6i X[YhK cYg7cbh]bi Y Zcf:`cf]XU GWXcc`g8Ygd]hY =bWfYUgYX:ibX]b[

7]hfi gʻ7ci bhm'ZUWYgʻUʻ`'") `a]``]cb`Vi X[Yh'XYZ]W]hž dfca dh]b[ʻUʻ\]f]b[ʻdUi gYʻUa]Xʻcb[c]b[ʻYXi WUh]cbʻZi bX]b[WXU``Yb[Yg"



7]hfi gʻ7ci bhmž: `cf]XU'! 8Ygd]hY'U'dfcdcgYX' &- ") 'V]``]cb'?!%& YXi WUh]cb'Vi X[Yh_U'\YZhm` - () 'a]``]cb']bWfYUgY'Zfca 'h\Y dfYj]ci gʻmYUf : `cf]XU gʻgW\cc``X]ghf]Whg'Z]bX'h\Ya gY`j Yg [fUdd`]b['k]h\'gYf]ci gʻVi X[Yh'W\U``Yb[Yg"'BYI h'GhYdg'6`c[fYdcfhg'h\Uh``cWJ``X]ghf]Whgž'XYgd]hY'h\Y'Ui [a YbhYX'Zi bXgž'UfY'gh]`` ZUW]b['g][b]Z]WUbh'Z]bUbW]U``\i fX`Ygž'U'g]hi Uh]cb'h\Uh`fU]gYg ei Ygh]cbg'UVci h`\ck 'gi W\']bWfYUgYg'hfUbg`UhY'hc'VYhhYf YXi WUh]cbU``ci hWca Yg"

H\Y'6fckUfX'7cibhm`gW\cc``VcUfX`]g`gYh`hc`aYYh`cb`≯`m`&&`hc X]gWigg`h\Y`fYUWh]jUh]cb`cZ`WUggfcca`WUaYfUg`gdYW]Z]WU``m`Zcf gdYW]U`!bYYXg`ghiXYbhgž`U`aYUgifY`h\Uh`kUg`ghU``YX``Ugh`mYUf" ≠0]h]U``m`]bghU``YX`]b`&\$&%`Ug`dUfh`cZ`U`h\fYY!mYUf`dfc[fUaž`h\YgY

=b`U`bcX`hc`a cXYfb`hYWXbc`c[mž'GUbhU`FcgU`gWXcc``Ya d`cmYYg

]b]h]UhY`U`\]f]b[`dUi gY"

H\Y'g]hi Uh]cb']g'Zi fh\Yf'Wca d`]WUhYX'Uh'h\Y'`cWU``Yj Y``k]h\ j Uf]ci g']b]h]Uh]j Yg'hc'W' fV'XYZ]W]hg"': cf'YI Ua d`Yž'h\Y'DU`a '6YUW\ X]ghf]Wh'cZZ]W]U`g'a UbU[YX'hc'fYXi WY'h\Y]f'Vi X[Yh'g\cfhZU``Zfca ` (%'a]``]cb'hc''1 gh'cj Yf'` - %* ž\$\$\$ž'h\Ub_g'df]a Uf]`m'hc'Ub Ubh]W]dUhYX'` %, 'a]``]cb'Vi X[Yh']bWfYUgY']b'h\Y'i dWca]b['WmWY" A YUbk \]`Yž'7]hfi g'7ci bhm`]g'ZUW]b[']hg'ck b'ghfi [[`Yg'k]h\'U dfc'YWhYX'` '') 'a]``]cb'XYZ]W]hž'dfca dh]b['h\Y'gW\cc``VcUfX'hc

$@cWU^{5}Wh]cbg'FYZ^{Wh'K}]XYf^7 U^{Yb}[Yg$

<]ghcf]WU``Y[U``VUhh`Ygž``]_Y`h\Y'%-+, 'Gi dfYa Y'7ci fh`WUgY'GUb 5bhcb]c'=bXYdYbXYbh'GW\cc``8]ghf]Wh'j "'FcXf][i Ynž'gdch`][\h'h\Y cb[c]b['Z][\h'Zcf'Yei]hUV`Y'YXi WUh]cbU``UWWYgg"'5`h\ci [\ FcXf][i Yn'X]X'bch'YbX'h\Y'XYVUhYž']h'gdi ffYX'X]gW'gg]cbg'UVci h \ck 'k Y'Z]bUbWY'ci f'gW\cc`g'UbX'i`h]a UhY`mž'\ck 'h\Uh'UZZYWhg ghi XYbh'gi WWYgg"'FYZcfa g']bhYbXYX'hc'UXXfYgg'h\YgY'X]gdUf]h]Yg k YfY'a UXY']b'h\Y'+\$gž', \$gž'UbX'-\$gž'Vi h'h\Y'; fYUh'FYWYgg]cb cZ'&\$\$+!&\$\$- 'gYj YfY`m']a dUWhYX'gW\cc``Zi bX]b[`z``YUX]b[`'hc Wf]dd`]b[`Wi hg'h\Uh'\Uj Y``YZh'U``Ugh]b[`'a Uf_"

fYgci fWYg"

=hg`YggYbh]U``hc`i bXYfghUbX`h\Y`WcbhYI h`cZ`h\YgY`Vi X[YhUfm \YUXUWXYg"`5VWcfX]b[`hc`5a Yf]WUb`I b]j Yfg]hmg`GWXcc``cZ 9Xi WUh]cbž`h\Y`W`ffYbh`ghUhY`cZ`gWXcc``Zi bX]b[`]b`h\Y`I "G"`cZhYb WfYUhYg`U`X]gdUf]hm kYU`h\]Yf`UfYUgž`Vi cmYX`Vm`\][\Yf`dfcdYfhm hUI `fYj Ybi Ygž`hmd]WU``m`gYY`VYhhYf`Zi bX]b["`Gi WX`X]ZZYfYbWYg]bj Uf]UV`m`]bZ`i YbWY`ghi XYbh`UWX]Yj Ya Ybh``Yj Y`gž`Ug`gWXcc`g cdYfUh]b[`cb`h][\hYf`Vi X[Yhg`cZhYb`ghfi [[`Y`hc`dfcj]XY`UXYei UhY

5⁷cgYf[@]cc_^{Uh}:ibX]b[⁸]gdUf]h]Yg

 $\mathsf{W}_{\mathsf{C}}\mathsf{X}\mathsf{Y}^{\mathsf{T}}\mathsf{C}\mathsf{Z}^{\mathsf{T}}\mathsf{W}_{\mathsf{C}}\mathsf{b}\mathsf{X}\mathsf{i}^{\mathsf{T}}\mathsf{W}^{\mathsf{T}}\mathsf{j}\mathsf{b}^{\mathsf{T}}\mathsf{U}^{\mathsf{T}}\mathsf{X}\mathsf{Y}\mathsf{W}\mathsf{U}\mathsf{X}\mathsf{Y}^{\mathsf{T}}$

WUa YfUg'Wci `X'Wcgh'Uh``YUgh'` &'a]``]cb'hc'fY]bghUhY'k]h\'Ub UXX]h]cbU``%ž\$\$\$'i b]hg"'A YUbk \]`Yž'h\Y'Jc`i g]U'gW\cc``VcUfX']g dfYdUf]b['hc'j chY'bYI h'a cbh\'cb'h\Y'Z]fgh'i dXUhY'hc'h\Y'ghi XYbh UfY`\UfbYqq]b[`5=hcc`qZcf`fYU`!h]a Y`hfUbq`Uh]cb`qYfj]WYqž WUhYf]b[hc bcb!9b[]g\ gdYU_]b[gh XYbhg UbX dUfYbhg" H\]g]bbcj Uh]j Y UddfcUWX a][\h'\Y`d Vf]X[Y Wca a i b]WUh]cb [Udgž Vi h h\Y`VfcUXYf`ZibX]b[`]qqiYq`Wcbh]biY`hc`WUqh`U`q\UXck`cjYf`qiW.]b]h]Uh]j Yg"

9jc`j]b[9XiWUh]cbU`@UbXgWUdYg

H\Y'I b]j Yfg]hm'cZ': `cf]XU'hfi ghYYg'UfY'X]gW gg]b['U'dfcdcgYX'%\$i hi]h]cb`\]_Y`Zcf`cih!cZ!ghUhY`ghiXYbhqž`k \]W\`Wci`X`WfYUhY UXX]h]cbU``VUff]Yfq`Zcf`ZUa_]`]Yq`qYY_]b[``\][\Yf`YXi_WUh]cb"`Cb`h\Y ch\Yf`\UbXž`h\Y`8]cWYqY`cZ`Gh"`DYhYfqVif[`]q`aU_]b[`ghf]XYq`]b YUf`m'YXiWUh]cbž'qYh'hc'cdYb'h\Y'AUhYf'8Y]'dfY?!, 'gW\cc`']b

&\$&+ž'Ubh]W]dUh]b['UVci h'' \$\$'ghi XYbhg"

=b`A]Ua]ž'Wihm'Wca a]gg]cbYfg`\Uj Y'XY`UmYX'U'XYWig]cb'UVci h hfUbqZYff]b[h\Y`C`ma d]U`H\YUhYfg`ck bYfg\]d hc`U`W\UfhYf gW\cc`žcdh]b[']bghYUX'Zcf'di V`]W\YUf]b[g'VYZcfY'a U_]b['Ubm Z|bU`XYhYfa]bUh]cb`cb`\$`m`&("`5``h\YgY`XYj Y`cda Ybhg`g][bU``U `UbXgWUdY`]b`ZiIžk\YfY`YXiWUh]cbU``UWWYgg]V]`]hmUbX`eiU`]hm ZUWY`gWfi h]bm`UbX`WXU``Yb[Y"

5g'X]gW gg]cbg'UVci h'Vi X[Yh'UXYei UWm'Wcbh]bi Yž']h'VYWca Yg]bWfYUg]b[`m'WYUf'h\Uh'dc`]Wn'WXUb[Y']g'j]hU`'Zcf'gUZY[iUfX]b[UbX'Yb\UbWjb['gW\cc`'Z bX]b[žYbqi f]b['Yj Yfm'qhi XYbh'fYW]j Yq h\Y'eiU`]hm'YXiWUh]cb'h\YmXYgYfjY"'=b'``][\h'cZ'h\Y'Wcad`YI]h]Yg gi ffci bX]b['gW\cc``Zi bX]b[ž'dYf\Udg']hg'h]a Y 'hc'Ug_'ci fgY`j Yg. 5fY'k Y'Xc]b['Ybci[\'hc'YbgifY'Yei]hm']b'YXi WUh]cb3

8 Y hU]`g	
Cfh	7]hfig [·] 7cibhmž [·] :`cf]XU
EiY``Yb	• bYI hghYdgV`c["cf[
	• gcYcb`]bY"Ua Yf]WUb"YXi

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