

A YI]_Ub]gWX Yg`I bhYfbY\a Yb`ZØ\fh 6`cW_WX U]b!VYhf]YVYbY 7CJ =8!%-!HYghnYfh]Z]_UhY`Y]b

 $8]Y7CJ=8!\%-!?f]gYbdUb]_gWXY]bhg]WXbUWXZUghnkY]$ \J\fYb'Ui Zni `OqYb/FY[]Yfi b[Yb'Ui Z'XYf'[UbnYb'K Y`h qi WXYb 'YXcWX ']a a Yf 'bcWX 'bUWX '≢bqhfi a YbhYbž'i a ']\fY 9| dUbg]cb'ni '_cbhfc'`]YfYb'i bX']\fYb'6Øf[Yfb'X]Y'FØW_Y\f ni a 'bcfa U`Yb'@YVYb'ni 'Yfa Ò[`]WXYb"'9]b'a Yl] Ub]gWXYg I bhYfbY\a Yb j Yfk YbXYh 6 c W_W U]b!HYW bc c []Yži a X]Y $Ni \mid Yf \land gg = Y h \mid cb \cdot 7CJ = 8!\% \cdot !8 = U[bcgYhYghg ni]$ i YfVYggYfbž']bXYa 'Yg'?fmdhc[fUd\]Y'i bX'X]Y'9W\hnY]h! VYfdfØZVUf_Y]h'XYf'6`cW_WXU]b'j Yfk YbXYhž'i a : $A^gWXib[Yb^ibX^6Yhfi['ni^jYf]bXYfb"^?UadZ^[Y[Yb]]$ 7CJ=8!%- 'a]h'XYnYbhfU`Yf'HYW\bc`c[]Y'@Ui h'Y]bYa '6Yf]W\h $XYf' \setminus [qdUb]qWXYb'BUWXf]WXhYbU[Ybhif']DfclD' \setminus Uh'XUq$ $a YX]n]b]gWXY'8]YbghY]ghi b[gi bhYfbY\a Yb'A 8G'Y]bYb$ GWkbY``hYgh!5bkYbXib[g!ibX=bhYfdfYhUh]cbgX]Ybgh'gck]Y $Y \mid b \mid Y \mid D7 \mid F \mid Dfc \mid V \mid b \mid V \mid b \mid U \mid a \mid Y \mid ni \mid < Ui \mid q \mid Y \mid b \mid \mid Y \mid ZØ \setminus fhž \mid X \mid Y$ gdYn]Y Ui Z7CJ =8!%- ni [YgWXb]hhYb g]bX"8]Y 9f[YVb]ggY $k YfXYb & (7 Ua d \wedge Y) d/$

8]Y'7CJ=8!%-!?f]gYbdUb]_'gWXY]bh'g]WX'bUWX'ZUgh'nk Y]'\\\fYbUi Zni `\OgYb/FY[]Yfi b[Yb'Ui Z'XYf'[UbnYb'K Y\h'gi WXYb'YXcWX]a a Yf'bcWX'bUWX'\Dghfi a YbhYbži a ']\\fY'9I dUbg]cb'ni _cbhfc``]YfYb'i bX']\\fYb'6Øf[Yfb'X]Y'FØW__Y\\f'ni a 'bcfa U`Yb@YVYb'ni 'Yfa Oj[`]WXYb"

9]b a YI]_Ub]gWXYg I bhYfbY\a Yb j Yfk YbXYh 6 c W_WX U]b! HYWX bc c []Yži a 'X]Y 'Ni j Yf Agg][_Y]h j c b 7 C J = 8!%-!8]U[bcgYhYghg ni 'j YfVYggYfbž']bXYa 'Yg ? fmdhc [fUd\]Y i bX 'X]Y '9 WX hnY]h!, VYfdfØZVUf_Y]h XYf 6 c W_WX U]b 'j Yfk YbXYhži a : A`gWX i b[Yb ii bX 6Yhfi ['ni 'j Yf\]bXYfb"

? Ua dZ'[Y[Yb'7CJ=8!%-'a]h'XYnYbhfU`Yf HYW\bc`c[]Y

@Ui h'Y]bYa '6Yf]W\h'XYf'\]gdUb]gW\Yb'BUW\f]W\hYbU[Ybhi f']DfcI D \Uh'XUg'a YX]n]b]gW\Y'8]Ybgh'Y]ghi b[gi bhYfbY\a Yb'A 8G'Y]bYb GW\bY``hYgh!5bk YbXi b[g!'i bX' \pm bhYfdfYhUh]cbgX]Ybgh'gck]Y'Y]bY D7F!DfcVYbYbhbU\a Y'ni '< Ui gY'Y]b[YZØ\fhž'X]Y'gdYn]Y```Ui Z 7CJ \pm 8!%- 'ni [YgW\b]hhYb'g]bX"'8]Y'9f[YVb]ggY'k YfXYb'&(Ghi bXYb'gdÀhYf'd\mg]gW\i bX'X][]hU``[Y`]YZYfh'i bX'a]h'6`cW_W\U]b! HYW\bc`c[]Y'nYfh]Z]n]Yfhž'i a 'X]Y'8i fW\ZØ\fi b['XYg'HYghg'i bX'X]Y 5i h\Ybh]n]hÀh'XYf'9f[YVb]ggY']b'9W\hnY]h'ni '[Yk\A\f`Y]ghYb"

K]Y 'Ui Z'gY]bYf'K YVg]hY 'Yf'Ài hYfhž'YfghY``h'A 8 G'Y]bYb'Y]bXYi h][Yb < Ug\ž'XYf'a]h'XYb'9f[YVb]ggYb''YXYg'HYghg'j Yf_bØdZh']ghž'i bX [YbYf]Yfh'Y]bYb'E F!7cXYž'XYf'a]h'Y]bYa 'X][]hU`Yb'NYfh]Z]_Uh'a]h dYfgÒb`]W\Yb'\DZcfa Uh]cbYb'XYf'DYfgcbž'X]Y'XYb'HYgh Xi fW\[YZØ\fh'\Uhž'XYb'Yf\U`hYbYb'9f[YVb]ggYb'i bX'XYa 'ZØf'X]Y JYfk U`hi b['XYg'HYghg'j YfUbhk cfh`]W\Yb'5fnh'j Yf_bØdZh']gh'HYgh i bX'XUg'8 Uhi a ž'Ub'XYa 'XYf'HYghXi fW\[YZØ\fh'k i fXY''

I a 'X]Y'JYfZÀ`gWXi b['bY[Uh]j Yf'9f[YVb]ggY'ni 'j Yfa Y]XYbž'\UVYb k]f'VY[cbbYbž'X]Y'G5FG!7cJ!&!9f_Ybbi b[ghYghg'a]h'6`cW_WXU]b! HYWXbc`c[]Y'i bX'_fmdhc[fUZ]gWXYf'G][bUhi f'ni 'nYfh]Z]n]YfYbž'X]Y X]Y'\DZcfa Uh]cbYb']b'Y]bYa 'Y]bn][Ufh][Ybž'i bj YfÀbXYf`]WXYb'i bX i bj YfÀbXYf`]WXYb'EF!7cXY'gWXØhnhž'XYf'k Y`hk Y]h'j Yf]Z]n]Yfh k YfXYb'_Ubb"

A YI]_c. Dfc!6`cW_W U]bž5bh]!6]hWc]b

A YI]_c^]gh^Y]bYg^XYf^`UhY]bUa Yf]_Ub]gWXYb^@AbXYfz^]b^XYbYb^X]Y 5bk YbXi b[^XYf^6`cW_WXU]b!HYWXbc`c[]Y^VY_UbbhY 5bk YbXi b[gZA``Y^\Uhz^X]Y^ØVYf^XUg^; Y`X^\]bUi g[Y\Yb"

5`g`6Y]gd]Y``YI dYf]a Ybh]YfhY`XYf``c_U`Y`?cb[fYgg`j cb`Ei]bhUbU Fcc']b'7UbW bž'A YI]_cž'a]h'XYa 'I a gYhni b['XYf`@Uk]bY 6`cW_WXU]b'ni f'8][]hU`]g]Yfi b['XYf'5i ZnY]WX bi b[Yb`XYf``c_U`Yb OZZYbh`]WXYb'JYfk U`hi b["'8Ug'DfcY_h'k i fXY']a 'A Àfn'YfZc`[fY]WX i a [YgYhnh'i bX'_cghYhY'*\$\$"\$\$\$ a YI]_Ub]gWXY'DYgcg'f&-\$"\$\$\$ I G8Ł"

8 c W 'X]Y 'K c W Y '\ Uh' XY f'? cb [fYgg 'V Yg W `cgg Y b 'X Y b 'J Y fhf U [b] W h'j Y f` À b [Y f b 'a]h' XY f' 6 Y [fØb X i b [ž' XY f' 9] bg Uhn'j cb 6 `c W_ W U] b 'g Y] 'ZØf 'X]Y '6 Y X Øf Z b]gg Y 'XY f' @ Y []g` Uh] j Y Ø V Y fei U`] Z |n | Y f h ž' X \ X]Y '? cgh Y b 'Ø V Y fk | Y [Y b 'X Y b 'B i hn Y b "

9VYbgc 'X]Y 'B Uh]cbU 'Y '< UbXY `g_Ua a Yf 'ff7 5B 57 C Ł'j cb 'E i YfÅhUfcž A YI]_cž'\ UhhY 'gW\ cb 'Ub[Y_ \emptyset b X][h'X]Y 'J YfZ \emptyset [VUf_Y]h'Y]bYg X][]hU `Yb '=a d Zd UggYgž XYf ']b 'Ni gUa a YbUfVY]h'a]h'XYa

6`cW_WXU]b!I bhYfbY\a Yb`LYfh]Zm'Ui g[YghY``h`k i fXY`i bX`Yg`XYb 9]b\Y]a]gWXYb`Yfa Ò[`]WXYb`k ØfXYž`]\fY`j cb`XYb`6Y\ÒfXYb Ui g[YghY``hYb`d\mg]gWXYb`NYfh]Z]_UhY`bUWX`Y]bYf`NU\`i b[`j cb Yhk U`(\$\$`DYgcg`ni `X][]hU`]g]YfYb"

6Y] XYf:]bUbn]Yfi b['[Yb]Y» h'XYf'9]bgUhn'j cb'?fmdhck À\fi b[Yb']bgVYgcbXYfY'6]hWc]b' 'YXcWX'b]WXh'X]Y'[`Y]WXY'I bhYfghØhni b[j cb'XYb'6Y\ÒfXYb"

8]Y'NYbhfu'VUb_'XYg'@UbXYg'\Uh'VYfY]hg'Y]bY'=b]h]Uh]j Y
[Yghcddh'j ca 'DfÀg]XYbhYb'XYf'6UbWc'5nhYWUži a '6]hWc]b!
?ca dUh]V]']hÀh'Ubni V]YhYbži bX'[Y[Yb'%&
?fmdhck À\fi b[gVÒfgYb'j cf[Y[Ub[Yb'ZØf'X]Y'JYfV]bXi b['ni_f]a]bY''Yb'?UfhY''Yb"'BcW\']b'XYf'j Yf[Ub[YbYb'K cW\Y'gW\`cgg
XYf'DfÀg]XYbh'XYg'@UbXYg'gc[Uf'X]Y'JYfk YbXi b['j cb'6]hWc]b'U'g
[YgYhn']WXYg'NU\`i b[ga]hhY`'Ui g"

Ni a]bXYgh'j cfYfgh'k YfXYb'X]Y':]bUbnfYj c`i h]cb'i bX'X]Y 6`cW_WXU]b!FYj c`i h]cb']b'A YI]_c'U`gc'nk Y]'gY\f'k Y]h'YbhZYfbhY K Y[Y'[Y\Yb"

 $\cdot \, \cdot n$

8 Y hU]`a

6 Ygi WX Yb 'G]Y 'i bg 'Ui Z. '_fmd hc!bYk g"Uh