




7 ci fgY'8YHJ]`g

7 fYX]hDc]bfg`\*`

Gi a a UfmicZh\Y'7 ci fgY

H\Y'Wci fgY'dfcj ]XYg'i ddYf']bHfa YX]UH'Yj Y'h ]hcb]b'>UdUbYgY'Ub[ i U[ Y'gh Xm'G]a ]Uf'hc'h\Y'Wci fgY  
fXj UbVWX'>UdUbYgY'5fz'U'dfYfYei ]g]h'Zc'f'h]g'Wci fgYz'mci 'Wcb]bi Y'hc'XYj Y'cd'mci f']bHfW'h fU'  
Wca a i b]W]hcb'g\_]`g]b'Ub'UXi 'h>UdUbYgY'gdYU\_]b[ 'Ybj ]fcb Ybhk \]Y'YUfb]b[ 'a cfY'UVci h>UdUb'UbX  
h\Y'>UdUbYgY'"Mci 'U'gc'YUfb'bYk 'h>UdUbYgY'gfhi W'i fYgZ'YI dfYgg]cbgZ'UbX'j cWUVi 'Ufm'f'f'YUW'hc'd]Wz'mci  
'YUfb'h\Y'W ffYbhgcW]c!W'h fU']ggi Yg']b'>UdUb'"f'j cWUVi 'Ufm'YUfb]b[ z'mci 'YUfb'&\$\$'\_Ub'f' H\YmUFY  
hU[ \h'h'fci [ \Z'ci f'gcW]U'f'W'h fU'hc'd]Wg"

7 ci fgY'@YUfb]b[ 'Ci hWca Yg

% 8Ya cbgfUH'Wca a i b]W]hcb'UbX'W'h fU'g\_]`g]b']bHfUW]cb'k ]h'>UdUbYgY'gdYU\_Yfg"  
&" 7ca dUFY'UbX'Yj U'i UH'U'hc'd]WgY'YWX'VYh'YYb'>UdUb'UbX'5i'gfU']U'UbX'YI d'U]b']h]b'>UdUbYgY"  
' " I gY'\_bck YX[Y'cZ>UdUbYgY'Ub[ i U[ Y'UbX'W'h fY']b'U'[ ] Yb'WcbhY'f'  
( " 7c'UVcfUH'k ]h'd'Yfg"

HYUW]b[ 'GhfUH[ ]Yg'

@YW'i fYg'XY'j] Yf'gcW]U'UbX'W'h fU']ggi Yg'fY'UH'X'hc'h\Y'hc'd]WcZ'h\Y'k YY\_"BYk'gfhi W'i fYg# fUa a Ufg'UFY  
U'gc'YI d'U]bYX'"Mci 'dUfh]W]dUH' ]b'dfUW]W]g'cZbYk 'YI dfYgg]cbgZ'j cWUVi 'Uf]YgZ'UbX'? Ub'f'UbX']bHfUW]k ]h'  
Z'ck'gh'XYb]h'Uh'h\Y'YW'i fYg'"@YW'i fYg'UFY'XY'j] YfYX'i g]b[ '>UdUbYgY'hc'Ugg]gh'mci ' ]b'XYj Y'cd]b[ 'h\Y]f'  
' ]gh' ]b[ 'UV']h]Yg'UbX'VYWca ]b[ 'ZJa ]]Uf'k ]h'bUH] Y'>UdUbYgY'gdYU\_Yfgf]U\_"H\Y'WcbhYbhk \]W' mci 'UFY  
bchUV'Y'hc'Wca dfY\YbX']b'>UdUbYgY'a UmVY'YI d'U]bYX']b'9b[ ' ]g\"

Hi hc'f]U'g'dfcj ]XY'mci 'k ]h'cddcfh b]h]Yg'hc'dfUW]W] ]bHfUW]cbz'fYUX]b[ z'UbX'k f]h]b[ ' ]b'>UdUbYgY'Z'ck ]b[  
h\Y']bZc'fa Uh]cb ]b'hcXi W'X'Xi f]b[ 'YW'i fYg'UbX'dfcj ]XYX']b'h\Y'hYI h'cc\_"Mci fi'XYj Y'cd'i bXYfghUbX]b[  
UVci h'h\Y'>UdUbYgY'dYcd'Yz'W'h fYz'UbX'gcW]Ym' H\]g']g'a UXY'h'fci [ \X]gW]gg]cbg'cb'U'hc'd]WcZ'h\Y'  
Wci fgY'"9a d\Ug]g]g'U'gc'd'UW'X'cb'XYj Y'cd]b[ ' ]bHfUW]cb'g\_]`g]b'Ub'UXi 'h>UdUbYgY'gdYU\_]b[  
Ybj ]fcb Ybh'5'a YX]i a 'cZ'Ub[ i U[ Y']b'h'hc'f]U'g]g'>UdUbYgY']b'cfXYf'hc'XYj Y'cd'mci f'cfU'UbX'Ui fU'  
g\_]`g'"Mci 'UFY'gfcb[ 'mYbWci fU[ YX'hc'i gY'>UdUbYgY'Xi f]b[ 'WUggYg"

# 5ggYgga Ybh

## 5ggYgga YbhHUg\_g`

5ggYgga YbhHUg_	K Y][ \h	8i Y`8UHŸ	Gh XYbh@YUfb]b[ Ci hWta Yg`5ggYggYX
: ]bU`YI Ua ]bUH]cb`	( \$i	: cfa U`9I Ua `DYf]cX	%ž&ž
GdYU_]b[ `HYgh	&\$i	Bch5dd`]WUV`Y	%ž ž(
Dfc`YWh	( \$i	Bch5dd`]WUV`Y	%ž

## 5ggYgga Ybh8YHU]`g

5ggYgga Ybh% : ]bU`YI Ua ]bUH]cb

GHUfhXUHŸ. `Bch5dd`]WUV`Y

@Yb[ h. `&\f

8YHU]`g.

&\ci f`YI Ua `]b`h\Y`Zcfa U`YI Ua ]bUH]cb`dYf]cX" `H\]g`]g`h\Y`Z]bU`UggYgga YbhZcf`UHŸbXUbWŸ`di`fdcgYg"  
Bi`a`Yf]WŸ`a`Uf`" `&X] ]Xi`U`ZYXVUW`k`]`VY`[ ]j`Yb`i`dcb`fYei`YgŸ`

5XX]h]cbU`XYHU]`g.

: ]bU`YI Ua ]bUH]cb`]g`\Y`X`Xi`f]b[ `Z]bU`YI Ua ]bUH]cb`dYf]cX"

Hi`fb]h]b`gYH]b[ . `H\]g`]g`bchU`Hi`fb]h]b`Ugg][`ba`Ybh

5ggYgga Ybh&. `GdYU\_]b[ `HYgh

GHUfhXUHŸ. `Bch5dd`]WUV`Y

8YHU]`g.

9UW\`gh`XYbhk`]`dYfZcfa`U`fc`Y`d`Umk`]h`Ubch\Yf`gh`XYbhZ`WU")`!\*`a`]bi`hYg`dYf`dU]f`K`f]h]b`ZYXVUW`

5XX]h]cbU`XYHU]`g.

GdYU\_]b[ `hYgh]g`\Y`X`Xi`f]b[ `k`YY`\_-`h`hcf]U`"GYY`A`ccX`Y`Zcf`XYHU]`g"

Hi`fb]h]b`gYH]b[ . `H\]g`]g`bchU`Hi`fb]h]b`Ugg][`ba`Ybh

5ggYgga Ybh' . `Dfc`YWh

GHUfhXUHŸ. `Bch5dd`]WUV`Y

8YHJ]g.

H\Y`di fdcgY`cZk]g`UggYgga Ybh]g`hc`YUfb`>UdUbYgY`W`h`fYz`Ub[ i U[ Yz`UbX`]bHfW`h`fU`Wca a i b]W]h]cb  
g\_]`g`VmidUfh]WdUhb[ `]b`U`j`Uf]YhmicZUW]j`]h]YgZ`Wcbg]gh]b[ `cZWU""`\$`a`]bg#`YY`\_`cb`Uj`YfU[ Y``H\Y`UW]j`]h]Yg  
]bWi`XY`Ub`]bX]j`]Xi`U`#`fci`d`d`fYgYbH]h]cb`f(``a`]bgLz`d`Um]b[ `U`fc`Y`Ug`h`hc`f]U``YUXYfz`UbX`]bHfUW]h]b[ `k`]h  
>UdUbYgY`dYcd`Y#gdYU`Yfg`UhUb`Yj`Ybh`Y`X`Uhi`B`G`K`" `G`h`XYbtg`k`]`h`Yb`fYZYVh]UbX`k`f]h`U`fYdcfh]b  
>UdUbYgY`f(`\$\$!)`)\$`W`UfUW]Yfg#`Ydcfh]`cb`h`Y]f`YI`dYf]YbVW]g" `K`f]h]b`ZYXVUW`\_`

5XX]h]cbU`XYHJ]g.

GYY`A`ccXY`Zcf`XYHJ]g"

Hi`fb]h]b`gYh]b[ .`H\]g`]g`bchU`Hi`fb]h]b`Ugg][`ba`Ybh



F Ygci fWg

DfYgW]VYX F Ygci fWg

Gi Va ]gg]cb`cZ5ggYgga YbhiHUg\_g

Hi fb]h]b`Gi Va ]gg]cb

≠mci`YbWci bHYf`U`dfcV`Ya`k` \Yb`UH`Ya` dh]b[`hc`gi`Va`]hmc`i`f`Ugg][`ba`Ybhi`h`fci`[`\`Hi`fb]h]b`z`d`Y`Ug`Y`  
HY`Yd`cb`Y`9I`HY`fb`U`Gi`ddc`fh`cb`-`,`,)``''`%`cf`Ya`U]`h`Ya`i`cb`YI`HY`fb`U`HY`hgi`ddc`fh`4`i`bgk`"YXi`"Ui`""`Gi`ddc`fh`  
`l`ci`fg`UfY`,`.\$`\$Ua`-`-%`\$.\$`\$da`i`cb`k`YY`\_X`Umg`U`b`X`-`.\$`\$Ua`-`-`).`\$`\$da`i`cb`k`YY`\_Y`b`X`g`f`l`\*)`X`Umg`U`m`Y`U`f`l`"≠mci`  
UfY`i`b`UV`Y`hc`gi`Va`]hmc`i`f`Ugg][`ba`Ybhi`Xi`Y`hc`U`Z`Ji`h`k`]h`Hi`fb]h]b`mci`i`a`Um`U`dd`m`Z`c`f`U`b`YI`HY`bg]cb`z`Vi`hmc`i`  
a`i`gh`f`Y`h]b`mci`f`h]W`Y`hbi`a`VY`f`Z`ca`9I`HY`fb`U`Gi`ddc`fh`f`U`cb[`k`]h`U`b`m`c`h`Y`f`f`Y`Y`U`b`h`X`c`W`a`Y`b`h`g`k`hc`  
]b`Wi`XY`U`g`Y`j`]X`Y`b`V`W`hc`gi`ddc`fh`mci`f`YI`HY`bg]cb`U`dd`]W`h]cb`"≠mci`Ya`U]`9I`HY`fb`U`Gi`ddc`fh`mci`k`]`  
Ui`hc`a`U`h]W`U`m`f`Y`W`]j`Y`U`h]W`Y`hbi`a`VY`f`z`Vi`h]Z`mci`HY`Yd`cb`Y`mci`k`]`b`Y`Y`X`hc`gd`Y`W`Z`W`U`m`U`g`\_`Z`c`f`cb`Y`"  
Hi`fb]h]b`U`gc`d`fc`j`]X`Y`g`i`d`X`U`h`Y`g`cb`h`Y`]f`g`m`g`h`Ya`i`g`h`U`h`g`cb`H`k`]h`Y`f`"

;`Yb`Y`f`U`m`z`U`gg`Y`gga`Yb`hi`U`g`\_`g`a`i`gh`V`Y`gi`Va`]h`Y`X`Y`Y`W`f`cb]W`U`m`j`]U`Y`]h`Y`f`Hi`fb]h]b`cf`U`A`cc`X`Y`  
U`gg][`ba`Yb`h`i`h`]b`g`h`U`b`V`W`g`k` \Y`f`Y`h`l`g`]g`b`c`h`d`c`g`g]V`Y`z`]h`k`]`V`Y`g`h`U`h`X`cb`mci`f`W`ci`fg`Y`g`A`cc`X`Y`g`]h`k`]h`  
U`h`Y`fb`U`h]`Y`gi`Va`]gg]cb`X`Y`h]g`"

:`cf`]b`Z`c`fa`U`h]cb`cb`l`ck`hc`gi`Va`]h`U`gg][`ba`Yb`h]g`cb`]b`Y`j`]U`A`cc`X`Y`.\`h`d`g`#`g`h`X`Y`b`h`i`bgk`"YXi`"Ui`#`ck`!  
gi`Va`]h`U`gg][`ba`Yb`h`a`cc`X`Y`"



## 5 WUXYa ]W< cbYgmiUbX`D`U[ ]Uf]ga

D`U[ ]Uf]ga `]g`i`g]b[ `h`Y`k`c`f`X`g`c`f`]X`Y`U`g`c`Z`c`h`Y`f`g`i`U`b`X`d`f`Y`g`Y`b`h]b[ `h`Y`a` `U`g`m`c`i`f`c`k`b``#W]b`h]U`\_`Y`a`U`b`m`  
Z`c`f`a`g`Z`Z`c`a` `X`Y`]V`Y`f`U`h`Y` `W`X`Y`U`h]b[ `h`c` `U`W`W`Y`X`Y`b`h]U`m`i`W`c`d`m]b[ `Z`c`a` `U`g`c`i`f`W`k`]h`c`i`h`U`W`\_`b`c`k` `Y`X[ `Y`a` `Y`b`h`

I`B`G`K` `[`f`c`i`d`g`d`U[ ]Uf]ga `]b`h`c` `h`Y` `Z`c` `c`k`]b[ `W`U`h`Y`[`c`f]Y`g.

- i bXYfghUbx'mci f'f][ \hg'UbX'fYgdcbg]V]h]Yg'Ug'U'gh XYbhUhl BGK
- VY'Uk UfY'cZd'U[ ]Uf]ga ž'Wcdmf][ \hž' BGK 'Gh XYbh7cXY'cZ7cbXi W'Ubx'5Ww'dhUV'Y'I gY'cZ I BGK '⇒H'F Ygci fW'g'Dc`]Wm
- VY'Uk UfY'cZh'Y'ghUbxUfXg'cZVY\Uj ]ci f'YI dYW'X'cZYj Yfmcby`]b'h'Y'I BGK 'Wca a i b]m
- `cWJh'gYfj ]W'g'UbX'j]bZcfa Uh]cb'UVci hl BGK 'UbX'I BGK '@]VfUfm

Gca Y'cZh'YgY'UfYUg'k ]`VY'ZJa ]]Uf'hc'mci ž'ch'Yfg'k ]`VY'byk " "; U]b]b[ 'U'gc`]X'i bXYfghUbx]b[ 'cZU`h'Y fY'UH'X'UgdYW'g'cZ9@G9'k ]`Y'd'mci 'a U\_Y'h'Y'a cghcZmci f'gh X]Yg'Uhl BGK ""

[\hhd.##ji V'YW'i \]XYg" \]VfUfm'i bgk "YXi "Ui #' \]gY#JVci h' \]gY](#)

5 WUXYa ]W=Zcfa Uh]cb