

GYVUgh]Ub < UZZbYfg dcgh\iia YbhXYW_hYf Fca Ub 5 VgWX]YX VY[Y]ghYfh°

GYVUgh]Ub'<UZZbYfg'dcgh\i a 'j YfÒZZYbh`]W\hYf'Fca Ub 5VgW\]YX 'Yf_i bXYh'XUg'@YVYb']b'DUf]g'%-' %'i bX'XYb JYf`i gh']Xm``]gW\Yf'A ca YbhY"

 $DUf]g\check{z}: fUb_fY]WX !!A]h'XYf'JYfOZZYbh`]WX ib["XYg'V]g`Ub["ibjYfOZZYbh`]WX hYb'Fca Ubg' 5VgWX]YX "jcb'GYVUgh]Ub' < UZZbYfk]fX'Y]b'VYXYihYbXYg'`]hYfUf]gWXYg'KYf_"ZØf'X]Y'^2ZZYbh`]WX_Y]h ni [Ab[`]WX'[Ya UWXh'' < UZZbYfž'VY_Ubbh'XifWX'gY]bY'dc`]h]gWXYb GWXf]ZhYb'k]Y' 5ba Yf_ib[Yb'ni' <]h`Yf <math>\check{z}$ _Ubb'bib'UiWX'a]h X]YgYf'Z]_h]jYb'9fnÀ\`ib['[`AbnYb''8Yf'Fca Ubž'XYf']a ::YVfiUf%-'%']b'DUf]g'gd]Y`hž'nY][h'Y]bYb'Ya ch]cbU`Yb'A ca Ybh']b'Y]bYfhifVi`YbhYb'NY]h'ibX'kifXY'dcgh\ia'jcb' < UZZbYfg'Gc\b'C`]jYfjYfOZZYbh`]WXh''

a 'NYbhfi a 'XYf'; YgW\]W\hY'ghY\h'XYf'\Righ]nfYZYfYbXUf'FU]a i bXž XYf'gY]bY': fYi bX]b 'HYXXmž'X]Y']b 'K]f_`]W_Y]h'; Yfhfi XY'\]Y\\ž VYgi W\h'''HYXXm\UhhY']b 'XYf'J Yf[Ub[Yb\Y]h'a Y\fYfY'J YfY\fYfž i bhYf'UbXYfYa ': fUbnž'<cffk]hnž'A]ghYf'5bXfYk g'gck]Y'Y]bYb \\A\hYfYb': fUbncgYb'''\Rightarrow\fYfYb']b 'XYb''VYfØ\a hYghYb'DUf]gYf K U\fnY]W\Yb'k]Y'XYa '@ci j fYž'HfcWUXÅfc'i bX'XYa '9]ZZY\hi fa g]bX'j cb'Y]bYf'V]hhYfgØ\rightarrow\fYb''BcghU\[]Y'[Ydf\A[h'''9]b''VYgcbXYfg VYk Y[YbXYf'A ca Ybh']gh'X]Y'5VgW\]YXggnYbY'Ua 'Ni [ž'k c'g]W\FU]a i bX'i bX'HYXXm'_ØggYb'i bX']\fY'<\AbXY'Xi fW\'XUg Ni [ZYbghYf'\Uh'b''

<]ghcf]gWX Yf ?? cbhYl h i b X H\ Ya Uh]g]Yfi b[</pre>

@JYVYg[YgWk]WkhYžgcbXYfb`Ui Wk`Y]bYb`_i fnYb`A ca Ybh`XYg; `ØW_gžXYf`X]Y`XØghYfY`\]ghcf]gWkY`JYfZ]bghYfi b[`XYf`%-'\$Yf \\J\fY`_cbhYf_Uf]Yfh"'<UZZbYf`j YfZUgghY`XUg`A Ubi g_f]dh`]a`<YfVgh \%-'&ž`ni`Y]bYf`NY]hž`]b`XYf`Yf`g]Wk`[Y[YbY]bY`JYfÒZZYbh`]Wki b[]a`8f]hhYb`FY]Wk`YbhgWk]YXž`k Ug`Ui Z`gY]bY`_f]h]gWkY'<U`hi b[[Y[YbØVYf`XYf`dc`]h]gWkYb`G]hi Uh]cb`ni fØW_ni ZØ\fYb`]gh"`GY]bY
@YVYbgYf]bbYfi b[Yb`g]bX`]b`; YgWk]WkhY`Y]bYg`8Yi hgWkYb
ZYgh[Y\U`hYbž'k c`j]Y`Y`H\Ya Yb`gY]bYf``]hYfUf]gWkYb`i bX
dc`]h]gWkYb`FYZYI]cbYb`ni gUa a YbZ]Y»Yb"

 $8 \] YgY \ "9f] bbYfi b [Ybž'X]Y \ "]bYf'NY] h'nk \] gWXYb'XYb'VY] XYb \\ K Y \ "h_f]Y [Yb'j YfZUggh'k i fXYbž'gd]Y [Y`b' < UZZbYfg'gWXUfZYb \\ J YfghUbX'i bX'gY] bY'dc `]h]gWXYb', VYfnYi [i b [Yb'k]XYf''' < UZZbYf j YfghUfV'%- - - ž'i bX'X]Y'J YfÒZZYbh`]WXi b ['j cb' 5VgWX]YX 'k]fX'U`g Dfc`c ['ni 'gY]bYb'@YVYbgYf]bbYfi b [Yb'VYhfUWXhYhž'X]Y'a]h'XYb \]ghcf]gWXYb'9fY][b]ggYb'gY]bYf'NY]h'Yb ['j YfVi bXYb'g]bX''$

$A Y \setminus f \cdot \emptyset V Y f \cdot G Y V Ugh] Ub \cdot < UZZb Y f$

 $BYVYb^{-}5VgW^{-}]YX^{-}]gh^{-}GYVUgh]Ub^{-}<UZZbYf^{-}UiW^{-}ZØf^{-}UbXYfYVYXYihYbXY^{-}KYf^{-}Y^{-}VY_Ubbh^{-}GY]b^{-}6iW^{-}_{0}VYf^{-}Y[ib[Yb^{-}Y]bYgKYW^{-}gY^{-}kA^{-}Yfg^{-}f&$$&$L^{-}h^{-}YaUh]g]Yfh^{-}X]Y^{-}9bhghY^{-}ib[^{-}ibX^{-}ghk]W^{-}ib[^{-}XYf^{-}8Yac_{-}fUh]Y^{-}ibX^{-}Ybh^{-}A^{-}h^{-}5bU^{-}mgYb^{-}\]ghcf]gW^{-}Yf^{-}[b]ggY^{-}8Uf@VYf^{-}\]bUig^{-}Vh^{-}<UZZbYf^{-}Y]bY^{-}6]c[^{-}fUZ]Y^{-}@VYf^{-}K]bghcb^{-}7^{i}fW^{-}]^{-}y^{-}gck^{-}Y^{-}y^{-}bY^{-}GUaa^{-}ib[^{-}a]h^{-}\]ghcf]gW^{-}Yb^{-}YbY^{-}bY^{-}gV^{-}Ac^{-}Uf]g]YfYbXYb^{-}KU^{-}bY^{-}aib[^{-}XYf^{-}dc^{-}]h]gW^{-}Yb^{-}G]hiUh]cb^{-}UigY]bUbXYfgYhnYb^{-}$

A]h'XYf'<YfUi g[UVY'j cb' 5VgW\]YX 'XØfZYb'@YgYf']b'X]Y i bVYgW\k YfhY'NY]h'nk]gW\Yb'XYb'VY]XYb'K Y`h_f]Y[Yb'Y]bhUi W\Yb i bX'[`Y]W\nY]h]['X]Y'j cfÒghYffY]W\]gW\Yb'GdUbbi b[Yb'i bX < YfUi gZcfXYfi b[Yb'XYf'NY]h'YfU\bYb'' < UZZbYfg'Y]bn][Ufh][Y DYfgdY_h]j Y'V`Y]Vh'k Y]hYf\]b'j cb'6YXYi hi b['i bX'V]YhYh h]YZ[fY]ZYbXY'9]bV`]W_Y']b'XUg'a YbgW\`]W\Y'GY]b']b'?f]gYbnY]hYb''

: Øf a Y\f ⊕ Zcfa Uh]cbYb 'ØVYf' < UZZbYfg '@YVYb i bX 'K Yf_Y VYgi WXYb 'G]Y 'X]Y 'GY]hYb 'j cb 'dYf `YbhUi WX Yf 'cXYf 'ghÒVYfb 'G]Y ']b gY]bYb '9f]bbYfi b[Yb 'Ui Z'5a Uncb" 8]Y'JYfÒZZYbh`]W\ib['jcb' 5VgW\]YX 'gYhnh'Y]b'k]W\h][Yg'NY]W\Yb]b'XYf'@]hYfUhif'ibX'`Àggh'ibg'X]Y'nY]h`cgYb'H\YaYb'jcb'@]YVYž JYf`igh'ibX'XYb'GW\UhhYb'XYf';YgW\]W\hY'bYi'Yf`YVYb"'@YgYb'G]YaY\f'XUfØVYf'UiZ:5N"

8 YhU]`g	
JcfZU``	Gcbgh][Yg
Cfh	DUf]gž: fUb_fY]WX
EiY``Yb	• k k k "ZUn"bYh
	• k k k "Ua Uncb"XY
	k k k "dYf`YbhUi WXYf"XY

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