

6fYa Yf'B]`g'x\Ubb]b['hf]i a d\]Yfh'VY] -!6U``!CdYb']b'8Y`a Yb\cfgh

 $B] `g` \approx \ Ubb] b [`[Yk]bbh`X]Y`-!6U``!CdYb`]b`8Y`a Yb \ cfghi b X g Yhnh`g] W `[Y[Yb`*' `Gd]Y`Yf`Xi fW."'9]b`F Ø W_V`] W_`Ui Z`X Ug Hi fb]Yf"$

8 Ug'-!6U``!CdYb']b'8 Y`a Yb\cfgh\Uh']b'XYf'6]``UfX!7ca a i b]hm'ZØf 5 i ZgY\Yb'[Ygcf[h"A]h'ØVYf'*\$'HY]`bY\a Yfb']gh'XUg'Hi fb]Yf'b]W\h bi f'Y]b'VYXYi hYbXYg'9fY][b]g'ZØf'Gdcfh`Yfž'gcbXYfb'Ui W\'Y]b \dispX]_Uhcf'ZØf'X]Y'6Y`]YVh\Y]h'i bX'XUg'K UW\ghi a 'XYf 6]``UfX[Ya Y]bgW\UZh']b'XYf'FY[]cb"'8Yf'6fYa Yf'B]`g'&\Ubb]b[\Uh'g]W\']b'X]YgYa '\disp\f'U`g'Xca]b]YfYbXYf'Gd]Y`Yf'\Yfj cf[YhUb i bX'XYb'H]hY`'[Y\c`h"

; Ya Y]bgWXUZhgYf`YVb]g`]a `< UfXVU```7UZÅ

#D'XYf'Y]b`UXYbXYb`5ha cgd\AfY'XYg'< UfXVU```7UZAg
j YfgUa a Y`hYb'g]W\'6]``UfXgd]Y`Yf'Ui g'XYf'[YgUa hYb'I a [YVi b[ž
i a ']\f'? ObbYb'i bhYf'6Yk Y]g'ni 'ghY``Yb'''K A\fYbX'XYg'Hi fb]Yfg
k i fXY'b]W\h'bi f'i a 'H]hY`'i bX'DfY]g[Y`XYf'[Ygd]Y`hž'gcbXYfb'Ui W\
i a 'X]Y': OfXYfi b['XYg'; Ya Y]bgW\UZhg[YZØ\`g'i bhYf'XYb'Gd]Y`Yfb''
8]Y'[i hY'Cf[Ub]gUh]cb'XYf'J YfUbghU`hi b['k i fXY'j cb'j]Y`Yb
HY]`bY\a Yfb'[YgW\Ahnhž'i bX'XUg'Hf]c'VYghY\YbX'Ui g'GhYd\Ub'j cb
GU`nYbž'Gj Yb!I `f]W\'6`Ub_'i bX'GUgW\U'; Y``bYf'`cVhY'X]Y'dcg]h]j Y
F YgcbUbn'bUW\'Y]bYa '`Ub[Yb'Hi fb]YfhU[ž'XYf'a Y\f'U`g'%(
Ghi bXYb']b'5bgdfi W\'bU\a"</pre>

GhUf_Yf'5i Zhf]hh'XYf'@c_U`a UhUXcfYb

 $8]Y `Y] a]gWX Yb `Gd]Y `Yf `nY][hYb `g]WX `VYgcbXYfg `a ch]j]Yfhž `k Ugg]WX `]b `] `Yb `D`Uhn]Yfi b[Yb `k]XYfgd]Y[Y`hY " `<math>\mathscr{D}$ f[Yb '< Y]b_Yb

gW\UZZhY`Yg`V]g`]bg`J]YfhY`Z]bU`Yž`k c`Yf`gW\`]Y»`]W\`Ui Z`XYb
gdÀhYfYb`:]bU`]ghYb`7\f]gh]Ub`<U\`Vc\a `hfUZ"`<Y]b_Yb`_cbbhY
gY]b`YfghYg`? "c"!Gd]Y``a]h`Y]bYa `_bUddYb`(.' !G]Y[`[Y[Yb`9b[]b
B]fcb`ZØf`g]W\`YbhgW\Y]XYbž`VYj cf`]\b`<U\`Vc\a `a]h`Y]bYa
(.%!5i g`]a `Hi fb]Yf`ghcddhY"`H\cfghYb`6cXYk][`k Uf`Y]b`k Y]hYfYf
8Y`a Yb\cfghYf`Gd]Y`Yfž`XYf`ni `XYb`Hcd`%*`[Y\ÒfhYi bX`XYb`%' "

: fUi Yb]a 'Hi fb]Yf'i bX'XYf'K Y['ni f ; `Y]WX ghY``i b[

Hfchn XYf gd UbbYbXYb A UhWX Yg YbhhÀi gWX hYb X]Y k Y]V `]WX Yb HY]`bY\a Yfž XU _Y]bY 'j cb ']\bYb ']b X]Y '? "c "!Fi bXY Y]bn]Y\Yb _cbbhY "'J `UXmg`Uj U `GU_cj mWX ž A Ubi Y `U `K Yb[`Yf `i bX `UbXYfY \UVYb `k]WX h][Y '9fZU\fi b[Yb '[YgUa a Y `hž X]Y ']\bYb `VY] ni _ØbZh][Yb `K YhhVYk YfVYb `ni [i hY_ca a Yb '_ObbhYb" '8]Y Cf[Ub]gUhcfYb `VYhcbhYbž XUgg X]Y 'J YfUbghU`hi b['Y]b `GWX f]hh `]b `X]Y f]WX h][Y `F]WX hi b[']ghž i a 'a Y\f : fUi Yb ']b `XYb `Gdcfh Y]bni VYn]Y\Yb `i bX `]\f `GY`Vghi YfhfUi Yb `ni 'ghÀf_Yb"

$8 Y f GWX i ggU_h. x \Ubb]b[i bX < U\ Vc\a]a :]bUY$

 $= a \cdot @Ui \ ZY' X Y g' Hi \ fb] Y fg' _cbbh Y' B] `g' x \ Ubb] b[\ gY] b Y' : A \][_Y] h Y b i bh Y f' 6 Y k Y] g' gh Y ``Y b z'] b X Y a \ 'Y f' g] W `X i \ fW `Ub g d fi \ W \ gj \ c ``Y A \ Uh W X Y g' _A a \ d \ Zh Y'' = a \ :] b U `Y' n Y] [h Y' Y f' Y] b Y' V Y Y] b X fi \ W_Y b X Y \ @Y] gh i b ['i b X' g] W X Y fh Y' g] W `Y] b Y b' _ `Uf Y b') \ . %! G] Y ['i [Y [Y b \ < U \ `V c \ a \ z' X Y f'] \ b' n i j c f'] b' X Y f'; \ fi \ d d Y b d \ Ug Y' V Y g] Y [h' \ Uh h Y'' \ x \ Ubb] b ['j Y f V Y g g Y fh Y' g Y] b Y' @Y] gh i b [Y b' g h Y h] ['X i f W X' Y X Y b [Y g d] Y' h Y b' G Uh n' i b X' V Y k] Y g z' X U g g' 8 i f W \ U` h Y j Y fa \ O [Y b' i b X g h Y h] [Y f': c f h g W f] h 'X Y f' G W ` Ø g g Y `` n i a \ '9 f Z c` ['g] b X'' \$

9]b '6`]W_ ']b 'X]Y 'Ni _i b Zh 'X Y g '- !6U``!Gd c f h g

8 Ug'-!6U``!CdYb']b'8 Y`a Yb\cfgh'\Uh'X]Y'K Y]W\Yb'ZØf'ni _ØbZh][Y K YhhVYk YfVY'[YghY``h"'8]Y'gd]Y`Yf]gW\Yb'@Y]ghi b[Yb'U``Yf HY]`bY\a Yf'V]YhYb'5bfY]nY'ZØf'_ØbZh][Y'Hi fb]YfY'i bX'ZÒfXYfb'X]Y

9bhk]W_`i b['XYg'Gdcfhg']b'8Yi hgW\`UbX"'8Ug'dcg]h]j Y': YYXVUW_j cb'6YcVUW\hYfb'i bX'HY]`bY\a Yfb'nY][hž'XUgg'XYf'6]``UfXgdcfh Ui W\']a '`c_U`Yb'FU\a Yb'Zcf]Yfh'i bX'FUi a 'ZØf'k Y]hYfYg K UW\ghi a 'VYghY\h"

8]Y'JYfUbghU`hi b['YbXYhY'gdÀh']b'XYf'BUW\hž'i bX'X]Y
Cf[Ub]gUhcfYb'fYZY_h]YfhYbž'k]Y'k]W\h]['gc`W\Y'9j Ybhg'ZØf'X]Y
G]W\hVUf_Y]h'i bX'9bhk]W_`i b['XYg'6]``UfXgdcfhg'g]bX"'G]Y'\cZZYb
Ui Z'Y]bY'HY]`bU\a Y'j cb'bcW\'a Y\f'Gd]Y`Yfb']a '_ca a YbXYb'\\f\
'gck c\``a Àbb`]W\Yb'U`g'Ui W\'k Y]V`]W\Yb' 'i a 'Y]bY'bcW\
j]Y`ZÀ`h][YfY'; Ya Y]bgW\UZh']a '6]``UfXgdcfh'ni 'gW\UZZYb"

B 5;

8 YhU]`q

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