A UXf]X/ \$' - /g 8][]hU`HfUbgZcfa Uh]cb. ?Ym'9j Ybhg'G\Ud]b['h\Y': i hi fY°

8]gWcjYf'9Vfc':ccXg/_\$'-/'&\$&) 'g\UfY\c`XYf'a YYh]b[']b AUXf]Xž'X]gW gg]b['Wfi W]U`'Vi g]bYgg'ghfUhY[]Yg'UbX gi ghU]bUV]`]hm']b]h]Uh]j Yg"



A UXf]Xž'9gdUÍ U'!'H\Y'V]ca YhUbc'gYWhcf']b'GdU]b']g'[YUf]b['id Zcf'd]j chU`'XYj Y`cda Ybhg'Ug'j Uf]ci g']bgh]hi h]cbg'Wca Y'hc[Yh\Yfhc'X]gW' gg']hg'Zi hi fY"'Cb'* bY''%*ž'&\$&) ž'U'g][b]Z]WUbh'Yj Ybh'hU_Yg d`UWY']b'A UXf]Xž'k]h\'h\Y'`Ui bW\'cZ'h\Y'; Ug'JYfXY'd`UhZcfa ž U]a YX'Uh'dfca ch]b['V]ca YhUbc"'H\]g']b]h]Uh]j Y'fYZYWhg'h\Y [fck]b['fYWc[b]h]cb'cZ'V]ca YhUbc'Ug'U'WcfbYfghcbY'Zcf'U gi ghU]bUV`Y'UbX'W]fW'`Uf'YWcbca mž'UbX']h'\cdYg'hc'UhhfUWh UhhYbh]cb'Zfca 'j Uf]ci g'ghU_Y\c`XYfg'YU[Yf'hc'dUfh]W]dUhY']b'h\]g [fYYb'fYj c`i h]cb"

\$\display \UXX]h]cb\tin\Y\dfcXi\Wh]cb\cZV]ca\YhUbc\Zfca\V]c[\Ug\d\Umg\U\Wfi\W]\U\rightarrow fc\Y\]b\f\Xi\W]b[\[f\Y\b\ci\g\rightarrow g\rightarrow \frac{1}{2}\text{Ug\rightarrow g\rightarrow g\rightarrow g\rightarrow g\rightarrow g\rightarrow g\rightarrow \frac{1}{2}\text{Ug\rightarrow h\rightarrow X\rightarrow g\rightarrow g\rightarrow \frac{1}{2}\text{U\rightarrow h\rightarrow X\rightarrow g\rightarrow \frac{1}{2}\text{U\rightarrow h\rightarrow \frac{1}{2}\text{U\rightarrow \frac{1}{2}\text{U\rightarr

H\Y'dfcWYggž'k\]W\'\]b[Yg'cb'UbUYfcV]WXYWca dcg]h]cb'cZ cf[Ub]Wa UhhYfž'cdYbg'Uj Ybi Yg'Zcf'k UghY'fYWcj Yfmž'Wcbhf]Vi h]b[g][b]Z]WUbh`m'hc'h\Y'fi fU`']bXi ghf]U```UbXgWUdY"'A cfYcj Yfž']h ZUW]`]hUhYg'h\Y'fYWcj Yfm'cZ'7C&'Zcf']bXi ghf]U``'Udd`]WUh]cbgž a Uf_]b['U'ghf]XY'hck UfX'WUfVcb!bY[Uh]j Y'gc`i h]cbg"

K \ Uh g 8 f]j]b[6]ca YhUbc : cfk UfX3

H\Y']bWfYUg]b['XYa UbX'Zcf'WYUbYf'YbYf[m'gcifW'g'\Ug'dih V]ca YhUbc']b'h\Y'gdch`][\h"'GdUb]g\'YbhYfdf]gYg'UfY'bck 'YmY]b[V]c[Ug'Ug'U'_Ym']b[fYX]Ybh']b'h\Y'YbYf[m'hfUbg]h]cb"'H\]g fYbYk UV`Y'fYgcifW']g'dfcXi WYX'Zfca 'cf[Ub]Wk UghYž'gi W\'Ug U[f]W'`hifU`fYg]XiYg'UbX'gYk U[Y'g`iX[Yž'h\fci[\'UbUYfcV]W X][Ygh]cb"'H\Y'fYgi`hUbh'V]c[Ug']g'a U]b`m'Wca dcgYX'cZ'a Yh\UbY UbX'WUfVcb'X]cI]XYž'k\]W\Z'k\Yb'dif]Z]YXž'hfUbgZcfa g']bhc a Uf_Yh!fYUXm'V]ca YhUbcž'WUdUV`Y'cZ'VY]b[']b'YWhYX']bhc'h\YbUhifU`'[Ug'[f]X'cf'igYX'Ug'jY\]WY'ZIY`ž'Ug'XYhU]`YX'Vm'FYdgc`"

K]h\ 'j Uf]ci g'd`UmYfg']b 'h\ Y 'Z]Y`Xž']bWi X]b['B]ddcb'; UgYgž'k \c Ya d\Ug]nY 'hU]`cfYX 'gc`i h]cbg']b '[Ug'gYdUfUh]cb 'hYW\bc`c[]Ygž'h\ Y]bZfUghfi Whi fY 'Zcf'V]ca YhUbc']g'[fUXi U``m'hU_]b['g\UdY"'H\ Y Wc``UVcfUh]cb 'k]h\ 'V]c[Ug'dfcXi WYfg'Yb\UbWYg'h\ Y 'YZZYWh]j YbYgg cZ'V]ca YhUbc'd`Ubhg'k \]`Y 'g][b]Z]WUbh`m'fYXi W]b['h\ Y 'cj YfU`` WUfVcb 'Zcchdf]bh'UggcW]UhYX 'k]h\ YbYf[m'dfcXi Wh]cb"

IdWca]b[9b[U[YaYbhg]bAUXf]X

 $H\Y'U[YbXU'Zcf' \not\Rightarrow bY''\%z''Ug'bchYX'Vm' \not\Rightarrow ZcVUYz'']g'dUW_YX'k]h YggYbh]U``a YYh]b[g'UbX'dfYgYbhUh]cbg'''H\YgY']bWi XY'gYgg]cbg `YX'Vm'\][\!dfcZ]`Y'cf[Ub]nUh]cbg'gi W\'Ug' \not= 6'GdU]b'UbX'; cc[`YZcW'g]b['cb'Yb\UbW]b['Wca dYh]h]j YbYgg'Zcf'GA 9g']b'h\Y'X][]hU`U[Yz'k\]W\'Z fh\Yf'gc`]X]Z]Yg'h\Y'ZfUa Yk cf_'Zcf']bbcj Uh]cb'h\Uh k]``gi ddcfh'[fYYb'dfcYWhg`]_Y'V]ca YhUbc''$

 $\label{eq:GiWallian} Gi W \ `[Uh Yf]b[g`dfcj] XY`ZYfh]`Y`[fcibX`Zcf`X]U`c[iY`cb`h Y YWcbca] W dchYbh]U``cZ`V]ca YhUbcž`Ug`h Y`]bXighfm``YUXYfg`U]a `hc W a Ybh`]hg`d`UWY`]b`h Y`ZihifY`cZ`YbYf[m''5g`W]h]Yg`Yjc`jY`UbX`h Y XYa UbXg`Zcf`WYUb`YbYf[m'f]gYž`]b]h]Uh]jYg``]_Y`; Ug`JYfXY`k]``$

d`Um'U'd]j chU`fc`YžYbgi f]b['h\Uh'GdU]b'fYa U]bg'Uh'h\Y'ZcfYZfcbh cZ'gi ghU]bUV`Y'YbYf[m'dfcXi Wh]cb"

5g'k Y``cc_'Zcfk UfX`hc'k \Uhg'i bZc`X]b[']b'h\Y'YbYf[m'gYWhcfž'h\Y ZcW'g'fYa U]bg'WYUf.'V]ca YhUbc']g'bch'' qh'U'hfYbX/']hg'U bYWYgg]hm'h\Uh'a Um'fYXYZ]bY'ci f'UddfcUW\'hc'YbYf[m gi ghU]bUV]`]hm"

8 Y hU]`g	
Cfh	A UXf]Xž'9gdUĺ U
EiY``Yb	• k k k "]b Zc V U Y "Wc a
	kkk"]bXighf]UWcbYWhUXU(\$"[cV"
	Yg
	• k k k "fYdgc`"Wca

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