

GWX k YfYf'I bZU``'VY]'<c]gXcfZ.'* $$! \hat{A} f$ [Y j YfghcfVYb

$$\begin{split} &\text{HOX`]WWYf'JYf_Y\fgi bZU```]b`< c]gXcfZ`*\$!\mathring{A}\f][Y`gWkYf] &\text{yf`Yhnhž',} !\mathring{A}\f][Y`6Y]ZU\fYf]b'jYfghcfVYb''|bZU``ifgUWYk] &\text{k}]fX`Yfa]hhY`h'' \end{split}$$

9]b'gWk YfYf'J Yf_Y\fgi bZU``\Uh'g]Wk'Ua '\Yi h][Yb'A]hhU['Ui Z'XYf?'' \$'VY]'<c]gXcfZ'YfY][bYh"I a 'Yhk U'%&") \$'I \f'_Ua 'Yg'ni 'Y]bYf XfUa Uh]gWkYb'?c``]g]cb'nk]gWkYb'Y]bYa '5i X]'i bX'Y]bYa HfU_hcf[YgdUbbž'k Ug'ni 'Y]bYa 'hfU[]gWkYb'5i g[Ub['ZØ\fhY"'8]Y I a ghÀbXY'XYg'I bZU``q'q]bX'XYfnY]h'bcWk'i b_`Uf"

9]bY *\$! A\f][Y: fUi 'Ui g'@hYbgYY'k Uf'a]h']\fYa '5i X]
i bhYfk Y[g']b'F]W\hi b['G]Y_ž'U`g'g]Y'Y]bYb', VYf\c`j cf[Ub[
Y]b[Y`Y]hYh'\Uh"'J cf']\f'VYZUbXYb'g]W\a Y\fYfY': U\fnYi [Yž
XUfi bhYf'Y]b'@]b]Yb[Y`Yb_Vi g"'K A\fYbX'X]YgYg', VYf\c`j cf[Ub[g
k c``hY'XUg'HfU_hcf[YgdUbbž'XUg'Ui Z'XYf': U\fVU\b']b'XYf'BA\Y
XYf'9]ba ØbXi b['@ b_Yb'Z \fž'bUW\']b_g'UVV]Y[Yb"'8Yf': U\fYf
XYg'HfU_hcfg'VYa Yf_hY'XYb', VYf\c`j cf[Ub['i bX'\]Y`h'Ub"'8cW\
Ui g'V]g`Ub['i b[Y_`AfhYb'; fØbXYb'`Yb_hY'X]Y'5i X]!: U\fYf]b
k]YXYf'Ui Z']\fY'i fgdfØb[`]W\Y': U\fgdi f'j cf'XYa '@]b]YbVi g'i bX
_c``]X]YfhY'a]h'XYa 'HfU_hcf[YgdUbb''

J Yf`Yhni b[Yb'i bX'bUWX Zc`[YbXY A U» bU\a Yb

6Y] XYa `Ni gUa a Ybghc» `Yf`]hh`X]Y `5i X]!: U\fYf]b `gWk YfY

J Yf`Yhni b[Yb `i bX `k i fXY `i a [Y\YbX `]b `Y]b `? fUb_Yb\Ui g

Y]b[Y`]YZYfh" `HfU[]gWk Yfk Y]gY `nc[`g]Wk `]\fY `,)! 'À\f][Y`6Y]ZU\fYf]bž

X]Y `Ui g`XYa `?fY]g`< Yfnc[hi a !@Ui YbVi f[`ghUa a hž'hÒX`]Wk Y

J Yf`Yhni b[Yb `ni `i bX 'j YfghUfV `bc Wk `Ub `XYf`I bZU``ghY``Y" `8]YgY

VYXfØW_YbXYb'BUW\f]W\hYb'g]bX']a a Yf'k]YXYf'Y]b'YfbØW\hYfbXYg 6Y]gd]Y``ZØf'X]Y'; YZU\fYb'XYg'GhfU» Ybj Yf_Y\fg'i bX'X]Y dchYbn]Y``Yb': c`[Yb'j cb', VYf\c`j cf[Àb[Ybž']bgVYgcbXYfY'k Ybb g]W\aY\fYfY': U\fnYi [Y']b'Y]bYa 'Yb[Yb'FUi a 'VYk Y[Yb"

8]Y GhUUhgUbk U`hgWk UZh'@VYW_'\Uh'Y]b'; i hUWk hYb'ni f'?`Àfi b[
XYf'[YbUi Yb'] a ghÀbXY'XYg'] bZU``g']b'5i ZhfU['[Y[YVYb"'8Uni
k i fXY'Y]b'; i hUWk hYf'j cb'XYf'8Y_fU'\]bni [Ync[Ybži a 'X]Y
j YfgWk]YXYbYb': U_hcfYb'XYg'J cfZU``g'[fØbX`]Wk'ni 'i bhYfgi WkYb"
8]Yg']gh'Y]b'k]Wk h][Yf'GWkf]hhži a '@]Wk h']b'X]Y'[YbUi Yb'5V`Ài ZY
XYg'I bZU``g'ni 'Vf]b[Yb'i bX'a Ò[`]WkYfk Y]gY'ni _ØbZh]['À\b`]WkY
hfU[]gWkY'9fY][b]ggY'ni 'j Yfa Y]XYb"

8]Y?'' \$']gh'bUW\'XYa 'I bZU``XYfnY]h'j c``ghÀbX]['[YgdYffhži a 'X]Y bchk YbX][Yb'9fa]hh`i b[Yb'i bX'6Yf[i b[gUfVY]hYb'i b[YghÒfh Xi fW\ZØ\fYb'ni '_ObbYb'''Gc`W\Y'GdYffi b[Yb'_ObbYb'Yf\YV`]W\Y JYf_Y\fgVY\]bXYfi b[Yb'j Yfi fgUW\Ybž'XcW\X]Y'G]W\Yf\Y]h'\Uh']b gc`W\'XfUa Uh]gW\Yb': À``Yb'\OW\ghY'Df]cf]hÀh''

8]Y'JYf_Y\fgØVYfk UW\i b['XYf'Dc`]nY]X]fY_h]cb'F UhnYVi f['V`Y]Vh k UW\gUa ž'i bX'Yg'k]fX'XUfUi Z'\]b[Yk]YgYbž'XUgg'g]W\
JYf_Y\fghY]`bY\a Yf'Ui Z'a Ò[`]W\Y'9]bgW\f\b_i b[Yb']a
GhfU\(\text{Y}\)f'Y]bghY``Yb'gc``hYb"'\(\text{\$\t

 $: \emptyset f `F \emptyset W \underline{Z} f U [\ Y b `ghY \setminus h `ni \ f `J \ Y f Z \emptyset [\ i \ b [\ .$

 $Dc`]nY]X]fY_h]cb`FUhnYVif[```GhUVgghY``Y`#DfYggY``GUbXfU'?]`]UbHY`YZcb.`$()(%#,$-!&$%%9!AU]`.`DfYggY"FUhnYVif["D84dc`]nY]"`UbXg\"XY$

 $Cf][]bU`!7cbhYbh'jcb.`Dc`]nY]X]fY_h]cb`FUhnYVif[ž'ØVYfa]hhY`hXifW\`bYkg`U_hiY``$

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