## : cfh'K Ug\]b[ hcb'A Ub'7\Uf[YX']b G\cW\_]b['; `YbUfXYb'A i fXYf'7UgY

5: cfh'K Ug\]b[hcb'a Ubž'HUZUf]'7`Ui nY`ž']g'W\Uf[YX'k]h\'h\Y a i fXYf'cZ'7cfYb`]i g'K]`gcb'Zc``ck]b['U'g\cch]b['X]gdi hY']b
; `YbUfXYb"



&, \$\$ 'K ccX' < c``ck 'HYffUWYž': cfh'K Ug\]b[hcbž'A 8ž'I G5'!

J]c`YbWY'\Ug'ghfi W\_'U[U]b']b'Df]bWY'; Ycf[Y g'7ci bhmž'Ug'U

&' !mYUf!c`X'a Ub'Zfca : cfh'K Ug\]b[hcbž'HUZUf]'7`Ui nY`ž'ZUWYg

W\Uf[Yg'Zcf'h\Y'a i fXYf'cZ'&%!mYUf!c`X'7cfYb`]i g'K ]`gcb'Zfca

; `YbUfXYb"'H\Y'hfU[]W]bW]XYbh'i bZc`XYX'cb'A Um'%- 'Uh

Uddfcl]a UhY`m'%&. &\$ 'U"a "']b'h\Y'&, \$\$ 'V`cW\_'cZ'K ccX' < c``ck

HYffUWYžk\YfY'dc`]WY'fYgdcbXYX'hc'U'fYdcfh'cZ'[i bZ]fYž'cb`m'hc

Z]bX'K]`gcb'gi ZZYf]b['Zfca 'gYj YfY'[i bg\ch'k ci bXg"' < Y'k Ug

dfcbci bWYX'XYUX'Uh'h\Y'gWYbYž'`YUj]b['U'Wca a i b]hm'hc'[fUdd`Yk]h\'h\Y'UZhYfa Uh\'cZ'h\]g'gYbgY`Ygg'Yj Ybh"

 $5 \ WWcfX]b[\ 'hc' \ DUhWX\ z'7`Ui\ nY``\ Ug'VYYb'WX\ Uf[\ YX'k\ ]h\ 'Z]fgh!XY[\ fYY\ a\ i\ fXYf'UbX'fY`UhYX'cZZYbgYgz'][\ b]h]b[\ 'gYf]ci\ g'X]gW'\ gg]cbg'Ufci\ bX$ 

 $\label{thm:condition} $$ YgWU`Uh]b['j]c`YbWY']b'h\Y'UfYU"'H\Y'dc`]WY']bj Ygh][Uh]cb'fYj YU`YX h\Uh'7`Ui nY``UbX'K]`gcb'\UX'VYYb'Ya Vfc]`YX']b'Ub'cb[c]b[X]gdi hYž'\]bh]b['Uh'U'XYYdYf!fcchYX'hYbg]cb'VYhk YYb'h\Y'hk c"7i ffYbh`mž'7`Ui nY``fYa U]bg']b'W'ghcXm']b'6fck UfX'7ci bhmž:`cf]XUž'ZUW]b['i bfY`UhYX'W\Uf[Yg'k\]`Y'Uk U]h]b['YI hfUX]h]cb'VUW_hc'Df]bW'; Ycf[Y g'7ci bhm'$ 

## H\Y'K ]XYf'D]Whi fY

 $H\Y'hfU[]W`cgg'cZ'mcib[``]ZY'fU]gYg'`Uf[Yf'eiYgh]cbg'UVcih'Wf]aYXmbUa]Wg']b'AUfm`UbX''H\Y'AUfm`UbX''GhUh]gh]WU``5bU`mg]g'7YbhYffAG57\{Z'dUfh'cZ'h\Y'; cjYfbcfg'CZZ]WY'cZ'7f]aY'DfYjYbh]cb'UbXDc`]Whz'd`Umg'U'Wf]h]WU``fc`Y']b'YlUa]b]b['Wf]aY'XUhU'UWfcgg'h\Y'ghUhY''5\W\cfX]b['hc'[cWdd"aUfm`UbX''[cjz'h\Y'AG57'bch'cb`mZUW]`]hUhYg'ghUhYk]XY'Wf]aY'XUhU'g\Uf]b['Vih'U`gc'[i]XYg'`cWU`dc`]Wm'XYjY`cdaYbh'hc'Yb\UbWY'diV`]WgUZYhm''H\Y]f'kcf_']gWfiW]U`'Zcf'ibXYfghUbX]b['h\Y'hfYbXg'h\Uh'Wcbhf]VihY'hc'giWXj]c`Ybh']bW]XYbhg''$ 

7 f]a Y 'ghUh]gh]Wg'Wc``YWhY X 'V m'h\ Y 'A G57 'dfcj ]XY ']bg][\hg'h\ Uh'UfY j ]hU``Zcf'WfY Uh]b[ 'Y ZZY Wh]j Y ']bhY fj Y bh]cbg" '5g'c Z'bck ž'h\ Y 'A G57 Wc``UVcfUhYg'k ]h\ 'j Uf]ci g'di V`]WgUZY hm'U[ Y bW]Yg'UbX'i h]`]nYg hcc`g``]\_Y 'h\ Y '7 f]a Y '8 Ug\ VcUfX'hc'dfYgYbh'Wca dfY\Ybg]j Y 'Wf]a Y ghUh]gh]Wg'Uh'`cWU```Yj Y`g"'H\ ]g'XUhUVUgY ']bWi XYg'Wf]a Y 'XUhU'Zfca h\ Y 'A Ufm`UbX'I b]Zcfa '7 f]a Y 'F Ydcfh]b[ 'fl 7 F Ł'Dfc[ fUa ž'Wcj Yf]b[ ]bW]XYbhg'fYdcfhYX'Zfca '%-+) 'hc'&\$&' "'Gi W\ XYhU]`YX'fYdcfh]b[ ']g YgdYW]U``m']a dcfhUbh'Zcf'XYj Y`cd]b[ 'Yj ]XYbWY!VUgYX'dc`]W]Yg'hc a ]h][ UhY'j ]c`YbW'"

## 5'7U``Zcf'7ca a i b]hm'9b[U[Ya Ybh

K \]'Y'h\Y']bj Ygh][ Uh]cb']bhc'K ]'gcb g'a i fXYf'i bZc'Xgž'dc']WY'UfY i f[ ]b[ 'h\Y'Wca a i b]hm'hc'[ Yh']bj c'j YX"'H\Ym'UfY'Ug\_]b[ 'UbmcbY k ]h\']bZcfa Uh]cb'fY`UhYX'hc'h\Y']bW]XYbh'hc'ghYd'Zcfk UfX"'H]dg'WUb VY'dfcj ]XYX'X]fYWh'm'hc'Df]bWY'; Ycf[ Y g'dc']WY'Uh'' \$%!) %\*!&) %&žh\fci [ \'7f]a Y'Gc'j Yfg'cb`]bYž'cf'j ]U'h\Y' D' 'H]dg 'a cV]'Y'Udd" H\]g'\_]bX'cZ'Wca a i b]hm'Yb[ U[ Ya Ybh']g'YggYbh]U'hc'Wca VUh Wf]a Y'YZZYWh]j Y`m' 'Yj Yfm'd]YWY'cZ']bZcfa Uh]cb'WUb'a U\_Y'U

5g'k Y'fYZYWh'cb'h\]g'hfU[]WYj Ybhž']hg']a dYfUh]j Y'hc'fYa Ya VYfh\Uh'VY\]bX'h\Y'ghUh]gh]Wgž'h\YfY'UfY'ZUa ]`]Yg'UbX'Zf]YbXg dfcZci bX`m'UZZYWhYX'Vmj ]c`YbWY''GhUm]b[']bZcfa YX'UbX'Yb[U[YX]g'ci f'VYgh'XYZYbgY'U[U]bgh'h\Y'f]g]b['h]XY'cZ'Wf]a Y'h\Uh Wcbh]bi Yg'hc']a dUWh'ci f'bY][\Vcf\ccXg''5g': `cf]X]Ubgž'k Y'g\ci `XhU\_Y'h\Y']b]h]Uh]j Y'hc'WfYUhY'UgUZYf'Ybj ]fcba Ybh'Zcf'U``ž'Ybgi f]b[gi WX']bW]XYbhg'VYWca Y'`Ygg'Wca a cb']b'ci f'Wca a i b]hm'

8 Y hU]`g	
Cfh	&,\$\$'KccX' <c``ck'hyffuwyž':cfh< th=""></c``ck'hyffuwyž':cfh<>
	K Ug\]b[hcbžA8žIG5
EiY``Yb	• dUhWX "Wca
	• [cWdd"a Ufm`UbX"[cj

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