B]bY'5`UWXiU'FYg]XYbhg'=bjYgh][UhYX'Zcf =`Y[U`'Jch]b[.:6=5`YfhYX°

5`UW\i U'7ci bhm']bj Ygh][UhYg'b]bY']bX]j]Xi U`g'Zcf'dchYbh]U`]``Y[U`'j ch]b[']b'&\$&) ž']bj c`j]b['ZY`cbm'Wcbj]Wh]cbg'UbX i bdU]X'Z]bYg"



 $\label{eq:state-$

CihcZY`YjYb`]bX]j]XiU`g`]bj Ygh][UhYXžb]bY`k YfY`WcbZ]fa YX`hc

I b X Y f g h U b X] b ['J c h Y f '9'][] V] `] h m

6i h'k \Uh'YI UWh'm'UfY'h\Y'fi `Yg'Ufci bX'j ch]b['Y`][]V]`]hmž dUfh]W `Uf'm'Zcf'h\cgY'k]h\ 'ZY`cbm'fYWcfXg3: `cf]XU'`Uk 'ghUhYg'h\Uh]bX]j]Xi U`g'a Um'fY[U]b'h\Y]f'j ch]b['f][\hg'i bXYf'WWfhU]b WcbX]h]cbgž'Ug'\][\`][\hYX'Vm'h\Y'8 YdUfha Ybh'cZ'GhUhY'': cf h\cgY'Wcbj]WhYX'cZ'ZY`cb]Yg'ch\Yf'h\Ub'a i fXYf'cf'gYI i U` cZZYbgYgž'cbY'WUb'fY[]ghYf'hc'j chY'cb`m'UZhYf'Wca d`Yh]b['U``'hYfa g cZ'h\Y]f'gYbhYbW'''H\]g']bWi XYg'gYfj]b['df]gcb'h]a Yž'Wca d`Yh]b[dUfc`Y'cf'dfcVUh]cbž'UbX'dUm]b['U``'fY`UhYX'Z]bYgž'ZYYgž'UbX fYgh]hi h]cb''' \dir ZUWhž'a Ubm'k \c'gYY_'hc'fYghcfY'h\Y]f'f][\hg'cZhYb ZUWY'Wca d`YI 'Z]bUbW]U`'UbX'`Y[U``\i fX`Ygž'a U_]b[']h']bWfYUg]b[`m Wf]h]WU`'Zcf'h\Ya 'hc'i bXYfghUbX'h\Y]f'ghUbX]b['k]h\'h\Y'Wci fh gmghYa "

Gca Y ']bX]j]Xi U`gʻa UmʻVYʻWUi [\h`]bʻUʻk YVʻcZʻWcbZi g]cbʻfY[UfX]b[h\Y]fʻZ]bUbW]U`ʻcV`][Uh]cbg"·H\Yʻ Z]fghʻXc``Ufʻdc`]Wm 'a YUbgʻYj Ybʻ]Z UʻdYfgcbʻ\UgʻdU]X 'dUfhʻcZʻUʻZ]bYžʻh\YmʻUfYʻgh]```Wcbg]XYfYX]bY`][]V`Yʻi b`Yggʻh\Ymj YʻgUh]gZ]YXʻh\YʻYbh]fYʻUa ci bhʻcfXYfYX" H\YfY gʻU`gcʻh\Yʻdcgg]V]`]hmʻcZʻWcbj Yfh]b[ʻZ]bUbW]U``cV`][Uh]cbgʻhc Wca a i b]hmʻgYfj]WYž'k \]WXʻWUbʻWca d`]WUhYʻa UhhYfgʻZi fh\Yf"

@cWU`7UqYq'IbXYf'FYj]Yk

 $5a \ cb[\ 'h\ Y']bX]j\]Xi\ U\ 'g']XYbh]Z]YX']b\ '5\ `UWXi\ U\ 'z'gYj\ YfU\ 'bchUV\ 'YWgYg']\ 'i ghfUhY'h\ Y'Wca d `YI]h]Yg'cZ'h\]g']ggi Y'': cf']bghUbW' \ z' \time\ bK'' F]WX\ UfX'\ <math>f'''$ ck\ Yg'Z]bYg'Zfca 'Zci\ f'ZY\ `cbm'WUgYg'UbX'\ Ug\ dUfh]W]dUhYX']b'Zci\ f'Y\ YWh]cbg'g]bW'\ &\$&\$z'k\]'Y'J]bW'\ '6''\ 8]I\ cb\ \fi'' g'\ WUgY']g'dUfh]W'\ `Uf\ 'mi\ b]ei\ Yz'Ug'\ Y']g'\]b\ _YX'\ hc'\ U'ZYXYfU\ `

Wf]a]bU``WUgY`UbX`fYdcfhYX`m`ck Yg`` %\$\$`k]h\`bc`fYWcfX`cZdUma Ybh"'=b`hchU`žYUW\`WUgY`dfYgYbhg`U`i b]ei Y``UmYf`cZWcad`Yl]hmž`k]h\`]bX]j]XiU`g`\Uj]b[`jUfm]b[`XY[fYYg`cZ`Z]bUbW]U`cV`][Uh]cbg`ghYaa]b[`Zfca`h\Y]f`Wcbj]Wh]cbg"

 $\label{thm:continuous} F Y g h c f U h j c h j$

I`h]a UhY`mžk \Uh`fYa U]bg'hc`VY`gYYb`]g'k \Yh\Yf`W\Uf[Yg'k]```VY
Z]`YX`U[U]bgh'h\Y`b]bY`gi V`YWhg`fYZYffYX`Vm`6Ufhcbž'UbX`\ck 'h\]g
k]``]a dUWh'h\Y`cb[c]b[`Wcbj YfgUh]cb`Ufci bX`j ch]b[`f][\hg`]b
:`cf]XU"'H\Y`]bhf]WUhY`VU`UbWY`VYhk YYb``Uk 'YbZcfWYa Ybh'UbX
Wjj]WdUfh]WjdUh]cb`]g`]bXYYX`U`hci [\`f]XYž'Vi h'h\YfY g'bc`Xci Vh
k\Uh g'Uh`ghU_Y`]g`bch'a YfY`m`U`a UhhYf`cZ``Y[U`]hmž'Vi h'U'j]hU`
YI dfYgg]cb`cZ`XYa cWfUWh"

8 YhU]`g	
Cfh	5`UWXiU'7cibhmž': `cf]XUž'IG5
EiY``Yb	• kkk"U`UWXiUWcibhmhcXUm"Wca
	• Xcg"Z`"[cj
	• k k k "db^"Wca

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