

%\$ '>U\fY'=bhYf_i `hi fY``Yg': Ygh. 'J]Y`ZU`h ZY]Yfb']b'GhY[`]hn!NY\`YbXcfZ

: Y]Yfb'G]Y'a]h'i bg'XUg'%\$"'=bhYf_i `hi fY``Y': Ygh'GhY[`]hn!

NY\`YbXcfZ'i bhYf'XYa 'A chhc' A]hY]bUbXYf']b'J]Y`ZU`h "

9bhXYW_Yb'G]Y'Y]b'Vi bhYg'Dfc[fUa a 'a]h'Y]bYa 'A Uf_h'XYf
A Ò[`]WX_Y]hYbž'j]Y`ZÀ`h][Yb'Jcf`Ygi b[Yb'XYf'GhUXhV]V`]ch\Y_
]b'a Y\fYfYb'GdfUWXYbž'A i g]_'i bX'HUbn'ZØf'; fc "i bX'?`Y]b

Ua '\$*"\$-"&\$&("'9]bhf]hh'ZfY]°

 $\begin{tabular}{ll} \hline ``5a '`*"`GYdhYa VYf`&$&(`k]fX`]b``GhY[`]hn!NY\`YbXcfZ`Y]b`[Ubn VYgcbXYfYg`9fY][b]g`[YZY]Yfh"`8Ug`$hYf_i`hi fY``Y: Ygh`ZY]Yfh`gY]b %$! 'A\f][Yg`6YghY\Yb`i bX`k]fX`i bhYf`XYa 'A chhc' A]hY]bUbXYf`]b J]Y`ZU`h 'Ui g[Yf]W\hYh"`$\TY]bYf`NY]h\TY]b`XYf`_i `hi fY``Y bhYfgW\]YXY`cZh`XUg`hA[`]W\Y`@YVYb`dfA[Yb\TgYhnh`X]YgYg`: Ygh Y]b`dcg]h]j Yg`NY]W\Yb`Z\OfX]Y`J]Y`ZU`h`i bX`XUg`Ni gUa a Yb`YVYb XYf`A YbqW\Yb`]b`X]YqYf``YVYbX][Yb`BUW\VUfgW\UZh"``$

A Uf_h'XYf'A Ò[`]WX_Y]hYb'i bX 6Ø\bYbdfc[fUa a

"9]bY'XYf'<Ui dhUhhfU_h]cbYb']gh'XYf'A Uf_h'XYf'A Ò[`]W_Y]hYb"
<]Yf'_ÒbbYb'6Ygi W\Yf\]bbYb'g]W\'ØVYf'nU\`fY]W\Y'5b[YVchY'i bX</pre>

5b`Ui ZghY``Yb`]a '6Yn]f_']bZcfa]YfYb"'JYfgWX]YXYbY'5_hYi fi]bbYbdfÀgYbh]YfYb']\fY'Dfc'Y_hY'i bX'\dangle]h]Uh]j Ybž'X]Y'XUg Ni gUa a Yb`YVYb'i bX'XYb'5i ghUi gWX']b'XYf'; Ya Y]bXY'ZÒfXYfb" 8]YgYf'A Uf_h']gh'b]WXh'bi f']bZcfa Uh]j ž'gcbXYfb'Ui WX'Y]bY 9]b`UXi b[ž'U_h]j 'Ua '_i `hi fY``Yb'@YVYb'XYf'FY[]cb'hY]`ni \UVYb"''

": Øf'a i g]_U`]gWXY'I bhYf\U`hi b['i bX'_Øbgh`Yf]gWXY'8UfV]Yhi b[Yb
gcf[h'Y]b'i a ZUb[fY]WXYg'6Ø\bYbdfc[fUa a "'I bhYfgWX]YX`]WXY
?i bghgWXUZZYbXY'hfYhYb'Ui Z'i bX'V]YhYb'Y]bYb'Vi bhYb'A]I 'Ui g
A i g]_ž'HUbn'i bX'k Y]hYfYb'8UfV]Yhi b[Ybž'X]Y'ZØf'U``Y
5`hYfg[fi ddYb'[YY][bYh'g]bX"'8Ug': Ygh'j Yfgdf]WXh'VYgcbXYfg
i bhYf\U`hgUa 'ZØf': Ua]`]Yb'a]h'_`Y]bYb'?]bXYfb'ni 'k YfXYbž'X]Y
g]WX'Ui Z'j]Y`Y'A]ha UWX!5_h]j]hÀhYb'i bX'Y]b'gdUbbYbXYg'Ei]n
ZfYi Yb'XØfZYb"''

"9]b'VYgcbXYfYg'<][\`][\h'XYf'JYfUbghU`hi b[']gh'X]Y'HY]`bU\a Y
XYf'GhUXhV]V`]ch\Y_'GhY[`]hn!NY\`YbXcfZž'X]Y']a 'gc[YbUbbhYb
Jcf`YgYnY`h'Y]bY'\Yfj cffU[YbXY'Dfc[fUa a [YghU`hi b['ZØf'X]Y']b[Yb'6Ygi WXYfl]bbYb'UbV]YhYh''<]Yf'k]fX']b'a Y\fYfYb
GdfUWXYb'j cf[Y`YgYbž'k Ug'X]Y'J]Y`ZU`h'XYf'GdfUWXYb'i bX'?i`hi fYb
]b'XYf'FY[]cb'i bhYfghfY]WXh'''

- '%) .\$\$ I \f. ? Ua]g\]VU] Ui Z'8 Yi hgW.
- ``%) .' \$`I \f.`I _fU]b]gW\
- ``%*.\$\$`I\f.`GdUb]gWX
- ``%*.' \$`I \f.`5fUV]gW\
- ``%+.\$\$`I \f.': Ufg]
- "%+.' \$1 \f. Dc`b]gW

"8]YgY'Jcf`YgYU_h]cbYb'ZÒfXYfb'b]W\h'bi f'XUg'GdfUW\j Yfgh\bXb]gž gcbXYfb'Ui W\'XUg'_i `hi fY``Y'6Yk i gghgY]b'XYf'?]bXYf"'8Yf]bhYfU_h]j Y'Ni [Ub['ni f'@]hYfUhi f'gW\UZZh'Y]bY'6fØW_Y'nk]gW\Yb XYb'j YfgW\]YXYbYb'?i `hi fYb'i bX'gh\df_h'X]Y'gcn]U`Yb'6]bXi b[Yb]bYf\U`V'XYf'; Ya Y]bXY"''

"\display \text{NY]hYb\zeta"]b \text{XYbYb} \text{Li \hi fY} \text{Y} \text{GdUbbi b[Yb \hi \hi Z][\text{I]b} \text{XYb} \text{BUW\hi} f]W\hi hYb \text{ni \text{Cfa} \text{Zgh} \text{Y} \text{BUW\hi} f]W\text{hYb} \text{ni \text{Cfa} \text{Zgh} \text{Y} \text{BUW\hi} f]\text{VYbXY} \text{Sbhk cfh} \text{XUfUi Z" \text{9g} \text{V}]YhYh \text{Y} \text{BY} \text{D} \text{UhhZcfa} \text{Z\text{Qf} \text{XYb}

5i ghUi gW\ž'XUg'J YfghÀbXb]g'i bX'X]Y'5bYf_Ybbi b['XYf'J]Y`ZU`hž X]Y'i bgYfY'; YgY``gW\UZh'dfÀ[h"''

9]b: Yghž XUg j YfV]b XYh

"8 Ug'%\$" = bhYf_i `hi fY``Y': Ygh']b'GhY[`]hn!NY\`YbXcfZ']gh'a Y\f'U`g bi f'Y]b'9j Ybh' 'Yg']gh'Y]bY': Y]Yf'XYf'; Ya Y]bgWXUZh'i bX'XYf J]Y`ZU`h" '9g'Yf]bbYfh'i bg'XUfUbž'XUgg']b'i bgYfYb I bhYfgWX]YX`]WX_Y]hYb'Y]bY'[fc» Y'GhÀf_Y'`]Y[h"'8]Y'A Ò[`]WX_Y]hž X]Y'j YfgWX]YXYbYb'?i `hi fYb'ni 'Yf`YVYb'i bX'ni 'j YfghY\Ybž'ZÒfXYfh Y]b'\Ufa cb]gWXYg'A]hY]bUbXYf'i bX'nY][hž'XUgg'YXYf'j cb'i bg'HY]` Y]bYg'[fÒ» YfYb'; UbnYb']qh"''

~~6YXYi hi b[]bhYf_i `hi fY``Yf': YghY

" Dryf i hi fy "Y : YghY 'k]Y 'X Ug ' Dryf i hi fy "Y : Ygh GhY [`]hn!

NY\ `Yb X c f Z g d]Y `Y b 'Y]b Y 'k Yg Y b h`] W Y 'F c ``Y 'V Y] 'X Y f : Òf X Y f i b ['X Y g g c n] U `Y b 'N i g Ua a Yb \ U `hg '] b 'Y]b Y f 'n i b Y \ a Yb X 'X]j Yf g] Z]n] Y f h Y b 'Y g Y ``g W U Z h'' 'G c `W Y 'J Y f U b g h U `h i b [Y b 'V] Y h Y b 'Y] b Y D `Uhh Z c f a 'Z Ø f X Y b '5 i g h U i g W `n k] g W Y b 'j Y f g W] Y X Y b Y b '? i `h i f Y b ž 'k Ug 'b] W h 'b i f X Ug 'J Y f g h A b X b] g 'Z Ø f Y] b U b X Y f 'Z Òf X Y f h ž 'g c b X Y f b 'U i W 'J c f i f h Y] `Y U V V U i h'' \ D 'Y] b Y f 'N Y] h ž '] b 'X Y f 'A] [f U h] c b 'i b X '; `c V U `] g] Y f i b ['[f c » Y < Y f U i g Z c f X Y f i b [Y b 'a] h 'g] W `V f] b [Y b ž 'g] b X 'g c `W Y ': Y g h Y 'Y] b k] W h h [Y g 'A] h h Y `ž X] Y '; Y a Y] b g W U Z h 'n i 'g h A f _ Y b 'i b X 'Y] b '; Y Z Ø \ `` X Y f N i [Y \ Òf] [_Y] h 'n i 'g W U Z Y b " ``

"8 UfØVYf"\]bUi g'_ObbYb']bhYf_i `hi fY``Y': YghY'ni f'G]W\hVUf_Y]h
j cb'A][fUbhi]bbYb'VY]hfU[Yb"'G]Y'Yfa O[`]W\Yb'Yg'5b[Y\Of][Yb
j YfgW\]YXYbYf'?i `hi fYbž']\fY'HfUX]h]cbYb'i bX'6fÅi W\Y'ni
dfÀgYbh]YfYbž'k cXi fW\'Y]b'h]YZYfYg'6Yk i gghgY]b'ZØf'X]Y'_i `hi fY``Y
J]Y`ZU`h'YbhghY\hž'X]Y'X]Y'; YgY``gW\UZh'VYfY]W\Yfh"Ghi X]Yb'nY][Ybž
XUgg'6Y[Y[bi b[Yb'nk]gW\Yb'i bhYfgW\]YX`]W\Yb'?i `hi fYb'cZh'ni
dcg]h]j Yb'J YfÀbXYfi b[Yb']b'XYf'; Ya Y]bgW\UZh'ZØ\fYb'_ObbYbž

 $k]Y Y]bY [YghY][YfhY gcn]U Y \to hY [fUh]cb'i bX'Y]b'ghAf_YfYg ; Ya Y]bgW UZhg[YZØ\ `"''$

··?i `hi fY``Y 'J]Y`ZU`h]b 'GhY[`]hn!NY\ `YbXcfZ

"GhY[`]hn!NY\`YbXcfZ']gh'Y]b'6Yn]f_ž'XYf'Xi fWX 'gY]bY'_i `hi fY``Y

J]Y`ZU`h'[YdfÀ[h']gh'' <]Yf'`YVYb'A YbgWXYb'Ui g'j YfgWX]YXYbYb

@ÀbXYfb'i bX'?i `hi fYb'ni gUa a Ybž'k Ug'g]WX'Ui WX']a '5``hU[ž']b

; Ughfcbca]Y'i bX'`c_U`Yb'GYfj]WYg'k]XYfgd]Y[Y`h''8]YgY

8]j Yfg]hÀh']gh'b]WXh'bi f']b'XYf'6Yj Ò`_Yfi b['gdØfVUfž'gcbXYfb'Ui WX]b'XYf'?i bghgnYbYž'k c'j]Y`Y'`c_U`Y'?Øbgh`Yfł]bbYb'a]h

i bhYfgWX]YX`]WXYb'<]bhYf[fØbXYb'ni gUa a YbUfVY]hYbž'i a
]bbcj Uh]j Y'i bX'UVk YWXg`i b[gfY]WXY'Dfc'Y_hY'ni 'fYU`]g]YfYb'''

"Dfc[fUa a Y'i bX'5_h]j]hAhYb'k A\fYbX'XYg : Yghg

"BYVYb'XYb'Jcf'Ygi b[Yb']b'j YfgWk]YXYbYb'GdfUWkYb'k]fX'XUg : Ygh'Xi fWk'Y]b'i a ZUb[fY]WkYg'6Ø\bYbdfc[fUa a 'Yf[Àbnhž'XUg j YfgWk]YXYbY'a i g]_U`]gWkY'i bX'hÀbnYf]gWkY'8UfV]Yhi b[Yb i a ZUggh"'8]Y'J]Y`ZU`h'nY][h'g]Wk']b'XYb'Ub[YVchYbYb'Gh]`Ybž'X]Y j cb'hfUX]h]cbY``Yf': c`_`cfY'V]g'\]b'ni 'a cXYfbYb'A i g]_f]Wk hi b[YbfY]WkYb"'Gc`WkY'Dfc[fUa a Y'V]YhYb'b]Wkh'bi f'I bhYf\U`hi b[žgcbXYfb'Ui Wk'6]`Xi b[ž'XU'X]Y'6Ygi WkYbXYb'a Y\f'ØVYf'X]Y

"Ni XYa 'g]bX'nU\`fY]W\Y'Cf[Ub]gUh]cbYb'i bX' \oplus]h]Uh]j Yb'j cf'Cfhž X]Y']\fY'5fVY]h'j cfghY``Yb'i bX'; YgdfÀW\ga \Diamond [`]W_Y]hYb'UbV]YhYb"

8]Yg'ZÒfXYfh'XYb'5i ghUi gW\'j cb'\DZcfa Uh]cbYb'i bX'FYggci fW'b]bbYf\U`V'XYf'; Ya Y]bgW\UZh"'8]Y'?ca V]bUh]cb'Ui g'I bhYf\U`hi b[i bX'6]`Xi b[ia UW\h'XUg'\DhYf_i `hi fY``Y': Ygh'ni 'Y]bYa 'k Yfhj c``Yb9f`YVb]g'ZØf'U``Y'6YhY]`][hYb"''

": Un]h

"8 Ug' ♣ hYf_i `hi fY``Y': Ygh'GhY[`]hn!NY\`YbXcfZ']gh'Y]b `k]WXh][Yg 9fY][b]gž'XUg'X]Y'J]Y`ZU`hi bX'XYb']bhYf_i `hi fY``Yb'5i ghUi gWX']b XYf'FY[]cb'ZÒfXYfh"'9g'gWXUZZh'Y]bY'5ha cgd\ÀfY'XYg'FYgdY_hgž XYf'Hc`YfUbn'i bX'XYf'BYi []Yf'Ui Z'X]Y'i bhYfgWX]YX`]WXYb'?i `hi fYbž X]Y'X]Y'; YgY``gWXUZh'dfÀ[Yb"''

.

8 YhU]`q

6Ygi WXYb G]Y i bg Ui Z. a Y]b!VYf`]b bYh