

F]dd`Y`fLFDŁ'fi hgWXh'i bhYf`\$ž))``ž 6]hWc]b`fl6H7Ł'jYf`]Yfh'&, "\$\$\$``. A Uf_hVYcVUWXhi b[

6]hWc]b '\ Uh'g]W\ 'bUW\ 'XYf' 'Øb[ghYb'Jc`Uh]`]h\ h'YbX`]W\ 'VYfi\][h\ ibX'XYf'JYfa\ O[Ybgk Yfh'k]fX'XYfnY]h'bif'k Yb][Y'NYbh]a YhYf'jcb\ \&, "\\$\"\"Ybh\ZYfbh'[Y\UbXY`h"

8]Y'a Y]ghYb'5`hWc]bg'g]bX'\Yi hY'`Y]W\h']a 'A]bi gž'k cVY]'9H<'i bhYf %", \$\$``fi hgW\h'i bX'LFD'g]W\nk]gW\Yb'\$ž)``i bX'\$ž))`` Y]bdYbXY`h"

6]hWc]b'V`Y]Vh'i bhYf'&, "\$\$\$'` 'ghY\Yb

8] Y 'df]a ÀfY '? fmd hck À\fi b['Z]Y``Ua 'A cbhU['ghUf_'j cb'ØVYf &, "\$\$\$```Ui Z'&*") \$\$```ž'bUW\XYa 'X]Y 'I G'7: H7 'X]Y 'k Y`hk Y]h [fò» hY '6òfgY 'ZØf'X][]hU`Y 'J Yfa Ò[Ybgk YfhY ' '6]bUbWY 'i bX']\fYb 79C' '7\Ub[dYb['N\Uc' 'j Yf_`U[h'\UhhY"'6]hWc]b'V`]YV 'ZØf'Y]b cXYf'nk Y]'HU[Y 'i bhYf'i bX'VY]'Yhk U'&+"\$\$\$`` 'ghY\Ybž'UVYf'X]Y 6i ``Yb'Yf]bbYfhYb'Ub']\fY'5bk YgYb\Y]h'A]hhY 'XYf'K cW\Y"

G]Y XfÀb[hYb XYb J Yfa Ò[Ybgk Yfh'bUW BcfXYb i bX []dZY hYb 'Ua 8 cbbYfghU[']b Y]bYa 'DfY]gUbgh]Y['Ui Z'ØVYf'&- "\$\$\$ " "8]Yg k Uf YXc W 'bi f'j cb'_i fnYf'8 Ui Yfž'XU '6 H7 'gY]bYb '5 i Zk ÀfhghfYbX 'b]W h ZcfhgYhnYb 'cXYf'[Uf'Ui Z'XYa '[`Y]W Yb 'B]j YUi 'V 'Y]VYb '_cbbhY " '9g VY[Ubb 'gW bY `` 'Ub 'K Yfh'ni 'j Yf']YfYb i bX '[]b['Ghi bXYb 'gdÀhYf k]YXYf'Ui Z'&, "\$\$\$ 8 c``Uf'ni fØW_"

8]Y``YhnhYb`&(`Ghi bXYb`VfUW\hYb`k Y]hYfY`GW\a YfnYbž'U`g`X]Y ?fmdhckÀ\fi b[`k Y]hYf'Ui Zi bhYf`&+"*\$\$```Z]Y`"`9g`\Uh`g]W\ gY]hXYa`k]YXYf'Yhk Ug`Yf\c`hž``]Y[h'UVYf']a a Yf'bcW\ii bhYf &, "\$\$\$``"

GY]bY'A Uf_h_Ud]hU`]g]Yfi b[']gh'Ui Z')') 'A]``]UfXYb'8c``Uf
[Ygi b_Yb"'GY]bY'8ca]bUbn'ØVYf'X]Y'5`hg'\Uh'YVYbZU``g'Y]bYb
GW\`U['Yf`]hhYb'i bX']gh'Ui Z'(*'ı '[Ygi b_Ybž'bUW\XYa 'Yf'[YghYfb
ØVYf'(*ž)'ı '[Ygh]Y[Yb'k Uf"

6H7I G8"'HfUX]b[J]Yk

$<65F!FU_YhYbž'LDF'VYfi\]$

 $\label{eq:final_$

 $\ddot{Y} h Y f''' 6] b U b W '7 c] b \ddot{z} 8 c [YWc] b 'i b X 'G \] V U ' = b i 'k Y] g Y b \\ [Yf] b [ZØ[][Y'JYf'i ghY'Ui Zz'k Å \fYb X'A 5H=7 z'GC@'i b X'@H7 \\] b b Y f \ U `V'Y] b Y g' H U [Y g' i a 'V] g' n i '' ' i ' ' n i f Ø W_[Y[Ub[Yb'g] b X''' = a ' Y [YbgUhn' X Uni ' \ UVY b' 58 5 z' 8 C H z' H F L' i b X' 5 J 5 L' i b V Y X Y i h Y b X Y ; Y k] b b Y 'Y f n] Y `h''$

 $<65F^{\circ}]gh^{\circ}XYf^{\circ}VYghY^{\circ}DYfZcfa^{\circ}Yf^{\circ}i^{\circ}bhYf^{\circ}XYb^{\circ}A^{\circ}]X!7Ud!5^{\circ}hYfbUh]j^{\circ}Yb^{\circ}ZbUWXXYa^{\circ}Yf^{\circ}i^{\circ}a^{\circ}-i^{\circ}[^{\circ}Ygh]Y[^{\circ}Yb^{\circ}]gh^{\circ}i^{\circ}bX^{\circ}VY]^{\circ}S^{\sharp}S^{\sharp}+i^{\circ}i^{\circ}[^{\circ}YVBXY^{\circ}h^{\circ}K^{\circ}]fX''$

 $8 \ U'X]Y'a \ Y]ghYb'UbXYfYb'5`hWc]bg'a]h'a]hh`YfYf'i bX'b]YXf][\ YfYfA \ Uf_h_Ud]hU`]g]Yfi b['[Yf]b[ZØ[][Y'JYf`i ghY'j YfnY]WXbYhYbž']gh'X]Y ; YgUa h_Ud]hU`]g]Yfi b['XYg'?fmdhc!A Uf_hYg'Ub'Y]bYa 'HU['i a'' $ A]``]UfXYb'8c``Uf'[YgWXfi a dZh''$

, VYfV`]W_'ØVYf'XYb'?fmdhck À\fi b[ga Uf_h"'?fmdhc'ei Ubh]Z]n]YfYb

8 YhU]`g

6Ygi WXYb G]Y i bg Ui Z _fmdhc!bYk g"Uh