

HUVU_cj]ā k YW gY`h j cb < Yfh\ U 6G7 ni HG; < cZZYb\Y]a . A U]bn gW Y]hYfh

<Yfh\U'6G7!GhØfa Yf'<Uf]g'HUVU_cj]ã'ghY\h'_i fn'j cf'Y]bYa
K YWXgY`ni f'HG; '<cZZYb\Y]a ž'k À\fYbX'A U]bn'a]h'@Ugh!
A]bi hY!5b[YVch'gWXY]hYfhY"</pre>

8]Y:i » VU`k Y`h']gh'j c```j cb', VYffUgW\i b[Ybži bX`XYf'[Yd`UbhY K YW\gY`'j cb' < Uf]g'HUVU_cj]ā'j cb' < Yfh\U'6G7'ni f'HG; < cZZYb\Y]a ']gh'Y]b'U_hi Y``Yg'6Y]gd]Y``XUZØf"'8Yf'' \$!'À\f][Y GhØfa Yfž'XYf']b'XYf'j Yf[Ub[YbYb'GU]gcb'&) 'HcfY']b'' - DZ]W\hgd]Y`Yb'ZØf'X]Y'6Yf`]bYf'Yfn]Y`hYž'gW\Y]bh'Y]bYb'bYi Yb GW\f]hh']b'gY]bYf'?Uff]YfY'ni 'k U[Yb"'8Yf'HfUbgZYfdfcnYgg VYgW\fY]Vh'j]Y``a Y\f'U`g'bi f'Y]bYb'gdcfh`]W\Yb'K YW\gY`/Yf'ghY\h]a 'NY]W\Yb'j cb'A Uf_hghfUhY[]Ybž'Z]bUbn]Y``Yb', VYf`Y[i b[Yb'i bX XYf'ghÀbX][Yb'8mbUa]_']a ':i » VU``"

HUVU_cj]ā`\Uh`_Øfn`]W\`XYb`A YX]n]bW\YW_`]b`<cZZYb\Y]a
YfZc`[fY]W\`UVgc`j]Yfhii bX`Y]bYb`J YfhfU[`V]g`&\$&+`i bhYfnY]W\bYhž
k Ug`VYfY]hg`Ui Z`Y]bY`ZYghY`=bhY[fUh]cb`]b`XUg`HYUa `\]bXYi hYh"\8]Y
5V`ÒgYgi a a Y`ZØf`XYb`GhØfa Yf`gc``nk]gW\Yb`j]Yf`i bX`ZØbZ
A]``]cbYb`9i fc``]Y[YbžY]b`VYUW\h`]W\Yf`6YhfU[ž`XYf`Ui Z`gY]bY
@Y]ghi b[`]b`XYf`&"`6i bXYg`][U`\]bk Y]gh"

@YhnhYf J Yfgi WX j cb A U]bn

Jcf:XYa bu\Yni VYg]Y[Y`hYb`K YWXgY``[UV`Yg`bcWX`Y]bYbgdUbbYbXYb`Aca Ybh. 8Yf`%": GJ`AU]bn`\$) \UhhY`gWXY]bVUfjYfgi WXhž`XYb`HfUbgZYf`ni `ghcddYb`cXYf`[Uf`i a ni XfY\Yb"6Yf]WXhYb`ni Zc`[Y`\ÀhhYb`X]Y`F\Y]b\YggYb`_i fn`j cf`XYacZZ]n]Y``Yb`5VgWX`i gg`XYg`8YU`g`Y]b`Y][YbYg`5b[YVch`ZØf`XYbGhØfa Yf`UV[Y[YVYb"`8cWX``Y]XYf`ZØf`AU]bn`_Ua `X]YgYf`Jcfghc»

Y]bZUW\`ni `gdÀh": Øf`X]Y`JYfUbhk cfh`]W\Yb`]b`A U]bn`]gh`Yg VYgcbXYfg`i b[`ØW_`]W\ž`XU`gc`W\Y`@Ugh!A]bi hY!5b[YVchY`\Ài Z][ØVYf`XYb`JYf`Ui Z'j cb`HfUbgZYfg`YbhgW\Y]XYb`_ÒbbYbž`YXcW\`]b X]YgYa`: U```b]W\h`XYb`[Yk ØbgW\hYb`9ZZY_h`Yfn]Y`h`\UVYb"

8]Y'G]hi Uh]cb'nY][h'Y]ba U``a Y\fž'k]Y'7\UbW'b']a ':i » VU```cZha U`g]b'6fi W\hY]`Yb'j cb'GY_i bXYb'j Yf`cfYb'[Y\Yb'_ObbYb'''9]b
YfZc`[fY]W\Yf'HfUbgZYf']gh'b]W\h'bi f'XUg'9f[YVb]g'j cb'[i hYa
J Yf\UbX`i b[g[YgW\]W_ž'gcbXYfb'Ui W\'XUg':Y]b[YZØ\`ž'XYb
f]W\h][Yb'NY]hdi b_h'UVni dUggYb'''A U]bn'k]fX'g]W\'bi b'k c\``ZfU[Yb
a ØggYbž'cV'g]Y'g]W\'X]Y'8]YbghY'j cb'HUVU_cj]ā'b]W\h'Yhk Ug
UbXYfg'\UhhYb'Yf\cZYb'_ObbYb''

< c ZZY b \ Y]a 'j YfghÀf_h'g]WX</pre>

8]Y'HG; '<cZYb\Y]a 'fYU[]Yfh'Ui Z'XYb'5V[Ub['jcb'AUI]a]']Ub
6Y]Yfž'XYf'ZØf'Y]bY'_c`dcfh]YfhY'Gi a a Y'jcb'V]g'ni '' %ž) 'A]``]cbYb
9i fc'ni '6cfi gg]U'8cfha i bX'[Yk YWkgY`h']gh"'A]h'XYf'J YfdZ]Wkhi b[
jcb'5XUa '<`c Y_'jcb'6UmYf'\$('@YjYf_i gYb'ZØf'%, 'A]``]cbYb'9i fc
i bX'bi b'XYa 'K YWkgY`'jcb'HUVU_cj]ā'fØghYh'g]Wk'X]Y'AUbbgWkUZh
ZØf'X]Y'_ca a YbXY'GU]gcb"'9g'gWkY]bhž'XUgg'<cZZYb\Y]a 'gckc\`
cZZYbg]j 'U`g'Ui Wk'ghfUhY[]gWk'[i h'Ui Z[YghY``h']ghž'i a 'Y]bY
YfZc`[fY]WkY'GU]gcb'ni 'UVgc`j]YfYb"

 $: \emptyset f' < Yfh \setminus U' 6G7 \cdot]gh' XYf' 5V[Ub['jcb' HUVU_cj] \tilde{a}' YXcW \cdot Y]b \\ VYXYihYbXYf' GW f]hh']b'Y]bY'bYiY' Y'Y fU'' BUW XYa'a Ub' XYb \\ Gh\emptyset fa Yf']a'Gcaa Yf' & $&' UV \cdot \mathring{O}gYZfY]'jcb' 5ighf]U'K']Yb'[Y \setminus c \cdot h \setminus Uhž'_Ubb' XYf' JYfY]b'bib'a]h'Y]bYa' HfUbgZYfd \(ig' fYW \bYb'' 8Yf K'YW \gY \cdot nY][hž' XUgg' < Yfh \U' 6G7' a <math>\mathring{O}[\]W Yfk'Y]gY'bYi'' ShfUhY[]Yb'ZcfaYb'a <math>\mathring{O}W hY Z'i' a'' a'' a'' fi \ YXYf' b''' U \setminus fk' UggYf' XYf' & ''' 6i'bXYg'][Ug]W 'k [YXYf' ni'' dcg]h]cb]YfYb'''$

5i W. 'UbXYfY'J YfY]bY'\UVYb' \ hYfYggY' Ub'HUVU_cj]ā'[YnY][h"
Ni j cf'[UV'Yg'J YfV]bXi b[Yb'ni a '%": 7'<Y]XYb\Y]a ž'XYf'XYb
Gd]Y`Yf'U`g'5`hYfbUh]j hfUbgZYfg'ZØf'XYb'ni '6cfi gg]U
A ÒbW\Yb[`UXVUW\'[Yk YW\gY`hYb'H]a '?`Y]bX]Ybgh']bg'; YgdfÀW\
[YVfUW\h'\UhhY''@YhnhYbX`]W\'YXcW\']gh'XYf'?i fg'_`Uf.'HUVU_cj]ā
k]fX'VU`X'HY]`'XYf'<cZZYb\Y]a Yf'A UbbgW\UZh'gY]b"

HfUbgZYfdc`]h]_']a : c_i g

8]YgYb'K YWkgY`_ObbYb'k]f'b]Wkh'bi f'U`g'Y]bYb'Gd]Y`YfhfUbgZYf VYhfUWkhYbž'gcbXYfb'U`g'HY]`Y]bYf'[fO) YfYb'HfUbgZYfdc`]h]_ gck c\`gY]hYbg'XYf'J YfY]bY'U`g'Ui Wk'XYf'Gd]Y`Yf"'9g']gh'Y]b Ui ZfY[YbXYf'A ca Ybh']a :: i » VU``ž'k Ybb'Gd]Y`Yf']\fY:: À\][_Y]hYb i bhYf'6Yk Y]g'ghY``Yb'i bX'bYi Y'DYfgdY_h]j Yb'YbhXYW_Yb"'8Yf 8fi W_ž']a ']bhYfbUh]cbU`Yb': i » VU``YfZc`[fY]Wk'ni 'gY]bž']gh'\cW\ž i bX'gc`WkY'K YWkgY`_ObbYb'YbhgWkY]XYbX'ZØf'X]Y'9bhk]W_`i b[XYf'VYhfcZZYbYb'7`i Vg'gY]b"': Øf'X]Y': Ubg'i bX'XUg'[YgUa hY: i » VU``i a ZY`X'k]fX'Yg']bhYfYggUbh'gY]b'ni 'VYcVUWkhYbž'k]Y'g]WkHUVU_cj]ā']b'gY]bYa 'bYi Yb'HYUa 'gWk`U[Yb'k]fX'i bX'k Y`WkY Fc``Y'Yf']b'XYb'_ca a YbXYb'GU]gcbg'ØVYfbY\a Yb'_Ubb"

8]Y'U_hi Y``Yb'HfUbgZYfVYk Y[ib[Yb']a 'XYi hgW\Yb': i » VU```g]bX cZh'b]W\h'bi f'Ui Z'X]Y'Gd]Y`Yf'gY`Vgh'VYgW\f\ab_h\zetagcbXYfb'gd]Y[Y\bUi W\'[f\overline{O}\) YfY'k]fhgW\UZh`]W\Y'i bX'ghfUhY[]gW\Y'HfYbXg'k]XYf"'8Yf KYW\gY``j cb'<Uf]g'HUVU_cj]\ab j cb'<Yfh\U'6G7'ni 'HG; <cZZYb\Y]a 'i bhYfghfY]W\h'X]YgYb'Di b_h''8]Y'JYfdZ]W\hi b['j cb HUVU_cj]\ab '_\Overline{O}\) bhY'U`g'FYU_h]cb'Ui Z'X]Y'ghfUhY[]gW\Y'5i gf]W\hi b['j cb '\czZYb\Y]a 'VYhfUW\hYh'k YfXYb\zetaX]Y']b'XYb'`YhnhYb'\J\fYb Y]bYb'VYa Yf_Ybgk YfhYb'K UbXY``Xi fW\`Ui ZYb'\Uh''8Yf'?`i V'Ui g G]bg\Y]a '\Uh'g]W\'j Yfgh\deltaf_h'Ui Z'Y]bY'\dangle b[Y\zetahU`Ybh]YfhY A UbbgW\UZh'Zc_i gg]Yfh\zeta'i a 'g]W\'`Ub[Zf]gh][']b'XYf'6i bXYg`][U'ni YhUV`]Yfyb"

<cZYb\Y]a `\Uh']b `XYf 'Øb[YfYb `JYf[Ub[Yb\Y]h'a Y\fYfY 'hYi fY
HfUbgZYfg '[YhÀh][hž i a 'g]W\]a `XYi hgW\Yb `Gd]hnYb Z » VU```ni
VY\Ui dhYb " 8]Yg 'nY][hž `XUgg `X]Y `Z]bUbn]Y ``Y `Gd]Y `fÀi a Y `XYf
JYfY]bY ']a a Yf 'bc W\ 'ghUf_'j cbY]bUbXYf `UV\Àb[Ybž `VYgcbXYfg ']a
<]bV`]W_`Ui Z'X]Y '9]bbU\a Yb `Xi fW\ 'HJ!FYW\hY 'i bX 'Gdcbgcf]b["
8 Yf '5 V[Ub['j cb `A Ul]a]`]Ub '6Y]Yf 'ni '6cfi gg]U '8 cfha i bX 'ZØf Y]bY
\c\Y '5 V`ÒgYgi a a Y ']gh'Y]b 'k Y]hYfYg '6Y]gd]Y ``ZØf `X]Y
:]bUbn]Yfi b[ga YW\Ub]ga Yb ']b 'XYf '6i bXYg`][Už 'X]Y 'Ui W\ 'XYb
HfUbgZYfa Uf_h'ghUf_'VYY]bZi ggYb"</pre>

8]Y'k]fhgWXUZh`]WXYb': c`[Yb'XYg'HfUbgZYfg

8]Y 5V ÒgYgi a a Y ZØf HUVU_cj]ã ``]Y[h nk]gWX Yb 'j]Yf i b X ZØb Z A]``]cbYb '9i fcž'k Ug ZØf Y]bYb 'J YfY]b 'k]Y < c ZZYb\Y]a 'Y]b 'j YfhfYhVUfYf '6YhfU[']gh" < Yfh\U '6G7 '\]b[Y[Yb '_Ubb 'a]h X]YgYa HfUbgZYf Y]b 'g][b]Z]_UbhYg 'HfUbgZYfd i g 'Yfk]fhgWX UZhYbž'k Ug]bgVYgcbXYfY ']b 'XYf 'XYfnY]h][Yb '5i Zk ÀfhgVYk Y[i b['XYg'? `i Vg j cb '6YXYi hi b[']gh" 8Yf 'K YWXgY` _ ObbhY 'XYb '6Yf`]bYfb '\Y`ZYbž]\fY 'Z]bUbn]Y ``Y 'G]hi Uh]cb 'ni 'ghUV]`]g]YfYbž'bUWXXYa 'XYf'J YfY]b ']b XYf ``YhnhYb 'NY]h 'a]h' < YfUi gZcfXYfi b[Yb 'ni '_Aa dZYb '\UhhY"

K]Y HfUbgZYfg X]Y HYUa XmbUa]_ VYY]bZ`i ggYb

8]Y'JYfdZ']W\hi b['j cb'HUVU_cj]ā'_ObbhY'Ui W\'X]Y'HYUa XmbUa]_XYf'HG; '<cZZYb\Y]a 'VYY]bZi ggYb"'BYi Y'Gd]Y`Yf'Vf]b[Yb'b]W\h bi f'HU`Ybh'a]hž'gcbXYfb'gcf[Yb'Ui W\'ZØf'Zf]gW\Yb'K]bX']b'XYf ?UV]bY"'Gc'_ObbhY'HUVU_cj]āž'U`g'YfZU\fYbYf'Gd]Y`Yfž'b]W\hibi f Ui Z'XYa 'Gd]Y`ZY`Xž'gcbXYfb'Ui W\']bbYf\U`V'XYf'A UbbgW\UZh'Y]bY k]W\h][Y'Fc``Y'Y]bbY\a Yb"'8]Yg']gh'VYgcbXYfg'YfZcfXYf`]W\ž'XU <cZZYb\Y]a 'g]W\'Ui Z'X]Y'bÀW\ghYb'<YfUi gZcfXYfi b[Yb']b'XYf 6i bXYg`][U'j cfVYfY]hYhž'Y]bgW\`]Y»`]W\'XYf'5bdUggi b['Ub'X]Y Gd]Y`d\]`cgcd\]Y'j cb'HfU]bYf'DY``Y[f]bc'A UhUfUnnc"

 9bhk]W_`i b[Yb']b'XYf'6i bXYg`][U'g]bX'XU\Yf'b]W\h'bi f'ZØf'X]Y ?`i Vg'k]W\h][ž'gcbXYfb'Ui W\'ZØf'XYfYb': Ubgž'X]Y'X]Y 5i gk]f_i b[Yb'X]YgYf'JYfÀbXYfi b[Yb'Ui Z'X]Y'@Y]ghi b[Yb']\fYf@]YV`]b[ga UbbgW\UZhYb'\Ui hbU\'Yf`YVYb"

8 YhU]`g

6Ygi WXYb G]Y i bg Ui Z b!U["XY