

## GWX bY``VU\b!GdYffY']b'K ]Yb. K Ug : U\f[ AghY''Yhnh'k ]ggYb'a ØggYb'

8]Y'GW\bY``VU\b'nk]gW\Yb': `cf]XgXcfZ'i bX'DfUhYfghYfb'k]fX j ca '&- "'\forall b]'V]g'\"'GYdhYa VYf'\&\\$\) 'Ui Z[ fi bX'j cb A cXYfb]g]Yfi b[ gUfVY]hYb'[ YgdYffh''GW\]YbYbYfgUhnj Yf\_Y\f a ]h'nk Y]'6i g`]b]Yb'k]fX'Y]b[ Yf]W\hYh''



: `cf]XgXcfZž² ghYffY]WX '! BUWX 'XYb'\Yi h][Yb'A Y`Xi b[Yb'[UV X]Y'² 66'VY\_Ubbhž'XUgg'X]Y'GWXbY``VU\b!GhUa a ghfYW\_Y'nk]gWXYb : `cf]XgXcfZi bX'DfUhYfghYfb'UV'XYa '&- "'\$ b]'V]g'ni a '%" GYdhYa VYf'&\$&) 'ZØf'i a ZUggYbXY'A cXYfb]g]Yfi b[gUfVY]hYb [YgdYffh'k]fX"'8]Y'5fVY]hYb'n]Y`Yb'XUfUi Z'UVž'X]Y'GhfYW\_Y'g]WXYfYf ni 'a UWXYb'i bX'X]Y'? UdUn]hÀh'ni 'Yf\Ò\Yb"Ni XYa 'k]fX'XUg Ni [g]WXYfi b[ggmghYa 'a cXYfb]g]Yfh'i bX'X]Y'6U\bghY][Y'k YfXYb j Yf`Àb[Yfhž'i a 'D`Uhn'ZØf``Àb[YfY'NØ[Y'ni 'gWXUZZYb"'8 Ua]h'gc```XYf JYf\_Y\fgZi gg']b'XYf'FY[]cb'cdh]a ]Yfh'k YfXYbž'k]Y') a ]b"Uh VYf]WXhYh"

 $\label{eq:continuous} I a \ \ ^X]Y \ F \ Y]g \ Y \ b \ X \ A \ f \ Y \ b \ X \ X]Y \ g \ Y \ f \ N \ Y]h \ b \ ]W \ h'] a \ \ 'Gh]W \ 'ni \ \ '`Ugg \ Y \ b \ Z \ Y \ b \ Y$ 

k YfXYb nk Y] GW ]YbYbYfgUmVi g`]b]Yb Y]b[ Yf]W hYh" 8]Y V`Ui Y @|b]Y k ]fX Ub XYb G!6U\b!GhUh]cbYb HfU]gYb[ UggY ii bX < UbXY`g\_U]\U`hYbž k À\fYbX X]Y [ Y`VY 8]fY\_hVi g`]b]Y c\bY Nk ]gW Yb\U`hY j cb : `cf]XgXcfZ'bUW 'DfUhYfghYfb ZÀ\fh" 8]Y '6i ggY ZU\fYb hÀ[ `]W ]b XYb A cf[ Ybghi bXYb V]g ni a '5VYbXž k cVY] 5VZU\fhgnY]hYb Ui W ']b XYf G7 C HHMa cV] '5dd j YfZØ[ VUf g]bXž k ]Y cYVV "Uh |bZcfa ]Yfh"

## JcfVYfY]hi b[ 'Ui Z'X]Y '6Ui UfVY]hYb

Ni f'VYggYfYb'Cf]Ybh]Yfi b['XYf': U\f[ ÀghY'k ]fX'Y]b': UfV`Y]hgmghYa Ub'XYb'6U\b\ÒZYb'Y]b[YgYhnh"8Yg'K Y]hYfYb'g]bX'X]Y'^2 66!
H]W\_Yhg']b'VYgh]a a hYb'5VgW\b]hhYb'Ui W\'j cb'XYb'K ]YbYf'@]b]Yb UbYf\_Ubbhž'gcXUgg'I!6U\bYb'i bX'GhfU»YbVU\bYb'dfcV`Ya `cg [Ybi hnh'k YfXYb'\_ObbYb"'5i W\'X]Y'K]YbYf'@]b]Yb'gY`Vgh'g]bX'j cb VUi `]W\Yb'5XUdh]cbYb'VYhfcZZYb. nk ]gW\Yb'XYa '&, "'\$b]'i bX'XYa' '%"'5i [i gh'&\$&) k]fX'X]Y'I (!HfUggY'YfbYi Yfhž'k Ug'YVYbZU``g 5i gk]f\_i b[Yb'Ui Z'XYb': U\fd`Ub'\Uh"

?cb\_fYh'k ]fX 'Y]bY '9fgUhnj YfV]bXi b[ 'nk ]gWX Yb': f]YXYbgVfØW\_Y
i bX 'GWX chhYbf]b[ 'ØVYf'X]Y 'GhfU» YbVU\b`]b]Y '9( 'Y]b[ Yf]WX hYh'' 8]Y
: U\f[ AghY'\_ObbYb'g]WX 'ni XYa 'Ui Z'UbXYfY'I !6U\b!'i bX
GhfU» YbVU\bj YfV]bXi b[ Yb'ZfYi Ybž'Yhk U'X]Y'I %'j cb'@Ycdc`XUi
V]g'ni a '< Ui dhVU\b\cZ'cXYf'X]Y'I ' 'j cb'G]a a Yf]b[ 'V]g'K ]Yb
A ]hhY"'8]YgY'A U» bU\a Yb'g]bX'Y]b'HY]``XYf'i a ZUggYbXYb
A cXYfb]g]Yfi b[ Yb']a 'K ]YbYf'JYf\_Y\fgbYhnž'k ]Y'YVYbZU``g'Ui Z'
k ]YbYf`]b]Yb"Uh'VYgWXf]YVYb'k ]fX"

## K Y]hYfY 6Ui j cf\UVYb ]b XYf FY[]cb

8]Y'6Ui UfVY]hYb'VYgWXfÀb\_Yb'g]WX'YXcWX'b]WXh'bi f'Ui Z'X]Y
GWXbY``VU\b"'5i WX']b'B]YXYfÒghYffY]WX'g]bX'9]bgWXfÀb\_i b[Yb'ni
Yfk UfhYb.'8]Y'G(\$'nk]gWXYb'?`cghYfbYi Vi f[!K Y]X`]b['i bX'Gh"
5bXfÀ!K ÒfXYfb'k]fX']a 'gY`VYb'NY]hfUi a 'Xi fWX'6i ggY'YfgYhnhž
i bX'gÀa h`]WXY'NØ[Y'XYf'@]b]Y'F(\$ž'X]Y'j cb'K]Yb': fUbn! &gYZg!
6U\b\cZ'bUWX'Gh"'5bXfÀ!K ÒfXYfb'ZU\fYbž'YbhZU``Yb"'5i WX'X]Y
JYfV]bXi b[Yb'XYf'@]b]Yb'F9L('i bX'F9L(%'bUWX'; a ØbX'g]bX'j cb
: U\fd`UbÀbXYfi b[Yb'VYhfcZZYb"

Ni gàhn`]WX [ ]VhYg``Ui ZYbXY; `Y]gVUi UfVY]hYb`]b'j YfgWX]YXYbYb GhUXhhY]`Yb'K ]Ybgž'i bhYf'UbXYfYa ']b'XYf'< ØhhY`XcfZYf'GhfU» Yž'k c V]g'ni '%"+) \$'A YhYf'; 'Y]gY'[ YhUi gWXh'k YfXYb"'8]YgY'5fVY]hYb gc``Yb'XUni 'VY]hfU[ Ybž'@Ub[ gUa ZU\fghY``Yb'ni 'VYgY]h][ Yb'i bX XYb'?ca Zcfh'Ub'XYb'<U`hYghY``Yb'ni 'Yf\Ò\Ybž'k ]Y']b'Y]bYa k Y]hYfYb'6Yf]WXh'Ui Z'k ]YbYf`]b]Yb"Uh'Ui Z[ YZØ\fh"

A ]h'U``X]YgYb'A U» bU\a Yb'nY][Yb'X]Y'² 66'i bX'X]Y'K ]YbYf'@]b]Yb
Y]b'[i hYg'<ÀbXWXYbž'i a 'X]Y'♣ZfUghfi \_hi f'XYf'GhUXh'ni
j YfVYggYfb'i bX'X]Y'A cV]`]hÀh'XYf'6Øf[Yf'ni '[Yk À\f`Y]ghYb"'5i WX
k Ybb'X]Y'VYj cfghY\YbXYb'GdYffYb'i bX'9]bgWXfÀb\_i b[Yb'ZØf
a UbWXY'Y]bY'<YfUi gZcfXYfi b['XUfghY``Yb'\_ÒbbhYbž'gc'k]fX'X]YgY
D\UgY'XcWX'XUni 'VY]hfU[Ybž'K]Yb'Z]h'ZØf'X]Y'Ni \_i bZh'ni 'a UWXYb"

8 YhU]`g	
Cfh	:`cf]XgXcfZž <sup>·2</sup> ghYffY]WX
EiY``Yb	• k k k ") a ]b"Uh
	• k k k "cYVV"Uh
	• k k k "k ]YbYf`]b]Yb"Uh

6Ygi WXYb G]Y i bg Ui Z. a Y]b!k ]Yb bYh