

7\Y`gYU'j YfdZ`]W\hYh'GUbW\c. ?caah ^Yhnh'X]Y'K YbXY'ZØf'XYb': `Ø[Y`ghUf3

\UXcb GUbWkc [`Abnh VY]a : 7 '7 \Y `gYUž hfA [h ni a '9fZc `[']b
XYf '7 cb ZYfYbWY @YU[i Y 'VY] i bX ghY \h j cf i b [Yk]ggYf
Ni _i bZh"



@cbXcbž'JYfY]b][hYg'? Ob][fY]WX !! *JXcb GUbWxc \ Uh']b gY]bYf YfghYb GU]gcb VY]a :: 7 · 7 \ Y`gYU OVYfnYi [YbXY @Y]ghi b[Yb [YnY][hž YXcW VY]VhX]Y ?? cbghUbn]b gY]bYa · Gd]Y`Y]bY < YfUi gZcfXYfi b["'8 Yf 6i bXYg`][U!F ØW__Y\fYf \ Uh'YbhgWXY]XYbX ni a :; Yk]bb XYf I 9: 5 · 7 cbZYfYbW @YU[i Y VY][YhfU[Ybž]bgVYgcbXYfY a]h'Y]bYa · Hcf]a ::]bU`Y [Y[Yb 6Yh]g GYj]``Už XUg 7 \ Y`gYU ni · Y]bYa · (.%G]Y['ZØ\fhY" \ b XYf U_hi Y``Yb GU]gcb Yfn]Y`hY GUbWx c]b · (& Gd]Y Yb · ZØbZ'HcfY i bX · VYfY]hYhY nY\b k Y]hYfY j cfž k Ug gY]bY · 6YXYi hi b[']a · ? UXYf i bhYfghfY]WX h" @Ui h' XYfk YghYb "XY g]bX X]Y J YfUbhk cfh`]WX Yb 'j cb · 7 \ Y`gYU'j cb GUbWx cg: A\][_Y]hYb · ØVYfnYi [hi bX \ UVYb X]Y ? Ui ZdZ]WX h ZØf XYb · Gd]Y`Yf U_h]j]Yfhž k Ug Y]bY J YfdZ]WX hi b['j cb'' \$ A]``]cbYb 9i fc · VYXYi hYh"

8]Y 8]g_i gg]cbYb'i a 'GUbWkc g'Ni _i bZh'g]bX'YXcWk'bcWk'b]Wkh UV[YgWk'cggYb"'Hfchn'XYf'U_h]j]YfhYb'? Ui ZdZ]Wkh'[UV'Yg , VYf'Y[i b[Ybž'g]Wk'j cb'X]YgYf'ni '`ÒgYbž'X]Y']b''YhnhYf'NY]h'YXcWk b]Wkh'a Y\f']a ': c_i g'ghY\Yb"'GUbWkc'k Uf'ni j cf']a 'Gca a Yf'&\$&% ZØf',) 'A]``]cbYb'9i fc'j cb'6cfi gg]U'8cfha i bX'ni 'A UbWkYghYf I b]hYX'[YkYWkgY'hž'k c'gY]bY'? Uff]YfY'b]Wkh'XYb'Yf\cZZhYb'JYf`Ui Z bU\a"

< YfUi gZcfXYfi b[Yb'i bX'DYfgdY_h]j Yb

8 Yf A UbU[Yf 9bnc A UfYgWU \ Uh 6 Y X Y b _ Y b \]bg]W h`]W X Y f?cbg]ghYbn j cb GUbW c [Y Ài » Yfhi b X d f Ø Zh V Y f Y]hg 'U h Y f b Uh]j Y C dh]cb Y b z X Ufi bhYf Hu Y bh Y k]Y \ Ja]Y 6 mbc Y!;]hhY bg j cb 6 cfi gg]U 8 cfha i b X i b X B]W c K]``]Ua g j ca '5 h\ `Y h]W 7 `i V " G c ``hY 7 \ Y `g Y U 'g]W \ [Y [Y b 'Y]b Y 'J Y f d Z]W hi b ['j cb 'G Ub W c 'Y b hg W Y] X Y b z _ Obb hY 'X Ug 'Z Ø f 'X Y b 'G d]Y `Y f b Y [Uh]j Y : c `[Y b '\ UV Y b z k Y]` 'Y f a O[`]W Y f k Y]g Y]b Y f \ U `V 'Y]b Y g ' \ J\ f Y g j cb 'nk Y] '7 `i V g Ui g [Y g W `c g g Y b 'k]f X " A Ub W Y g h Y f 'I b]hY X '\ Uh 'g]W 'a]hh`Y f k Y]` Y _ `Uf 'd c g]h]cb] Y f h i b X 'X]Y 'F Ø W _ Y \ f j cb 'G Ub W c 'b]W h]a 'G]b b z k Ug g Y]b Y 'A Uf _hf Y `Y j Ub n k Y]hY f V Y Y]b h f A W h] [Y b _ Obb h Y "

8]Y`Ni_i bZhj cb`*JXcb`GUbW\c`V`Y]Vh`U`gc`gdUbbYbX"`GY]bY
@Y]ghi b[Yb`]b`XYf`7cbZYfYbWY`@YU[iY`_ObbhYb`]\b`j cfYfgh`]b
7\Y`gYU g`D`Ubi b[Yb`\U`hYbž'k À\fYbX`X]Y`I bg]W\Yf\Y]hYb`]b`XYf
DfYa]Yf`@YU[iY`: fU[Yb`Ui Zk YfZYb"`7\Y`gYU`ghY\hj cf`XYf
<YfUi gZcfXYfi b[ž'X]Y`6U`UbWY`nk]gW\Yb`Gd]Y`YfYbhk]W_`i b[`i bX
XYb`5bZcfXYfi b[Yb`XYg`K YhhVYk YfVg`ni 'Z]bXYb"

: $\emptyset f'bcWX'a Y f' = bZcfa Uh]cbYb' <math>\emptyset VYf': i VU' bUWXf]WX hYb' i bX !YfY][b]ggYž'V'Y]Vh'Y]b'6']W_'Ui Z'D'UhhZcfa Yb'k]Y'$

 $: \textbf{i} \ \textbf{ggVU} ``\textbf{HfUbgZYfg} `Ya \ dZY \setminus `Ybgk \ Yfhz `X]Y `U_hi \ Y``Y `9f[\ YVb]ggY \\ \textbf{i} \ bX `5bU `mgYb `ni `U``Yb `[fc <math>\Rightarrow$ Yb `Yi fc dA]gWX Yb `@[Yb `V]YhYb"

8 Y hU]`g	
J c f ZU``	HfUbgZYf
Cfh	@cbXcbžJYfY]b][hYg`?Òb][fY]WX
EiY``Yb	• k k k "XYfk YghYb"XY
	• gdcfhg"mU\cc"Wca
	k k k "Zi ggVU``hfUbgZYfg"Wca

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