

8]YVghU\`gj cfk i fZ'[Y[Yb', &! À\f][Yb. GhfY]h'i a '&ž* %'9i fc'; Y\UW_hYg']b J Y``a Uf

9XY_U!A Uf_h']b'JY``a Uf'k]fZh'Y]bYa ', &! λ \f][Yb'8]YVghU\` j cfž'ZcfXYfh'&\$\$'9i fc"'8Yf'GYb]cf'ghfY]hYh'X]Y'J cfk ØfZY'UV"

8 Yf'J cfZJ```]a '9XY_U!A Uf_h`]b`J Y``a Uf`k]fZh: fU[Yb`ni f`: U]fbYgg i bX`XYf'6Y\UbX`i b['À`hYfYf'A YbgW\Yb`]a '9]bnY`\UbXY``Ui Z' K À\fYbX`X]Y'9]bnY`\ÀbX`Yf'j Yfgi W\Ybž'g]W\`[Y[Yb`8]YVghU\``ni gW\ØhnYbž'\Uh'XYf': U```XYg`, &! À\f][Ybž'XYf'VYgW\i `X][h`k]fXž; Y\UW_hYg`]a 'K Yfh'j cb`&ž* %'9i fc`[Yghc\`Yb`ni '\UVYbž'Y]bY 8]g_i gg]cb'ØVYf'Ub[Ya YggYbY'A U» bU\a Yb`Ui g[Y`Ògh'

8]Y G]hi Uh]cb XYg, $\&! \rightarrow \hline \$

 $8 \ Yf'GYb]cf\check{z}'XYf'g]WX'VY]a \ '9]b_Ui \ ZYb'Ub'XYf': `Y]gWXhYY_Y VYX]YbhY\check{z}'ghY``hY'gWXbY```ZYgh\check{z}'XUgg'Yf'XUg'; Y\UW_hY'XcWX'b]WXh VYbOh][hY'''5b[Yg]WXhg'XYf'\c\Yb'HYa dYfUhi fYb\check{z}'X]Y'Ub'X]YgYa HU['\YffgWXhYb\check{z}'VYZØfWXhYhY'Yf\check{z}'XUgg'XUg': `Y]gWX'Ui Z'XYa \U`VghØbX][Yb'FØW_kY['jYfX]fVh'''8U\Yf'`Y[hY'Yf'Yg']b'Y]b'FY[U`ni fØW_ž'VYj cf'Yf'XYb'Gi dYfa Uf_h'jYf']Y* ž'bUWXXYa 'Yf'UbXYfY 5fh]_Y``VYnU\`h'\UhhY''' \=\WX'kY]* ž'XUgg'XUg'Y]b': Y\`Yf'k Uf ž [YghUbX'XYf', &!\A\f][Yž'XYf'XYb'J cfk i fZ'XYg'8]YVghU\`g j Y\Ya Ybh'UVghfY]hYh''$

I a [Ub['XYg'; YgW ÀZhg'a]h'XYf'G]hi Uh]cb

8]YV'UbnY][YžXYb'Yf'Yfk]gW\Y"'8]YgY'\c\Y'; YVØ\fž'X]Y'XYf GYb]cf'b]W\h'VY[`Y]W\Yb'k c``hYž'k i fXY''YXcW\'U`g i bj Yf\À`hb]ga À»]['__f]h]g]Yfh"'GhUhhXYggYb'nU\`hY'Yf') &ž* %'9i fc'' XYb'K UfYbdfY]g'd`i g'Y]bY'ZfY]k]``][Y'NU\`i b['j cb') \$'9i fc''

$8 Ug f Y W h^] W Y B U W g d] Y^$

BUWW '9f\U`h'j cb'A U\bi b[Yb'i bX'j cf'XYa' <]bhYf[fi bX'Y]bYf Xfc\YbXYb'? `U[Y'k i fXY'XYf': U```gW\bY```j cf'; Yf]W\h'[YVfUW\hž YXcW\`gcZcfh'Y]b[YghY``hž'XU'X]Y 'GhUUhgUbk U`hgW\UZh'j cb'Y]bYa Y]ba U`][Yb': U`` `Ui g[]b["'8Yf', &! $\stackrel{\cdot}{A}$ \f][Y'ZØ\`hY'g]W\`gW\i `X][k Y[Yb'XYg'j Yfa Y]bh`]W\Yb': Y\`j Yf\U`hYbgž'k UbXhY'g]W\`UVYf k Y]hYf\]b'a]h'GW\fY]VYb'Ub'XYb'A Uf_hVYhfY]VYf"

6`]W_`Ui Z'X]Y`A cXY`XYf`GhfUZYb`]a 9]bnY`\UbXY`

8Yf'JcfZJ``VY`Yi WkhYhY]b'[fÒ» YfYg'DfcV`Ya ']a '9]bnY`\UbXY`.'8]Y < UbX\UVi b['jcb'@UXYbX]YVghÀ\`Yb'i bX'X]Y'XUa]h'jYfVi bXYbYb A U» bU\a Yb'j Uf]]YfYb'ghUf_"'K À\fYbX']a '9XY_U'A Ò``Yf'Y]bY`\c\Y GhfUZY'jcb'&\$\$'9i fc'jYf`Ub[h'k]fXž\UVYb'UbXYfY'9]bnY`\ÀbX`Yf k]Y'A Uf]_U'<cZa Ubb'cXYf'XYf'BYi _Ui ZIA Uf_h'XYi h`]Wk'[Yf]b[YfY: Ub[dfÀa]Yb'jcb'YkY]`g'%\$\$'9i fcž'kcVY]']a 'FYkY!A Uf_h'gc[UfcZh'Ui Z'Y]bY'GhfUZhU\`i b['jYfn]WkhYh'k]fXž'XU'j]Y`Y'8]YVY a]bXYf'À\f]['g]bX"

; YgY``gW\UZh`]W\Y'5i gk]f_i b[Yb'i bX 8]g_i gg]cb

8 Yf: U``XYg`, &! À\f][Yb`\Uh'b]W\h'bi f'8]g_i gg]cbYb`ØVYf'X]Y < O\Y'j cb'; Y`XghfUZYb`Ui g[Y`OghžgcbXYfb`Ui W\`ØVYf'XYb I a [Ub['a]h'À`hYfYb'6Øf[Yfb']b'XYf'; YgY``gW\UZh"8Yf'GYb]cf'k]Yg XUfUi Z'\]bžXUgg`Yf'b]W\h'j cf\UVYž'U``Yg`ni 'YbhgW\i `X][Ybž'UVYf Ui W\`_Y]b' 8]YV 'gY]"8]YgY`DfcV`Ya Uh]_'gdf]W\h'j]Y`Y'A YbgW\Yb Ub'i bX'gW\UZZh'Y]b'6Yk i gghgY]b'ZØf'XYb'I a [Ub['a]h'À`hYfYb A YbgW\Yb']a '9]bnY`\UbXY`"8]Y'Fi ZY'bUW\'a Y\f'9a dUh\]Y'i bX JYfghÀbXb]g']a '; YgW\ÀZhg`YVYb'k YfXYb``Ui hYfž'XU'XUg'JYf\U`hYb

 $| cb'9]bnY`\AbX`Yfb'[Y[Yb\emptysetVYf']\fYb'?ibXYb']b'XYf'^2ZZYbh`]WX_Y]h \\ = f]h]gWX'fYZY_h]Yfh'k]fX''$

5 i gV`]W_'Ui Z'X]Y'bÀW ghY'9hUddY

8 U'XYf'GhfY]h'nk]gWXYb'XYa '9XY_U!6YhfY]VYf'i bX'XYa 'GYb]cf'j cf XYa 'J Y``a UfYf'GWX]YXgUa h'[Y_`Àfh'k YfXYb'gc``ž'V`Y]Vh UVni k UfhYbž'k Y`WXY'9bhgWXY]Xi b['X]Yg'bUWX'g]WX'n]Y\Yb'k]fX" 8]Y'G]hi Uh]cb'ghY``h'b]WXh'bi f'X]Y'gdYn]Z]gWXYb'fYWXh`]WXYb FU\a YbVYX]b[i b[Yb']b': fU[Yž'gcbXYfb'`Àggh'Ui WX'h]YZYfY 9]bV`]W_Y']b'X]Y'6Yn]Y\i b['nk]gWXYb'?i bXYb'i bX'9]bnY`\ÀbX`Yfb ni "'9g']gh'ni '\cZZYbž'XUgg'XYf': U``ni 'Y]bYf'FYZYI]cb'ØVYf'X]Y f]WXh][Y'6U`UbWY'nk]gWXYb'G]WXYf\Y]h']a '9]bnY`\UbXY`i bX fYgdY_hj c``Ya 'I a [Ub['a]h'À`hYfYb'A]hVØf[Yfb'ZØ\fh"

8 Y hU]`q

6 Ygi WX Yb 'G]Y 'i bg 'Ui Z 'b!U["XY