukpu'v'q'y gkt'uco g'r tqi tco 0

## TGUGCTEJ 'RTQRQUCN

Vj g'f qevqtcn'uwf gpv'o wuv'r tgr ctg'cpf "r tguv'p'c'y tkwgp'f qevqtcn'tgugctej "r tqr qucn'f g'xgm'r gf "lp'eqpuwncvkv'y kj "y g" Uwr gtxkuqt { 'Eqo o kwgg'Ej ckt . 'v'q'y g'Uwr gtxkuqt { 'Eqo o kwgg0Vj g'f qevqtcn'uwf gpv'o wuv'y gp'o cng'cp'qtcn'r tguv'p'c'v'q'qh' yj g'r tqr qucn'v'q'y g'Uwr gtxkuqt { 'Eqo o kwgg'r tkqt "v'q'y g's wcrkh{ lpi "gzco kpcvkv'p0

## S WCNH[ KPI 'GZCO

Y tkwgp'cpf "qtcn'eqo r tgi gpukxg's wcrkh{ lpi "gzco kpcvkv'p'ctg'tgs wktgf "qh'cm'Rj (F 0'ecpf kf cvgu0Vj g'gzco u'uj qwf "dg" wcnrp'pq'rcvgt'y cp'y g'hqwt'y 'ugo guvgt'qh'tgukf gpeg'v'qy ctf "y g'f gi tgg0Vj g'Uwr gtxkuqt { 'Eqo o kwgg'j cu'hwm' tgr qpuklkrv' "hqt'y g'hqto wcvkp . 'cf o kpkntcvkv' . 'cpf "gxcnvcvkv'qh'y g's wcrkh{ lpi "gzco 0Ctctpi go gpw'hqt'y g'gzco " u'j qwf "dg'o cf g'lp'eqpuwncvkv'y kj "y g'Uwr gtxkuqt { 'Eqo o kwgg'Ej ckt0Y j gp' { qw'ctg'tgcf { "v'q'uej gf wrg' { qwt'qtcn' f ghgpug . " { qw'o wuv'eqo r rgv'y g'qp/rkp'g' Cf o kuukqp'v'q'Ecpf kf ce { 'hqt "cv<[j wr u<lguukg0hrtgf wlt guqwtegulewtt gpv "](#) uwf gpwul

## CFO KUUKP'VQ'ECPFKFCE[

C'f tcf wcvg'uwf gpv'f qgu'pqv'dgeqo g'c'ecpf kf cvg'hqt'y g'Rj (F 0'f gi tgg'wpv'kfi tcv'v'f "hqt "c'nf o kuukqp'v'q'ecpf kf ce { 0Uwej " cf o kuukqp'tgs wktgu'y g'cr r tqxcn'qh'y g'uwf gpw0Uwr gtxkuqt { 'Eqo o kwgg0Vj g'cr r tqxcn'y kn'dg'dcu'f "qp'3+y g'cecf go le" tgeqtf "qh'y g'uwf gpv'4+y g'q'r kpkp'qh'y g'Uwr gtxkuqt { 'Eqo o kwgg'eqpegtkpi "qxgtcm'hkpguu'hqt'ecpf kf ce { . "5+'cp" cr r tqxgf "f kuugtvcvkv'qr le . 'cpf "6+'uueguu'wle'eqo r rgv'qp'qh'c's wcrkh{ lpi "gzco kpcvkv'cu'f guetkdgf "cdqxg0Cf o kuukqp'v'q' ecpf kf ce { "y kn'dg'o cf g'cu'v'qp'cu'y g's wcrkh{ lpi "gzco kpcvkv'j cu'dggp'r cuugf "cpf "c'f kuugtvcvkv'qr le"j cu'dggp'cr r tqxgf " d { "y g'uwf gpw0Uwr gtxkuqt { 'Eqo o kwgg0Qpeg'cr r tqxgf . "y g'Cf o kuukqp'v'q'Ecpf kf ce { 'hqt "y kn'dg'y qtn'f "qp'd { "y g" Cef go le'Qhleg'hqt'uwdo kuukqp'v'q'y g'I tcf wcvg'Uej qqr0

## VKO G'NKO KU

Vj g'Rj (F 0'f gi tgg'o wuv'dg'eqo r rgv'f "y kj lp'hxg'ecngpf ct' { gct'u'chgt'r cuukpi "y g's wcrkh{ lpi "gzco . "qt'y ku'gzco "o wuv'dg" tgr gcvgf 0Cv'gcu'v'y q'ugo guvgtu'o wuv'gncr ug'dgy ggp'cf o kuukqp'v'q'ecpf kf ce { "cpf "y g'f cvg'qh'y g'cy ctf lpi "qh'y g'f gi tgg0 Vj g'ugo guvgt 'lp'y j lej "y g's wcrkh{ lpi "gzco "ku'r cuugf "ku'eqwv'f "h'y g'gzco "ku'eqo r rgv'f "r tkqt "v'q'y g'o kf /r qkp'v'qh'y g" ugo guvgt0

## HRP CN'GZCO

W'qp'eqo r rgv'qp'qh'y g'f kuugtvcvkv' . "y g'Uwr gtxkuqt { 'Eqo o kwgg'y kn'eqpf wev'c'hkpcn'qtcn'gzco kpcvkv' . 'hgewgf " r tkpek'cm' "qp'y g'f kuugtvcvkv'tgugctej . "cnj qwi j "q'y gt'tgncxcpv'v'qr leu'o c { "cnq'dg'gzco kpgf 0Vj g'gzco kpcvkv'ecp'dg" uej gf wrgf "f wtkpi "y g'v'gto "r tqeggf lpi "y g'ugo guvgt 'lp'y j lej "y g'f gi tgg'ku'v'q'dg'eqphgttgf 0Uwf gpw'ctg'tgr qpukdr'hqt" eqqtf kpcvkv' "y kj "y gkt'Eqo o kwgg'O go dgtu'v'q'uej gf wrg'y g'ko glf cvg'qh'y gkt'gzco 0Vj g'hkpcn'gzco "r cengw'ctg'hqecvgf " wpgt'v'q'g'hqto u'hkpn'qp'y g'[GUUK'Y gduke0Hgmjy](#) "y g'r tqeguu'y cv'ku'qwd'p'gf "y gtg0Qpeg'y g'hkpcn'gzco kpcvkv'ku' eqo r rgv' . "y g'cr r tqxgf "hqt u'uj qwf "dg'eqo r rgv'f "r tkqt "v'q'y g'[I tcf wcvg'Uej qqr'f gcf rkp'g'qpeg'tgeglxgf](#) . "y g'I tcf wcvg'

Cecf go le'uvch'y kn'y qtnlqp'kpr wklpi '{ qwt'hqto u0

## F KUGTVCVKQP 'UWDO KUKQP

I wlf grikpu'eqpegtplpi 'y g'[hqto cv'qh'y g'f kuugtvcvkqp](#)"cpf "grgevtqple'uwdo kuukqp'tgs wkt go gpw'ctg'r wdrkuj gf "d{ 'y g"  
I tcf wcv'Uej qqrI'Gf kqtkcn'Qhleg0Cp{ 's wgunqpu'tgi ctf kpi 'y ku'uj qwrf "dg'f k'gevgf "v'j g'[Gf kqtkcn'Qhleg0](#)Cm'p'qvg'y cv'  
y g'[WO KRtqs wgun'Rwdrkuj kpi 'Ci t ggo gpv'uj qwrf "dg'qdvclpgf 'It qo 'y g'Gf kqtkcn'Qhleg0](#)

## UVGRU'VQ'HQNNQY 'VQY CTF 'I TCF WCVKQP'hqt 'y g'RJ F

" Ego r'ngv'; 2"qt'o qtg'etgf k'j qwtu'\*cu'cr r tqxgf "d{ 'cf xkuqt"cpf lqt'eqo o kwgg+  
" O kpo wo "qh'37'etgf ku'wngp'kp'o clqt'ctgc  
" O czko wo "qh'8'etgf ku'qh'\*5222/6222'ngxgn'eqwtugu.'qwukf g'f gr ctvo gpv.'ecp'dg'wugf 'hqt'uw r qt v'eqwtugu'kh'  
cr r tqxgf "d{ 'cf xkuqt  
" Cm'y qtm'kpenf kpi 'tcpuht'etgf k'z'o wu'dg'eqo r'ngvgf 'f wtkpi 'y g'ugxgp'g'gctu'r tgegf kpi 'y g'f cvg'qp'y j lej 'y g"  
f gi tgg'ku'cy ctf gf  
" Dg'egtclp'y cv'cm'tcpuht'qh'etgf k'tgs wguv'y gtg'cr r rkgf "v'j qwt'tgeqtf u'kh'q'w'uwdo kwgf 'c'tgs wguv  
" O kpo wo "qh'50'I RC'kp'y g'o clqt'ctgc"cpf "ewo wv'xg'ku'pggf gf "v'j i tcf wcv'  
" Ego r'ngv'y g'y tkwgp'cpf "qtn's wcnh'kpi "Cf o k'v'Ec'pf k'ce{ '+gzco  
" Cff tguu'r wplkxg'i tcf gu'qp'y g'tcpuetr w'y kj 'y g'I tcf wcv'Cecf go le'uvch  
" Uwdo k'c'[f gi tgg'cr r rkecvkp](#)"d{ 'y g'r quvgf 'f gcf rkp  
"Á Tgxky "{ qwt'eqr { 'qh'y g'Rtqi tco "Rcp'qh'Uwf { 'hqto "v'q'dg'egtclp'g'q'w'j cxg'o gv'cm'r tqi tco 'tgs wkt go gpw  
"Á Vj g'ugo guvg'tdghqtg'i tcf wcvkp.'y g'ec'pf k'cv'uj qwrf "ej gem'[I KO U](#)'v'q'o cng'uwg'y gk'f gi tgg'r tqi tco 'cpf 'y g"  
Uw r gtxkuqt { 'Eqo o kwgg'kphqto cvkp'ku'ceewt'v'g0  
" Uwdo k'cp'cr r tqxgf "Vtcpuo kwcn'ngwt "eqpcev'[i tcf qhlegB guke0wh0gf w](#)'hqt'y ku'f qewo gpv+  
" O gg'v'[Hku'uwdo kuukqp'f gcf rkp](#)  
" O gg'v'y kj "{ qwt'uw r gtxkuqt { 'eqo o kwgg'v'q'f g'v'gto kpg'y j gp'y g'hkpcn'gzco kpcv'kp'tgs wkt go gpv'y kn'dg'eqo r'ngvgf "  
cpf 'r tqegui'y g'r cr gty qtm  
" F ghgp'f 'y g'Rj F "cpf "o gg'v'y g'hkpcn'uwdo kuukqp'f gcf rkp  
"Á Uwdo k'WO KRtqs wgun'hqto "v'q'[Gf kqtkcn'qhleg](#)  
" Ego r'ngv'y g'[GUUG'F gr ctvo gpv'Gzk'Uw'xgf](#)'( 't'gwtp'ng{u  
CNY C[ UTGHGT'VQ'VJ G'I TCF WCVG'ECVCNQI 'HQT'C'NN'QVJ GT'TGS WKTGO GP VU

## EJ CRVGT'5<'CECF GO KE'J QPGUV[ 'CPF 'EQF G'QHEQPF WEV

## WPKGTUK[ 'RQNE[ 'QP'CECF GO KE'J QPGUV[

### J QPQT'EQFG

Kphqto cvkp'qp'r tqegf wgu'ku'lp'y g'Uwf gpv'I wlf g'cv'y g'hqmy kpi '[ikpm](#)'cpf 'ku'ugv'hqy'j'kp'Hqtkf c'Cf o kplmtcv'xg'E'qf g0'  
Uwf gpw'uj qwrf "cnq'tghgt'v'j '[wru'lii gpgtcreqwpugn0wh0gf w](#)'v'q'qdvclp'ur gekle'kphqto cvkp'tgi ctf kpi 'y g'f k'ekr rkpct { "  
ce'v'qpu'wngp'd{ 'y g'wplxgtuk{ 0k'p'y g'Hcm'qh'3; ; 7.'Wplxgtuk{ 'qh'Hqtkf c'uwf gpw'xqvgf "v'q'gpcev'c'uwf gpv'J qpqt'E'qf g0'  
Vj g'f "cr r tqxgf "y g'hqmy kpi <

### Rtgo dng<

Kp'cf q'v'kpi 'y ku'J qpqt'E'qf g.'y g'uwf gpw'qh'y g'Wplxgtuk{ 'qh'Hqtkf c'tgeqi pl'g'y cv'cecf go le'j qp'guy { 'cpf "  
k'v'gi tk'f "ctg'hwpf co gpv'cn'x'cn'gu'qh'y g'Wplxgtuk{ 'eqo o wplk{ 0Uwf gpw'y j q'gptqni'cv'y g'Wplxgtuk{ 'eqo o k'v'q"  
j qrf kpi 'y go ugr'gu'cpf 'y gk'r ggtu'v'j g'j ki j 'wcpf ctf 'qh'j qpqt'tgs wkt gf "d{ 'y g'J qpqt'E'qf g0Cp{ 'lpf k'kf wcn'y j q"  
dgeqo gu'cy ctg'qh'c'xkq'cvkp'qh'y g'J qpqt'E'qf g'ku'dqwpf "d{ 'j qpqt'v'q'v'cng'eqttge'v'xg'ce'v'kp0C'uwf gpv'twp'J qpqt'  
Eqwt'v'cpf 'h'cew'f "uw r qt v'ctg'etwcln'v'j g'uweguu'qh'y g'J qpqt'E'qf g0Vj g's wcn'f 'qh'c'Wplxgtuk{ 'qh'Hqtkf c"  
gf wcv'kp'ku'f gr gp'f gp'v'wr qp'eqo o wplk{ 'ceegr wpeg'cpf "gphqtego gpv'qh'y g'J qpqt'E'qf g0

**Vj g'J qpqt 'Eqf g'kiδ'δY** g. 'y g'o go dgtu'qh'y g'Wpkxgtuk{ 'qh'Hqtkf c'eqo o wpk{ . 'r ngf i g'vq'j qrf "qwtugrngu'cpf " qwt'r ggtu'vq'y g'j ki j guv'ucpf ctf u'qh'j qpgu{ 'cpf 'lpvgi tks{ 0

**Rngf i g<Qp**"cmly qtmuwo kvgf 'hqt'etgf k'd{ 'uwf gpw'cv'y g'Wpkxgtuk{ 'qh'Hqtkf c. 'y g'hqmy kpi 'r ngf i g'ku'gkj gt" tgs wktgf "qt'lo r nkgf " ðQp'o { 'j qpqt. 'Kj cxg'pgkj gt'i kxgp'pqt'tgegkxgf 'wpcwj qtk gf 'ckf 'lp'f qkpi 'y ku" cuuki po gpvð

## **EJ CRVGT'6<HPCPEKN'O CVVGTU**

S wcnkkgf 'i tcf wcv'uwf gpw'ctg'gnk kdr'g'ht'cuukncpwj kr u'cpf "qy gt'hpcpekn'cy ctf u'Uwf gpw'ctg'gpeqwtci gf "vq" ur gcnly kj 'y g'hcewn{ 'eqpegtkpi 'tugcte'j 'r tqlgew'cpf "cuukncpwj kr u'

## **NGVGTU'QH'QHGT'CPF'CRRQK VO GPV**

Y j gp" { qw'j cxg'dggp'cy ctf gf "cp'cuukncpwj kr . 'c'hwgt'qh'qhgt'y kn'dg'i kxgp'vq' { qw'Vj ku'o wuv'dg'uki pgf "cpf " tgwtpgf "vq'y g'f gr cto gpv'ht'r tqeguulpi 0[ qw'y kn'y gp'tgegkxg'c'Ngwgt'qh'Crr qkpw gpv'Vj ku'hwgt'eqpvkpu'y g" f guetkr vkp'qh'y g'i tcf wcv'cuukncpw'ucrt{ . 'ghgevkxg'f cvgu'qh'crr qkpw gpv.'uwr gtxluqt'cpf 'lqd'f wku0Vj g'Ngwgt'qh' Crr qkpw gpv'o wuv'dg'uki pgf 'd{ 'y g'uwr gtxluqt'cpf "uwf gpv'Vj g'crr qkpw gpw'ctg'uwo kvgf 'd{ 'y g'lpwtwekqp'qh'y g" hcewn{ 'o go dgt'0Ki'y gtg'ku'cp'gttqt'lp'y g'Ngwgt'qh'Crr qkpw gpv.'r ngcug'pqvhl "GUUK'J T'uchh'uq'y g' 'ecp'ej genlqp'k' cpf 'o cng'cp{ 'pgeguuct{ 'ej cpi gu0

## **UK P'WR'HQT'RCI TQNN**

Kp'qtfgt'vq'tgegkxg'c'r c{ ej gem" { qw'o wuv'dg'uki pgf 'wr "qp'r c{ tqn0GUUK'J T'uchh'y kn'ugpf " { qw'cp'go ckn'y kj " lpwtwekpu'tgi ctf kpi 'tgs wktgf 'j k'g'f qewo gpw'cpf "cev'kpu0Vj g'tgs wktgf 'f qewo gpw'lpennf g'c'WU0uqekn'ugewtk{ 'ectf 0' Kpvtpcvkpcn'uwf gpw'y kj qw'c'uqekn'ugewtk{ 'ectf 'y kn'dg'i kxgp'c'vgo r qtct{ 'pwo dgt'cpf 'y kn'gxgpwcm{ 'pggf "vq'crr n{ " hqt'qpg0

## **VWVKQP'Y CKXGT'CPF'HGGU**

[ qwt'wkkqp'y kn'dg'r ckf 'hqt", 'ugo gugt'etgf k'j qwtu'lp'y g'Hcm'cpf "Urtkpi . '8'lp'y g'Uwo o gt0[ qwt'wkkqp'y ckxgt" y kn'twp'chgt'F tqr ICff0[ qw'ctg'tgur qpukdr'ht'r c{ kpi " { qwt'hggv'y cv'ecp'dg'xkgy gf "cv'[j wr u<lehg0xh0f wluwf gpv"](#) [hpcpekn/tguwtegukwttgpv/cpf/hqto.gt/uwf.gpwu4247/48/cecf.go.le/{ gct/wkkqp/cpf/hggul](#)0Vj gtg'o c{ 'dg'c'f gnc{ 'lp'y g" r tqeguulpi "qh" { qwt'wkkqp'y ckxgt'uq'r c{ "c'uo cm'co qwpv'qh'hggv'dghqtg'y g'f gcf nkg0Hcnwt'vq'o ggv'y gug'f gcf nkgu" eqwrf 'tguwn'lp" { qw'dgkpi 'ej cti gf "c'8322022'rv'gg0

Vwkkqp'y ckxgtu'y kn'dg'xqkf gf 'h'y g'crr qkpw gpv'vgo kpcv'u'dghqtg'y g'gpf "qh'y g'ugo gugt. "qt'y g'uwf gpv" y kj f tcy u'htqo 'y g'Wpkxgtuk{ 0Ki'y g'wkkqp'y ckxgt'ku'xqkf gf . 'y g'uwf gpv'ku'tgur qpukdr'ht'y g'gpv'g'co qwpv'qh'wkkqp" cpf 'hggv0

## **GXCNCVKQP U**

K'ku'tgs wktgf 'd{ 'y g'I tcf wcv'Uej qqr'y cv'cp{ 'uwf gpv'j qrf kpi "cp'cuukncpwj kr 'j cxg'c'lqd'r gthqto cpeg'gxcnckqp" f wtkpi 'y g'eqptcev'r gtkqf 'cu'ucv'f 'lp'y g'Ngwgt'qh'Crr qkpw gpv'Uwf gpw'cpf 'hcewn{ 'uwr gtxluqtu'ctg'tgs wktgf "vq'uki p" y g'r gthqto cpeg'gxcnckqp'cpf 'tgwtp'vq'GUUK'J T0

## **KVGTPCVKQPCN'UWV GPVU**

Ki" { qwt'xkuc'g'zr k'gu. 'w'pf gt'pq'ek'ewo ucpegu'ecp" { qw'dg'r ckf 'pqt'ecp" { qw'j cxg'c'wkkqp'hgg'y ckxgt0Kpvtpcvkpcn' uwf gpw'j qrf kpi "cp'H3'xkuc'o c{ 'pqv'y qtnlo qtg'y cp'c'vqcn'qh'42'j qwtu'r gt'y ggn0Vj ku'ku'y g'vqcn'qh'cm'crr qkpw gpw'0 Kp'cf f k'kqp. 'uwf gpw'j qrf kpi "cp'H3'xkuc'o c{ 'pqv'y qtnl'qh'eco r wu0



## EJ CRVGT'7<'UCHGV[

Vj g'xctkqu'ndqtcvqt'ku'qr gtcvgf "d{ 'y g'f gr ctwo gpv'ctg"j c| ctf qwu'y qtnkpi "ctgcu#Vj g'F kxkukqp'qh'Gpxkqpo gpvcrn' J gcnj 'cpf 'Uchgv' 'qh'y g'Wpkxgtukf 'qh'Hnqtkf c'r tqxkf g'qxgtcmi wkf cpeg'lp'y g'ctgc'qh'i gpgtcn'ndqtcvqt { 'uchgv' 0Gcej " ndqtcvqt { 'j cu'ur gekke'tgs wktgo gpw'dcugf "qp'j c| ctf u'cuuqekcvgf 'y kj 'y g'vcun0

Cp{ 's wgunkpu'eqpegtplpi 'uchgv' 'uj qwf 'dg'f kgevgf 'vq'y g'J Y EQG'F kgevt 'qh'Uchgv' 'qt'Ncd'Uchgv' 'Eqqtf kpcvqtu0 Go gti gpe{ 'r j qpg'pwo dgtu'hqt 'y g'Ncd'Uchgv' 'Eqqtf kpcvqtu.'Ekxkicpf 'Eqcucn'Gpi kpggtlpi 'r gtuqppgn'y g'I clpguxkng'Hktg" F gr ctwo gpv'cpf 'y g'WH'Rqleg'F gr ctwo gpv'y kn'dg'r tqo kpgpwl 'f kur rc{ gf 'cv'ugxgtcn'r qkpw'lp'y g'nd'ctgcu0

Tguqwtgu<

Wpkxgtukf 'qh'Hnqtkf c'Gpxkqpo gpvcrn'J gcnj '( 'Uchgv' /"[j wr u dly y y Qj u0wh0gf wj](#)

J gtdgtv'Y gtvj glo 'Eqngi g'qh'Gpi kpggtlpi 'Uchgv' /"[Qhleg"/"j wr u dly y y Qpi 0wh0gf whuchgv' j](#)

## UCHGV[ 'TGNCVGF 'VGNGRI QP G'PWO DGTU

Lco gu'Hggwy qqf .F kgevt 'qh'Uchgv' .J gt dgt v'Y gtvj glo 'Eqngi g'qh'Gpi kpggt lpi

\*574+'4; 6/9; 76

Vc{ nqt 'Tcy rpuqp.'Cukwcpv'Gpi kpggt.'Y ghl'J cmlUt wewt gu( 'O cvgt kn'Ncdqt cvqt {

\*574+'4; 68/5748

GUUK'QHleg

\*574+'5; 4/; 759

Wpkxgtukf 'J gcnj 'Ugtxlegu

\*574+'5; 4/3383

Cnej wc'Eqwpv' 'O gpvcrn'J gcnj 'Etuku'Nlpg

\*574+'486/89; ;

Gpxkqpo gpvcrn'J gcnj '( 'Uchgv'

\*574+'5; 4/37; 3

J c| ctf qwu'Y cwg'O cpci go gpv

\*574+'5; 4/; 622

Y qtngtu'Eqo r gpurvqp

\*574+'5; 4/6; 62

Wpkxgtukf 'Rqleg'F gr ctwo gpv/'\*P qp/Go gti gpe{ +

\*574+'5; 4/3333

Wpkxgtukf 'Rqleg'F gr ctwo gpv/''; 33

I clpguxkng'Hktg'F gr ctwo gpv/''; 33

## EJ CRVGT'8<'EQO RWGT 'UWRRQTV

Vj g'f gr ctwo gpv'qh'Ekxkicpf 'Eqcucn'Gpi kpggtlpi 'ku'pqv't gur qpukng'hqt'o clpvclplpi 'qt'tgr cktlpi 'cp{ 'r gtuqpcn( " qy pgf 'eqo r wgtu0K'uwwf gpw'j cxg'c'r tqdrgo 'y kj 'y gkt"r gtuqpcn'eqo r wgtu.'y g{ 'ecp'tgegkxg'j gr 'htqo 'y g" Wpkxgtukf 'øi'0J GNR'F GUM00Vj g'J gr 'F gumi'ecp'dg'eqpcev'gf 'd{ 'ecnkpi '5; 4/J GNR0Vj g'J gr 'F gumi'uch'h'y kn't{ "vq" cpuy gt'cp{ 's wgunkpu'qt'j gr 'y kj 'cp{ 'r tqdrgo 0K'i'y g{ 'o wuv'iqum'cv' qwt'o cej kpg."{ qw'y kn'p'ggf 'vq'o cng'cp" crr qkpvo gpv'vq'cng'k'vq'y go 0Hqt'kphqto cvkqp'cdqw'eqo r wkp'i ["ugt'xlegu"cv'WH"ceegui"y ku'wtu"](#) [j wr u dly y y Qj u0wh0gf wj gr f gumi](#)

## EJ CRVGT'9<O KUE GNNCP GQWU'VQRKEU

### MG[ 'RQNK[

Mg{ u'y knd'g'cuuki pgf 'q'cm'pgy 'hcewn{ . 'uchh 'xkuklpi 'r tqhguuqtu'qt 'uej qrtu'cpf 'i tcf wcv'uwf gpw'chgt 'c' hcewn{ 'qt' cf o kpkutcvxg'uki pcwtg'j' cu'dggp'qdvclpgf 0

C'eqo r ngvf 'Mg{ 'cpf 'Dwkrf lpi 'Tgs wguv'hqto '\*hqwpf 'qp'y' g'GUUKG'y gdukxg+'o wuv'dg'uwdo kwgf 'q'y' g'tgegr vkpklv' mtecvgf 'lp'587'Y gkl'OC'ng{ 'y knd'y' gp'dg'i kxgp'q'y' g'tgs wguvqt0

Ukpeg'k'ku'f'khlewn'hqt'y' g'ng{ 'eqqtf kpcvqt'q' 't岑if qy p'w'pf gti tcf wcv'uwf gpw'cpf 'r quv'f qe'uwf gpw'ng{ u'ctg' tctgn{ 'tgwtpgf 'cpf 'ctg'wuwcm{ 'r cuugf 'qp'q'y' g'pgzv'i tqwr 'qh'uwf gpw+ 'xkuklpi 'uej qrtu'cpf 'r tqhguuqtu. 'ng{ u'hqt'y' gug' i tqwr u'y knd'qpn{ 'dg'cuuki pgf 'q'y' g'hcewn{ 'o go dgt'qt'y' g'enwd lqti cpl{ cvkqp'ur qpuqt'cpf 'j' g'lu'j' g'y' knd'g'tgur qpukdng'hqt' o clpvcplpi 'y' ku'ng{ 'lpxgpvt{ 'cpf 'tgwtplpi 'y' g'ng{ u'q'y' g'eqqtf kpcvqt'qpeg'uwttgpf gtgf 'd{ 'y' g'j' qnf gt0

Uwf gpw'ctg'tgs wktgf 'q'uwttgpf gt'y' gkt'ng{ u'r tkqt'q'y' g'eqo o gpego gpv'egtgo qp{ OC'j' qnf 'y' knd'g'r megf 'qp'y' g' i tcf wcv'kpi 'uwf gpw'cee'qwpv'wprguu'y' g'ng{ 'ku'tgwtpgf 'r tkqt'q'y' eqo o gpego gpv'0k'p'y' g'ecug'y' cv'c'uwf gpv'y' knd'g' eqpvkplpi 'hqt'hw'y' gt' i tcf wcv'y' qtnlqt'cu'c'r quv'f qe. 'j' g'lu'j' g'uj' qwf 'o ggvy' kj 'y' g'ng{ 'eqqtf kpcvqt'q' lphqto 'j' gt'lj' ko 'y' cv'y' ku'ku'y' g'ecug'0k'p'y' g'uwf gpv'ku'c'r quv'f qe. 'j' kulj' gt'ng{ 'y' knd'g'tgcuuki pgf 'q'y' g'uwf gpw'hcewn{ 'uwr gtxkuqt0

### O CKN

Vj g'F gr ctwo gpv'cn'o cklku'r lengf 'w' cv'crr tqzko cvgn{ ; 37'CO 0k'p{ qw'ctg'o cklpi 'cp{ y' lpi . ' { qw'o wuv'kpenwf g' y' g'r tqge'v'cee'qwpv'pwo dgt0F Q'P QV'WUG'VJ G'WP KGTUW[ 'O CKN'UGT XEG'HQT'RGTUQP CN'WUG0

C'f gr ctwo gpv'cn'o ckl'urk 'o wuv'dg'eqo r ngvf 'k'p{ qw'j' cxg'cp{ 'y' qtnl'g'ngvf 'o ckl'0Rgcug'ugg'y' g'tgegr vkpklv' mtecvgf 'lp'587'Y gkl'J cnd0

Wpkxgt'uk{ 'i gi wrc'v'kpu'r tqj' kdk'r'gtuqpcn'o ckl'q' dg'r tqeguugf 't qo 'f gr ctwo gpv'cn'q'hl'egu0k'p' cf f kklp. 'f q'pqv'wug' y' g'Ekxkl'cpf 'Eqcucn'Gpi kpggtlpi 'F gr ctwo gpv'cf f tguu'qp'r'gtuqpcn'o ckl'\*g'd 0'tgeqtf 'enwdu. 'ej cti g'ectf u. 'dcpn'cee'qwpw. " gve00k'p{ qw'j' cxg'r'gtuqpcn'ugni'wco r gf 'o ckn{ 'q'w'ecp'vcng'k'q'y' g'o clp'q'hl'eg. 'cpf 'k'y' knd'g'o ckgf 'hqt' { qw0

F w'q'y' g'rti g'pwo dgt'q'hl'i tcf wcv'uwf gpw. 'lpf kklf wcn'o ckl'dqzgu'ecppqv'dg'r tqxkf gf 0J qy gxgt. 'y' g'f q'r tqxkf g' o ckl'dqzgu'd{ 'ctgc0'utwewtgu. 't岑pur qtvcvqp. 'gve0'CP{ 'WH'o ckl'y' knd'g'r megf 'lp'y' gug'dqzgu0Dg'uwttg'q'ej genlk'qh'g'p0 k'p{ qw'ej cpi g' { qwt' r tqi tco 'q'c'f k'htg'gpv'ctgc. 'dg'uwttg'q'eqp'cev'y' g'uchh'lp'y' g'I TCE'uq'y' cv'y' g'i tcf wcv'uwf gpv'ku'ecp" dg'e'qttgevgf 'cpf ' { qwt'o ckl'y' knd'g'r megf 'lp'y' g'e'qttge'v'ctgc'o ckl'dqz0

### CWF KQIXUWCN'GS WRO GPV

Vj g'Ekxkl'Gpi kpggtlpi 'O clqt'lp'y' g'Ekxkl'cpf 'Eqcucn'Gpi kpggtlpi 'F gr ctwo gpv'j' cu'ugxgtcn'r kgegu'qh'cw'f kq l'xkuwcn' gs wro gpv'y' j' lej 'ecp'dg'ej gengf 'q'w'hqt' r t'gugpvc'v'kpu'q' 'em'uugu. 'h'pcn'f gh'g'pug. 'gve0'dw'p'q'v'hqt' r'gtuqpcn'wug0

k'p{ qw'y' kuj 'q't'gugtxg'cp'qxgtj gcf 'r tqlgevqt. 'urkf g'r tqlgevqt. 'qt'VX'y' kj 'XET. 'ugg'y' g'EEG'F gr ctwo gpv'Rtqi tco " Cuukncpv'lp'y' g'o clp'q'hl'eg0Ukpeg'y' ku'gs wro gpv'ku'lp'y' ki j 'f go cpf . 'k'ku'uwtpi n{ 'tgeqo o gpf gf 'y' cv' { qw'o cng' { qwt' t'gugtxcv'kpu'ugxgtcn'f c { u'lp'cf xcpeg0

### EQPHGTGPEG'TQQO 'TGUGTXCVKQPU

Uwf gpw'y' j' q'y' qwf 'h'ng'q'w'kl' g'y' g'eqphgtgpeg'tqqo 'o wuv'ugg'y' g'tgegr vkpklv'mtecvgf 'lp'587'Y gkl'J cnd'q' t'gugtxg'y' g'ur ceg'cpf 'ej genl'hqt'cxck'nd'kl' { 0

Tgxkugf ': 0047