FUmg'8ca]bUhY'H][Yfg'%(!,.'MUbXm'8ÉUn G\]bYg'k]h\'Hkc'<caYfg'

H\Y`HUa dU`6Um`FUmg`hf]i a d\YX`cj Yf`h\Y`8Yhfc]h`H][Yfg %(!, `cb`; bY`&%ž`&\$&) ž`k]h\`ghUbXci h`dYfZcfa UbWYg`Zfca MUbXm`8ÉUn`UbX`A Uhh`H\U]gg"



; Ycf[Y'A "'GhY]bVfYbbYf':]Y`Xž'HUa dUž': @ž'I G5'! *\U
h\f]``]b['a UhW\i d'Uh'; Ycf[Y'A "'GhY]bVfYbbYf':]Y`Xž'h\Y'HUa dU
6Um'F Umg'WUg\YX'k]h\'h\Y'8Yhfc]h'H][Yfgž'h\Y'hYUa 'k]h\'h\Y'VYgh
fYWcfX']b'A U'cf'@YU[i Y'6UgYVU``"'H\Y'Z]bU``hU``m3'5'fYgci bX]b[
%(!, 'j]Whcfm'Zcf'h\Y'F Umgž'\][\`][\hYX'Vm'U'ghY``Uf'dYfZcfa UbW\
Zfca 'MUbXm'8 ÉUnž'k\c'k Ybh'' 'Zcf') 'k]h\'hk c'\ca Y'fi bgž'a Uf_]b[
h\Y'gYWcbX'a i `h]\ca Yf'[Ua Y'cZ'\]g'WUfYYf"'H\]g'j]Whcfm'\Ug
Zi fh\Yf'WYa YbhYX'h\Y'F Umg'dcg]h]cb']b'h\Y'5a Yf]WUb'@YU[i Y
9Ughž'Ug'h\Ym'fYa U]b''I gh'%") '[Ua Yg'VY\]bX'h\Y'BYk 'Mcf_
MUb_YYg"

H\Y'YI W]hYa Ybh'X]Xb h'ghcd'k]h\'8 ÉUn"'A Uhh'H\U]gg'a UXY'U g][b]Z]WUbh']a dUWhž'Xf]j]b[']b'Zci f'fi bg"'7i fh]g'A YUX'U`gc'g\cbYž

MUb X m 8 ÉUn g F Y Wc f X! 6 f Y U_]b[B][\ h

8 ÉUn g'Wcbhf]Vi h]cbg'k YfY'Wfi W]U``hc'h\Y'[Ua Y"'<]g'hk c'\ca Y fi bg'bch'cb`m'\Y`dYX'dfcdY``h\Y'gWcfY'Vi h'U`gc'gYh'U'ZfUbW\]gY fYWcfX'k]h\'\]g'%- h\'WUfYYf'`YUXcZZ'\ca Yf"'H\]g'dYfZcfa UbWY'\Ug_Ydh'\]a 'gWcfW\]b['\ch'Uh'h\Y'd`UhYž'fU]g]b['\]g'VUhh]b['Uj YfU[Y Zfca '"&' - 'hc'"&++'UWfcgg'Ub'%![Ua Y'\]hh]b['ghfYU_"' Gc`]X Wcbhf]Vi h]cbg'Zfca 'h\Y'`ck Yf'dUfh'cZ'h\Y'`]bYi d'k YfY'_Ym'hc'ci f cZZYbg]j Y'gi WWYggž 'A UbU[Yf'?Yj]b'7Ug\'bchYXž'dfU]g]b['h\Y hYUa g'Wc``YWh]j Y'YZZcfh"

 $\label{thm:converse} H\Y`FUmg`di h`cb`U`gdYWhUW``Uf`cZZYbg]j Y`X]gd`Umž`hU``m]b[``%(fi bgž`h\Y]f`h\]fX!\][\Ygh`hchU``h\]g`gYUgcb"`H\Ym`\Uj Y`a UbU[YX`hcgWcfY`Xci V`Y!X][]h`fi bg`]b`gYj Yb`cZ`h\Y]f``Ugh`&)`[Ua Ygž`Ug][b]Z]WUbh`UW\]Yj Ya Ybh`Zcf`U`hYUa `h\Uh`gYYa g`hc`VY`\]hh]b[`]hgghf]XY`Ug`h\Y`gYUgcb`dfc[fYggYg"$

H\Y'7ca dYh]h]j Y'@UbXgWUdY

 k UgʻUʻg]`j Yfʻ`]b]b[ˈZcfʻ8Yhfc]hžʻ[c]b[ʻ'ˈZcfʻ'ˈk]h\ʻhk cʻ\ca YfgʻUbX Zci fʻF6=gžʻg\ck WUg]b[ˈk\m'\Y'\UgʻVYYbʻgi W\ʻUʻj U`i UV`Yʻd`UmYf `UhY`m"

@cc_]b['U\YUXž'h\Y'F Umg'UfY'gYh'hc'ZUWY'h\Y'H][Yfg'U[U]bž'k]h\GUk mYf';]dgcb!@cb['gW\YXi `YX'hc'd]hW\'Zcf'8 Yhfc]h'U[U]bgh'F mUb DYd]ch'cZ'h\Y'F Umg"'DYd]ch'Vf]b[g'U'(!*'fYWcfX'UbX'U'' "%%'9F 5 'hc h\Y'a ci bXž'UbX'ZUbg'UfY'YU[Yf`m'Ubh]W]dUh]b['k \Uh'k]``'WYfhU]b`m VY'Ubch\Yf'Yb[U[]b['W\UdhYf']b'h\]g'Yj c`j]b['VUgYVU``'gU[U"

K]h\ 'YUW\ '[Ua Yž'h\ Y 'ghU_Yg'[Yh'\][\ Yfž'Ub X 'Vch\ 'hY Ua g'_bck Yj Yfm'fi b 'Wci bhg" K \ Yh\ Yf'mci fY 'U'X]Y!\ UfX 'F Umg'ZUb 'cf W\ YYf]b['Zcf'h\ Y 'H][Yfgž'h\ YfY g'gca Yh\]b['hc'VY'gU]X 'Zcf'h\ Y YI WhYa Ybh'c Z'gi a a Yf'VUgYVU```

cfa cfY`XYhU]`YX`ghUhg`UbX`UbU`mg]gž'W\YW_`ci h`6UgYVU`` GUj Ubh"

7 UhW\ 'h\ Y 'Z\ ```fY\\Ud'cZ'h\ Y'[\ Ua\ Y'cb':\ c\ I\ \& '\8\ Y\hfc\]h'\Ub\X'\ a\ cfY\]\text{bg}[\ \hg'\Zfca\ '\A\ \@6\ "\\\cappaca\ "

8 YhU]`g	
Cfh	; Ycf[Y'A "'GhY]bVfYbbYf':]Y`Xž'HUa dUž': @ž
	I G5
EiY``Yb	• k k k "Zcl &XYhfc]h"Wca
	• k k k "a `V "Wca
	VUgYVU``gUj Ubh"a `V"Wca

6 Ygi W Yb 'G]Y 'i bg 'Ui Z 'a Y]b!k]Yb "b Yh