Ghcfa '8 YI hYf'cb'h\ Y'< cf]ncb. 'Gci h\ Yfb GhUhYg'6fUWY'Zcf'=a dUWh'

Cb' * `m'%+ ž'&\$&) ž'ghcfa '8 YI hYf'h\fYUhYbg'h\Y'; i `Z'7cUgh/dfYdUfY'Zcf'gYj YfY'k YUh\Yf'UbX'dcgg]V`Y'Yj UW'Uh]cbg'Ug B < 7'a cb]hcfq"



HU``U\UggYYž: `cf]XUžI G5'!'5g': `cf]XU'[YUfg'i d'Zcf'Ubch\Yfhi a i `hi ci g'k YUh\Yf'Yj Ybhž'U``'YmYg'UfY'cb'U'`ck!dfYggi fYgmghYa 'Vi]`X]b[']b'h\Y'DUb\UbX`Yž'k]h\'h\Y'dchYbh]U``hc'Yj c`j Y]bhc'<i ff]WUbY'8YI hYf"'H\Y'BUh]cbU`'<i ff]WUbY'7YbhYf'fB<7'e]g_YYb`m'a cb]hcf]b['h\]g'gmghYa 'Ug']h'g`ck `m'dfc[fYggYg'VYhk YYbHU``U\UggYY'UbX'DUbUa U'7]hmž'XfUk]b[']b'hfcd]WU`'a c]ghi fY'Zfcah\Y'cWYUbž'WfYUh]b['WcbX]h]cbg'f]dY'Zcf'XYj Y`cdaYbh''5`h\ci[\bc'hfcd]WU`'WhWcbY'\Ug'cZZ]W]U``m'ZcfaYX'mYhž'h\YfYg'U'Vi nn']bh\Y'U]f'UVci h'k\Uh'Wci `X'VYWcaY'h\Y'Zci fh\'ghcfa'cZ'h\]g\iff]WUbY'gYUgcbž'k\]WX'\Ug'YI WYXXYX'YI dYWhUh]cbg']b'Vch\]bhYbg]hm'UbX'ZfYei YbWhž'Ug'bchYX'Vm'&\$\$%cb`]bY'Wca"

: cf'a Ubm'fYg]XYbhgž'h\]g'g]hi Uh]cb'fU]gYg']a a YX]UhY'WcbWYfbg"

H\Y``cca]b['h\fYUh`cZhfcd]WU``ghcfa g`UbX`gYj YfY`ZccX]b[
]a dUWhg`bch`cb`m`h\Y``cWU``Wca a i b]h]Yg`Vi h`h\Y`VfcUXYf
]bZfUghfi Whi fY`Ug`k Y``"-\=Z'8YI hYf`XYj Y`cdgž']h`Wci `X`X]gfi dh`YbYf[m
gmghYa g`UbX``cWU``gi dd`m`W\U]bgž'Ya d\Ug]n]b['h\Y'i f[YbWm`cZ
dfYdUfYXbYgg`UWh]cbg"'5WWcfX]b['hc`&\$\$%cb`]bY"Wca ž'U`Yfhg`Zcf
gYj YfY`k YUh\Yf`\Uj Y`U`fYUXm`VYYb`]ggi YX`Zcf`h\]g`k YY_ž'k]h\
dfYX]Wh]cbg`gi [[Ygh]b[']bhYbgY`fU]bZU`` dchYbh]U``m`gi fdUgg]b[
+* a a UWfcgg`h\Y'; i `Z'7cUgh`Zfca ::`cf]XU`hc`@ci]g]UbUž
]a dUWh]b['UfYUg`Ug`ZUf`Ug`5`UVUa U`UbX`A]gg]gg]dd]"

I f[Ybh'DfYdUfUh]cbg'l bXYfk Um

$$\label{thm:condition} \begin{split} &\text{H} \setminus \text{Yi} \text{ f[YbWmcZdfYdUf]b[} \text{ Zcf} \text{ gi WX} \text{ ghcfa } \text{ giWbbch'VY'cj YfghUhYX''} \\ &\text{5i h} \setminus \text{cf]h]} \text{Yg'UfY'} \text{Xci V} \text{]b[} \text{ Xck b cb'Ya Yf[YbWm'd'Ubg'UbX} \\ &\text{WccfX]bUh]b[} \text{ ik } \text{]h} \text{ : } \text{9A 5'hc'Ybgi fY'fYUX]bYgg'Zcf'Ubm} \\ &\text{Yj Ybhi U']h]} \text{Yg''H} \setminus \text{Y'B} < \text{7'k Ufbg'h} \setminus \text{Uh'H} \text{ ifgXUm']g'dc]gYX'hc'VY} \\ &\text{dUfh]} \text{W'} \text{`Uf'm'XUb[Yfci gž'YgdYW]U``m'Zcf'W]h]} \text{Yg'`']} \text{_Y'BYk'} \text{`Cf'YUbg'UbX} \\ &\text{6Uhcb'Fci [Y'': cfYWUghg'\Uj Y'd`UWYX'U''Yj Y''&'ci h'cZ'('Zcf': f]g_'cb} \\ &\text{H} \text{ifgXUm'UbX'YgWU`UhYX'h} \text{Uh'hc'U''Yj Y'''} \text{ci h'cZ'('Zcf': f]XUm']b} \\ &\text{dUfhg'cZ'@ci]g]} \text{UbUž'dc]bh]b['hc'U'gYf]ci g'f]g_'cZ'ZUg\'Z'ccX]b['UbX'f]j'Yf'Cj YfZck'''H\Y'h]a Y'Zcf'fYg]XYbhg'UbX'j]g]hcfg'hc'UWh']g'bck'''} \end{aligned}$$

@cWU``cZZ]W]U`g`UfY`UXj]g]b['h\Uh`Yj YfmcbY`g\ci `X`\Uj Y`U`ZUa]`m Ya Yf[YbWm'd`Ub`]b`d`UWYž'Wca d`YhY`k]h\ 'gi dd`m'_]hg`UbX`dcfhUV`Y W\Uf[Yfg`Zcf`YggYbh]U``XYj]WYg"`K]h\ 'h\Y`gc]``U`fYUXm`gUhi fUhYX Zfca `fYWYbh`fU]bgž'h\Y`f]g_g`UfY`W]a V]b['Vm'h\Y`\ci f"`FcUX gUZYhm`]g`Ubch\Yf`j]hU``WcbWYfb/i bbYWYggUfm`hfUj Y``Xi f]b['ghcfa WcbX]h]cbg`WUb``YUX`hc`X]gUghfci g`WcbgYei YbWYg'Xi Y`hc i bdfYX]WhUV`Y`ZccX]b["

$@cc_]b[5\YUXhc8YIhYf]$

K\]`Y`&\$\$%cb`]bY"Wca `fYdcfhg`\][\`dfcVUV]`]h]Yg`Zcf`8YI hYf g
XYj Y`cda Ybhž`]h g`Wfi W]U``hc`Wcbg]XYf`h\Y`VfcUXYf`a YhYcfc`c[]WU`
WcbhYI h"`5g`<YfU`XcXYa YI]Wc"Wca `\][\`][\hgž'h\YfY g`U`(\$I
WXUbWY`cZ'h\Y``ck!dfYggi fY`UfYU`VYWca]b[`U`Zi``!ZYX[YX`WhWcbYk]h\]b`h\Y`bYI h`(, `\ci fg"'<ck Yj Yfž'XYgd]hY`gca Y`gdYW'`Uh]cb
fY[UfX]b[`h\Y`dchYbh]U``Zcf`U` Gi dYf`Ghcfa ž`h\Y`YI dYfh

WcbgYbgi g'X]ga]ggYg'h\Uh'bch]cb'Zcf'h\Y']a a YX]UhY'Zi hi fY"'Gi W\Yj Ybhg'hmd]WU``m'cWW f'VYhk YYb'GYdhYa VYf'UbX'5df]`ž'dcg]h]cb]b[8YI hYf'Ug'U'g][b]Z]WUbh'mYh'hmd]WU``gi a a Yf'ghcfa "

#D ZUWhž 8 YI hY f 'k ci `X 'c]b 'h\ Y 'fUb_g 'c Z'YUf`]Y f 'ghc fa g``]_Y '5bXfYUž 6Uffmž 'UbX '7 \ Ub hU`ž 'a Uf_]b[']hg 'c ZZ]W]U` 'd`UWY ']b 'h\ Y '&\$&' '5h`Ub h]W <i ff]WUbY 'GY Ugc bž 'ci h`]bYX 'V m'h\ Y 'B Uh]c bU` '<i ff]WUbY '7 Y b hY f" K]h\ 'bc 'W' ffY bh 'gmghY a g 'Zc fa]b[']b 'h\ Y 'DUW]Z]WZ 'UhhY b h]c b 'f][\ h`m fY a U]bg 'Zc W' gYX 'c b 'h\ Y '5h`Ub h]WUg 'a Y hY c fc `c[]ghg 'hfUW_'h\]g Y j c`j]b['g]hi Uh]c b"

H\Y`Wca]b[`XUmg`k]``dfcjY`Wf]h]WU``Ug`YjYfmcbY`Zfca `WcUghU`fYg]XYbhg`hc`cZZ]W]U`g`dfYdUfYg`Zcf`k\Uh`Wci`X`VY`U`W\U``Yb[]b[kYUh\Yf`cfXYU`"`?YYd`WcgY`hUVg`cb`kYUh\Yf`idXUhYgž`UbXYbgifY`mcif`d`Ubg`UfY`fYUXm`hc`fc``"`K\Yh\Yf`]h`XYjY`cdg`]bhc8YlhYfcf`bchž`h\Y`bYWYgg]hm`Zcf`fYUX]bYgg`]b`h\Y`ZUWY`cZ`fUd]X`mW\Ub[]b[`kYUh\Yf`dUhhYfbg`]g`acfY`dfYgg]b[`h\Ub`YjYf"

 $GhUm^{\cdot}]bZcfa \ YX \check{z}^{\cdot}ghUm^{\cdot}dfYdUfYX \check{z}^{\cdot}UbX^{\cdot}Yh \ g^{\cdot}bUj \][\ UhY^{\cdot}h\backslash YgY^{\cdot}k \ UhYfg hc \ [\ Yh\backslash Yf''$

cf'a cfY']bZcfa Uh]cbž'W\YW_'ci h'h\Y'XYhU]`YX'fYdcfhg'Vm' &\$\$%cb`]bY"Wca ž'\YfU`XcXYa YI]Wc"Wca ž'UbX'b\W'bcUU"[cj Zcf'i dXUhYq'cb'8YI hYf"

8 YhU]`g	
Cfh	HU``U\UggYYž': `cf]XUž'I G5
EiY``Yb	• &\$\$%cb`]bY"Wca
	• \YfU`XcXYaYI]Wc"Wca"aI
	• k k k "b\WbcUU"[cj

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