

FYhhi b[gk U[Yb'_c``]X]Yfh'a]h'DcfgWXY. JYf`YhnhY'VY]'A]hhYfbUWX hgi bZU``°

9]b F Y hhi b [gk U [Y b i b X Y]b Dc fg W Y _c ``]X]Y fh Y b $^{\circ}$]b $^{\circ}$ 6 Y f $^{\circ}$]b! H]Y f [U fh Y b $^{\circ}$ 8 Y h U] $^{\circ}$ g n i a $^{\circ}$ 1 b Z U $^{\circ}$ 1 Y f [U b [$^{\circ}$ 1 b X X Y b $^{\circ}$ 6 Y h Y] $^{\circ}$] [h Y b $^{\circ}$



DchgXUa Yf'GhfU» Yž'%\$+,) '6Yf`]bž'8Yi hgWk`UbX'!'5a '%) "'\$b] &\$&) 'YfY][bYhY'g]Wk'Y]b'[YZÀ\f`]WkYf'I bZU```nk]gWkYb'Y]bYa FYhhi b[gk U[Yb'i bX'Y]bYa 'DcfgWkY']b'6Yf`]b!H]Yf[UfhYb"'8Yf I bZU``ž'XYf'g]Wk'_i fn'j cf'A]hhYfbUWkh'Ui Z'XYf'DchgXUa Yf'GhfU» Y']b F]Wkhi b['DchgXUa Yf'D`Uhn'YfY][bYhYž'n]Y\h'nU\`fY]WkY': fU[Yb'ni f 9]b\U`hi b['j cb'JYf_Y\fgfY[Y`b'i bX'XYb'FYWkhYb'j cb 9]bgUhnZU\fnYi [Yb'bUWk'g]Wk"'@Ui h'VYf`]b"XY'\UhhY'XYf '(!'À\f][Y': U\fYf'XYg'FYhhi b[gk U[Ybg'GcbXYf!'i bX'K Y[YfYWkhYžX]Y']\a 'VY]'BchZU``Y]bgÀhnYb'[Ya À» 'z'') GhfU» Ybj Yf_Y\fgcfXbi b['fGhJ CŁ'ni ghY\Yb"

DUggUbhYb 'VYf]W\hYhYbž'XUgg'XYf': U\fYf'XYg'FYhhi b[gk U[Ybg'X]Y; YgW\k]bX][_Y]h'j Yff]b[YfhY'i bX'hfchn'Y]bYf'fchYb'5a dY``a]h

Y]b[YgWkU`hYhYb'GcbXYfg][bU`Yb']b'X]Y'?fYi ni b['Y]bZ\f"'=0
X]YgYa 'A ca Ybh'\UhhY'XYf'&%!'À\f][Y': U\fYf'XYg'DcfgWkYž'k]Y'Yg
]\a 'XUg'[fØbY'@]Wkh'Yf`Ui VhYž']b'X]Y'?fYi ni b['Y]b[YZU\fYb"'8Yf
UbgWk`]Y»YbXY'Ni gUa a Ybghc»'ZØ\fhY'XUni ž'XUgg'XYf'DcfgWkY
[Y[Yb'Y]bYb'5a dY`a Ugh'dfU``hY"

I bZU``Zc`[Yb'i bX'JYf`YhnhY

8]Y:c`[Yb`XYg`I bZU``g`k UfYb`[fUj]YfYbX"'8Yf`DcfgW\Y!:U\fYf kifXY'a]h``Y]W\hYb'JYf`Yhni b[Yb']bg'?fUb_Yb\Ui g`[YVfUW\hž k À\fYbX'gY]b'6Y]ZU\fYf'X]Y'6Y\UbX`i b['Ua'I bZU``cfh'UV[Y`Y\bh\UhX'"5i W\`XYf':U\fYf`XYg`FYhhi b[gk U[Ybg'i bX'gY]b'()!'À\f][Yf?c``Y[Y'Yf`]hhYb'`Y]W\hYJYf`Yhni b[Yb'i bX'ki fXYb']bg'[`Y]W\Y?fUb_Yb\Ui g'[YVfUW\hž'_cbbhYb'YXcW\'bUW\'XYf'6Y\UbX`i b[k]YXYf'Ybh`UggYb'k YfXYb"'6Y]XY':U\fnYi [Y'k UfYb'Xi fW\'XYbNi gUa a Ybghc»'b]W\h'a Y\f'ZU\fZÀ\]['i bX'ki fXYb'UV[YgW\'Yddh''8Yf'JYf_Y\fgYfa]hh`i b[gX]Ybgh'XYf'Dc`]nY]X]fY_h]cb'&'fK YghŁ`\UhX]Y'9fa]hh`i b[Yb'ni 'XYa'I bZU```ØVYfbca a Yb"

8]Y fYWkh]W Yb F U\a Yb VYX]b[i b[Yb ZØf XYb 9]bgUhnj cb
F Yhhi b[gk U[Yb g]bX _ `Uf [YfY[Y`h" @Ui h fYWk hgXYd YgWk Y"XY
g]bX: U\fYf j cb F Yhhi b[gk U[Yb VY] Xf]b[Yb XYb B chZÀ ``Yb j cb
XYb bcfa U`Yb J Yf_Y\fgd Z]Wk hYb VY ZfY]hž a ØggYb 'Yxc Wk ghYhg
VYgcbXYfY 'Gcf[ZU hk U hYb ``UggYbži a 'n]j]'! cXYf ghfUZfYWk h`]Wk Y
J YfZc`[i b['ni 'j Yfa Y]XYb" 8]Yg i a ZUgghYhk U 'X]Y J YfdZ]Wk hi b[ž
g]Wk Yfni ghY ``Ybž XUgg 'Ub XYfY 'J Yf_Y\fghY]`bY\a Yf X]Y 'G][bU 'Y 'XYg
F Yhhi b[gk U[Ybg k U\fbY\a Ybž VYj cf g]Y 'Y]bY fchY '5 a dY`
ØVYfZU\fYb" '5 i Wk 'X]Y '< UZhi b[']a :: U ``Y 'Y]bYg 'I bZU ``g ']gh b]Wk h
Y]bXYi h]['[YfY[Y`hž k Ug Xi fWk 'Y]bYb ': U `` XYg C VYf `Ub XYg[Yf]Wk hg
: fUb_Zi fh j YfXYi h`]Wk h'k]fXž ']b XYa 'Y]bY \A`Zh][Y < UZhi b[
nk]gWk Yb 'Y]bYa 'F Yhhi b[gk U[Yb 'i bX 'Y]bYa 'D? K 'bUWk 'Y]bYa
A\b`]Wk Yb 'J cfZU ``ZYgh[YghY ``h'k i fXY"

8]Y'Fc``Y'XYf'GcbXYffYW\hY']a GhfU»YbjYf_Y\f

 $\label{eq:cvkc} {\tt CVkc} ``{\tt FYhhi} b[gZU\fnYi[Y'ibhYf'VYgh]a a hYb'6YX]b[ib[Yb] \\$

GcbXYffYWkhY'VYg]hnYbž'[Y`hYb'g]Y`]a 'GhfU» Ybj Yf_Y\f
[fi bXgÀhn`]Wk'XYb'[`Y]WkYb'FY[Y`b'k]Y'UbXYfY

JYf_Y\fghY]`bY\a Yf"'8]Y'FY[Y`i b[Yb'VYgU[Ybž'XUgg'VY]'Y]bYf

BchZU``g]hi Uh]cb'Y]bY'9]`Y'[YVchYb']ghž'i a 'A YbgWkYb`YVYb'ni

fYhhYb'cXYf'gWkkYfY'[Ygi bX\Y]h`]WkY'GWkÀXYb'UVni kYbXYb''

8]YgY'GcbXYffYWkhY'i a ZUggYb'VY]gd]Y`gkY]gY'XUg', VYfZU\fYb

j cb'fchYb'5a dY`b'i bX'XUg'A]ggUWkhYb'XYf'ni `Agg][Yb

< OWkgh[YgWkk]bX][_Y]hž'gc`Ub[Y'X]Y'; YZA\fXi b['UbXYfYf
JYf_Y\fghY]`bY\a Yf'b]Wkh'ØVYf'XUg'bchkYbX][Y'A U»'\]bUi g[Y\h''

K]Y'Yf[c"XY'Yf`Ai hYfhž'a ØggYb'UbXYfY'JYf_Y\fghY]`bY\a Yf'XYb

KY['ZfY]a UWkYbž'kYbb'XUg'9]bgUmZU\fnYi ['a]h'6`Ui `]Wkhi bX

A Ufh]bg\cfb'i bhYfkY[g']gh''={bcf]YfYb'X]YgYf'DZ]Wkh_Ubb'ni

6i »[Y`XYfb'ZØ\fYb"

8]Y'JcfZÀ``Y'i bX'X]Y'U_hi Y``Yb'9fa]hhi b[gYf[YVb]ggY'k YfXYbg]WXYf'Ui WX'ni 'k Y]hYfYb'8]g_i gg]cbYb'ØVYf'X]Y'FYWXhY'i bXDZ]WXhYb'j cb'FYhhi b[gZU\fnYi [Yb'i bX'UbXYfYbJYf_Y\fghY]`bY\a Yfb'ZØ\fYb"'\delta'6Yf`]b'g]bX'gc`WXY'I bZÀ``Y'b]WXhX]Y'5i gbU\a Yž'i bX'X]Y'?ca a i b]_Uh]cb'gck]Y'XUg'J YfghÀbXb]gZØf'X]Y'Jcf[Y\Ybgk Y]gY'j cb'9]bgUhnZU\fnYi [Yb']a 'JYf_Y\fgU``hU[V`Y]VYb'YggYbn]Y``"

8 Y hU]`g	
Cfh	DchgXUa Yf'GhfU» Yž'%\$+,) '6Yf`]bž
	8 Yi hg WX `U b X
EiY``Yb	• k k k "VYf`]b"XY
	kkk"fYWXhgXYdYgWXY"XY
	• k k k "Yf[c"XY

6 Ygi W Yb 'G]Y i bg 'Ui Z 'a Y]b!VYf`]b "bYh