

## 8 ]Y `VY`]YVhYghYb `GdfUW\ Ybž`X]Y `Ui Z`XYf [ UbnYb `K Y`h`[ Y`Yfbh`k YfXYb

6Y]`5hUg/ Ua d/Ua d/6cchg` \UVYb`k ]f`8i c`]b[ c`]b`ZUgh`U`Yb  
i bgYfYb`GdfUW.VY]hfÅ[ Yb`Yfk Å\ bhž`gY]Yb`Yg`9l dYfhYbh]ddg  
ni a `9f`YfbYb`a Y`fYfYf`GdfUW\ Yb`cXYf`Hcc`g`ZØf`ZUi `Y  
@YfbYf`"K ]f`g]bX`[ fc» Y` : Ubg`XYf`5dd`i bX`k UfYb`ZUgn]b]Yfh  
j cb`XYb`Øb[ ghYb`9f`\_Ybbhb]ggYb`ni `XYb`VY`]YVhYghYb  
GdfUW\ Ybž`X]Y`k Y`hk Y]h`[ Y`Yfbh`k YfXYb`"8 Ug`HYUa ` \Uh]a  
@Ui ZY`j cb`XfY]`A cbUhYb`8 UhYb`Ui g`U`Yb`@AbXYfb`XYf`K Y`h  
[ Yg]W\hYhž`i a `X]Y`VY`]YVhYghYb`GdfUW\ Yb`ni `]XYbh]Zn]YfYbž  
X]Y`j cb`gY]bYb`%&\$`A ]``cbYb`6Ybi hnYfb`[ Y`Yfbh`k YfXYb`"  
8 ]Y`9f[ YVb]ggY`g]bX`ZUgn]b]YfYbX`"6Yj cf`k ]f`i bg`X]Y  
]bhYfYggUbhYghYb`9f[ YVb]ggY`UbgY`Ybž`gc`hYb`k ]f  
Yfk Å\ bYbž`XUgg`8i c`]b[ c`XYfnY]h`%-`GdfUW\ Yb`UbV]YhYhž  
j cb`XYbYb`b]W\h`U`Y`]b`/ Ua d^Y`d/

6Y]`5hUg/ `6cchg` \UVYb`k ]f`8i c`]b[ c`]b`ZUgh`U`Yb`i bgYfYb  
GdfUW.VY]hfÅ[ Yb`Yfk Å\ bhž`gY]Yb`Yg`9l dYfhYbh]ddg`ni a `9f`YfbYb  
a Y`fYfYf`GdfUW\ Yb`cXYf`Hcc`g`ZØf`ZUi `Y`@YfbYf`"K ]f`g]bX`[ fc» Y  
: Ubg`XYf`5dd`i bX`k UfYb`ZUgn]b]Yfhj cb`XYb`Øb[ ghYb  
9f`\_Ybbhb]ggYb`ni `XYb`VY`]YVhYghYb`GdfUW\ Ybž`X]Y`k Y`hk Y]h  
[ Y`Yfbh`k YfXYb`"

8 Ug`HYUa ` \Uh]a `@Ui ZY`j cb`XfY]`A cbUhYb`8 UhYb`Ui g`U`Yb  
@AbXYfb`XYf`K Y`h`[ Yg]W\hYhž`i a `X]Y`VY`]YVhYghYb`GdfUW\ Yb`ni  
]XYbh]Zn]YfYbž`X]Y`j cb`gY]bYb`%&\$`A ]``cbYb`6Ybi hnYfb`[ Y`Yfbh`  
k YfXYb`"8 ]Y`9f[ YVb]ggY`g]bX`ZUgn]b]YfYbX`"

6Yj cf`k ]f`i bg`X]Y`]bhYfYggUbhYghYb`9f[ YVb]ggY`UbgY`Ybž`gc`hYb`k  
k ]f`Yfk Å\ bYbž`XUgg`8i c`]b[ c`XYfnY]h`%-`GdfUW\ Yb`UbV]YhYhž`j cb  
XYbYb`b]W\h`U`Y`]b`YXY`UbXYfY`GdfUW\ Y`ØVYfgYhnVUf`g]bX`"5`g  
gc`WYg`[ ]Vh`Yg`Y]bY`[ Yk ]ggY`bUhØf`]W\Y`J YfnYffi b[ `]b`XYb`8 UhYbž

UVYf'g]Y`V]YhYb`XYbbcW\`Y]b][`Y`]bhYfYggUbhY`9]bV`]W\_Y"

9b[ `]gW\`]gh`a ]h`5VghUbX`X]Y`VY`]YVhYghY  
GdfUW\Y

9b[ `]gW\`]gh]b`XfY]a`U`gc`j`]Y`Yb`@AbXYfb`X]Y`GdfUW\Y`YfghYf`K`U\`  
k`]Y`X]Y`nk`Y]hVY`]YVhYghY`GdfUW\Y`"9b[ `]gW\`]gh`Y]bY`XYf`VY]XYb  
VY`]YVhYghYb`GdfUW\Yb`]b`nk`Y]`8f]hY`b`U`Yf`@AbXYf`i`bX`k`]fXž  
ØVYf`U`Y`@AbXYf`ni`gUa`a`Yb[`YZUgghž`j`cb`)'`i`U`Yf`8i`c`]b[`c!  
6Ybi`hnYf`[`Y`Yfbh"

`U`h1` ?UfhY`XYf`VY`]YVhYghYb`GdfUW\Yb`2`8i`c`]b[`c`

:`fUb`nØg]gW\`]gh`X]Y`nk`Y]hVY`]YVhYghY  
GdfUW\Y

:`fUb`nØg]gW\`]gh`Ui`g`nk`Y]`DYfgdY`\_h]j`Yb`X]Y`nk`Y]hVY`]YVhYghY  
GdfUW\Y"

- 9g`]gh`X]Y`nk`Y]hVY`]YVhYghY`GdfUW\Y`YfghYf`K`U\`fl` )  
`@AbXYf`]a` `J`Yf[`Y]W\`ni` `9b[ `]gW\`a` ]h`%`\*` Ł
- 9g`]gh`X]Y`VY`]YVhYghY`GdfUW\Y`nk`Y]hYf`K`U\`fl`+` `@AbXYf`  
]a` `J`Yf[`Y]W\`ni` `) +`GdUb]gW\` Ł

`U`h1` 2`8i`c`]b[`c`

8]Yg`VYgh`Ah][`h`i`bgYfY`6Y\`Ui`dhi`b[`ž`XUgg`:`fUb`nØg]gW\`X]Y`VYghY  
GdfUW\Y`ni`a` `@YfbYb`ZØf`X]Y`Yb][`Yb`]ghž`X]Y`VYfY]hg`9b[ `]gW\`  
gdfYW\Yb`"9g`gc`hY`YXcW\`[`YgU[`h`k`YfXYb`ž`XUgg`:`fUb`nØg]gW\`]b  
Yb[`Yf`?`cb`\_i`ffYbn`ni` `GdUb]gW\`ghY`h`"C`V`k`c`\`Yg`]b`),`i`U`Yf`  
`@AbXYf`Y]bY`XYf`nk`Y]`VY`]YVhYghYb`GdfUW\Yb`]ghž`j`Yf[`]W\Yb`a` ]h  
GdUb]gW\`]b`(`\*`i`ž`YfbYb`bi`f`%`i`U`Yf`8i`c`]b[`c!6Ybi`hnYf`  
:`fUb`nØg]gW\`ž`j`Yf[`]W\Yb`a` ]h`%`+`i`ž`X]Y`GdUb]gW\`YfbYb`"

GW\`k`YX]gW\`]gh`X]Y`VY`]YVhYghY  
Ghi`X]Yb`gdfUW\Y`]b`GW\`k`YXYb

8]YgY`5bca U`]Y`]gh`b`XYf`cV][ Yb`? UfhY`g]WXYf`]W  
WUfU\_hYf]gh]gW "G]bX`X]Y`G\_UbX]bUj ]Yf`gW`]Y»`]W`b]W h  
gdfUW VY[ UVh3

8i c`]b[ c` \Uh`Y]bY`9f\_`Äfi b[ `XUZøfž`k Ufi a` `&+`i` `U`Yf`6Ybi hmYf`]b  
GWk YXYb`GWk YX]gW` `YfbYb.` 8]Y`9]bk UbXYfi b[ `bUW  
GWk YXYb`]gh`b`XYb` `YhnhYb` ð\`fYb`gd fi b[ \UZh`Ub[ Ygh]Y[ Yb.  
9]bYf`j cb`gYW`g`gWk YX]gW`Yb`9]bk c`bYfb`]a` `ð\`f`&\$%) `k i fXY  
Ui »Yf`U`V`GWk YXYbg`[ YVcfYb`"8]Y`Ua` `gW`bY`ghYb`k UW`gYb`XYb  
]a` `5i`g`UbX`[ YVcfYbYb`; fi ddYb`ghUa` a`Yb`Ui`g`Gmf]Yb`i`bX  
5Z[ \Ub]ghUbž`k Ug`Y]bYb``Øb[ ghYb`5bgh]Y[ `XYf  
: `ØW`h]b[ gVYj Ö`\_Yfi b[ `k ]XYfgd]Y[ `Y`h"

9b[ `]gW` `]gh`X]Y`nk`Y]hVY`]YVhYghY  
Ghi X]Yb gdfUW Y`]b`XYb`i` G5

9b[ `]gW` `]gh`X]Y`nk`Y]hVY`]YVhYghY`GdfUW`Yž`X]Y`]b`XYb`i` G5`[ `Y`Yfb`h  
k ]fX`f&%`i` `U`Yf`6Ybi hmYf`Ä`Y`b`]W`k` ]Y`]b`GWk YXYb`\_Ubb`X]Yg  
Xi fW`9]bk UbXYfi b[ `Yf\_`Äfh`k`YfXYb"

8Yf`9]bk UbXYfYfUbhY` `Ub`XYf`[ YgUa` hYb`i` G!6Yj Ö`\_Yfi b[ `]Y[ h  
VY]`ØVYf`%` `i` `i`bX`ØVYf`&) `A`j`]cbYb`A`YbgW`Yb`[ YVYb`Ubž  
k Yb][ Yf`U`g` `gY`f`[ i`h` `9b[ `]gW` `ni` `gdFYW`Ybž`k Ug`k U`fgW`Y]b`]W  
Yf\_`Äfhž`k Ufi a` `gc`j` ]Y`Y`8i c`]b[ c`j`Yfk`YbXYbž`i`a` `9b[ `]gW` `ni`  
`YfbYb"

9]b][ `Y`9]b` \Y]a` ]gW`Y`gd fYW`Yb`]` \fY  
5a` hggdfUW`Y`b]W`h

5V[ YgY`Yb`j`cb`XYf`9]bk UbXYfi b[ `\_ÖbbYb`Y]b][ `Y`9]b` \Y]a` ]gW`Y  
]`fY`5a` hggdfUW`Y`b]W`h`gd fYW`Yb`" ð`ðX]Yb`ni`a` `6Y]gd]Y`]gh  
9b[ `]gW` `Y]bY`cZZ]n]Y`Y`GdfUW`Y`fhi`gUa` a`Yb`a` ]h`<]bX]ž`UVYf`bi`f  
%\$`i` `XYf` ðXYf`gd fYW`Yb`Ygž`k Ug`Yf\_`Äfhž`k Ufi a` `Yg`X]Y  
VY`]YVhYghY`GdfUW`Y`]ghž`X]Y`[ `Y`Yfb`h`k` ]fX"

5`g`Y`Y`a` U`][ `Y`dcfhi` [ ]Yg]gW`Y`?`c`cb]Yb`VY`U`hYb`5b[ c`U`i`bX  
A`cgUa` V]\_`Dcfhi` [ ]Yg]gW`U`g`Y]bn][ `Y`5a` hggdfUW`Y`VY]"`Hf`ch`XYa`

gdfYWX Yb' (\$'i' Vnk "' ) \$'i' XYf'9]b\Y]a ]gWX Yb'X]Y'GdfUWX Y"'8Ua ]h  
]gh'Yg'bUWX '9b[ `]gWX'X]Y'nk Y]hVY`]YVhYghY '@YfbgdfUWX Yž'k Ug  
k ]YXYfi a' ]c'fUi ggYhni b[ 'ZØf'XUg'9f'YfbYb'j'cb'Dcfhi [ ]Yg]gWX' ]gh"

⇒b' ? UbUXU' ]gh': fUbnØg]gWX'X]Y'VY`]YVhYghY'Ghi'X]Yb'gdfUWX Y"  
8i'c` ]b[ c'ØVYf'Y[ h' : fUbnØg]gWX'k ]fX'\Ui' dhgÅWX' ]WX' ]b'XYf  
FY[ ]cb'E i' ÅVYW[ YgdfcWX Yb' '8]Y'Ub'XYfYb'HY' ]Y' ? UbUXUg'g]bX  
j ]Y'k Yb][ Yf'nk Y]gdfUWX ][ ž'cVk c'\` : fUbnØg]gWX'ZØf'X]Y'a Y]ghYb  
\_UbUX]gWX Yb'GWÅØ'Yf'U'g'Nk Y]hgd'fUWX Y'cV' ][ Uhc'f]gWX' ]gh" ⇒gh'X]YgY  
5bZc'fXYfi b[ 'XYf'; fi bXž'k Ufi a'Y]b'8f]hY'`XYf'8i'c` ]b[ c!6Ybi'hnYf  
]b' ? UbUXU' : fUbnØg]gWX'`YfbYb'3'CYf'` ]Y[ h'Yg'XUfUbž'XUgg'X]Y  
a Y]ghYb' ? UbUX]Yf'k ]f\_]WX' ]\fY'Ub'XYfY'5a' hggdfUWX Y'`YfbYb  
k c`Yb3

⇒a' ; Y[ Yb'gUhn'ni'gY]bYb'BUWXVUfb'`Yfb'h  
5f[ Yb'h]b]Yb'⇒hU` ]Yb]gWX

⇒hU` ]Yb]gWX' ]gh'X]Y'nk Y]hVY`]YVhYghY'GdfUWX Yž'X]Y' ]b'5f[ Yb'h]b]Yb  
[ Y'Yfb'h'k ]fX'fbUWX '9b[ `]gWX'k'8]Yg' ]gh'Y]bY'5fh'5bca' U' ]Yž'XU  
⇒hU` ]Yb]gWX' ]b][ Yb'Xk'c'gcb'gh'Ui'Z'XYa' '?c'b'h]bYb'h'i'bhYf'XYb'Yf'ghYb  
VY]XYb'YfgWX Y]b'h"

8Yf'; fi bX'k ]fX'\_'Ufž'k Ybb'a' Ub'YfZÅ\fhž'XUgg'\*' 'i' XYf  
5f[ Yb'h]b]Yf'Ui Z[ fi bX'XYf'[ fc»Yb'9]bk Ub'XYfi b[ gk Y`Yb' ]a' %- "  
i bX'&\$"' :J\ f\i bXYfh' ]hU' ]Yb]gWX Yg'6'i h'\UVYb"

⇒a' ; Y[ Yb'gUhn'ni'gY]bYb'BUWXVUfb'`Yfb'h  
; i mUbU' \_Y]b'9b[ `]gWX

⇒a' ; Y[ Yb'gUhn'ni' a'F'Ygh'GØXUa'Yf]\_Ug' ]gh'; i mUbU' ]b]WX'h'XUg  
9b[ `]gWX'YfbYb'U'g'Y]bY'XYf'VY]XYb'VYghYb'K' U'\`a' Ø[ `]WX'\_Y]hYbž  
gcb'XYfb'Yb'hgWX Y]XYh'g]WX' ]gh'Uhh'XYggYb'ZØf'GdUb]gWX' ]i' bX  
Dcfhi [ ]Yg]gWX "

BUWX'ØVYf'Y]bYa' :J\ f\i bXYfh'Vf]h]gWX Yf'< YffgWX UZh' ]gh'Yg  
gY'Vghj YfghÅbX`]WX'ž'XUgg'; i mUbU'9b[ `]gWX'VY\YffgWX'h"  
HUhgÅWX' ]WX' ]gh'Yg'X]Y'5a' hggdfUWX Y'XYg'@Ub'XYgž' ]a' ; Y[ Yb'gUhn'ni

gY]bYb`B UWX VUfb`Ui Z`XYa`?`cbh]bYbh`

8 Yi hgWX`]gh`X]Y`VY`]YVhYghY`Ghi X]YbgdfUWX Y  
]b`B Ua ]V]U

: Øf`X]Y`Yb][ Ybž`X]Y`a`]h`XYf`?`c`cb]U`[ YgWX`]WX`hY`B Ua ]V]Ug`b]WX`h  
j`YfhfUi`h`g]bXž`a`U`[`Yg`ØVYffUgWX`Ybž`XUgg`8 Yi hgWX`X]Y`VY`]YVhYghY  
GdfUWX`Y`]ghž`X]Y`Xcfh`[`Y`Yfb`h`k`]fX`"

`U`h1` 2 ; Ya`Y]bZfY]`ϕ`B Ua ]V]U`]gh`8 Yi hgWX`X]Y`VY`]YVhYghY  
Ghi X]YbgdfUWX`Y`

ϕ`B Ua ]V]U`]gh`8 Yi hgWX`X]Y`VY`]YVhYghY`Ghi X]YbgdfUWX`Y`fb`]`X.  
Di`V`]W8ca`U]bŁ

HUhgÅWX`]WX`]gh`Yg`k`U`fgWX`Y]b`]WX`Y]b`9f[`YVb]g`XYf`XYi`hgWX`Yb  
<`YffgWX`UZhž`i`bhYf`X]Y`B Ua ]V]U`%` ,`(`Z]Y`""`8 Yi hgWX`k`Uf`V]g`%-`-\$  
Y]bY`XYf`5a`hgdfUWX`Yb`XYg`@UbXYg`i`bX`k`]fX`XYfnY]hj`cb`" &`i  
XYf`k`Y]»`Yb`6Yj`Ø`\_Yfi`b[`B Ua ]V]Ug`[`YgdfcWX`Yb`"

6 Ub[`UXYgWX`Y`Yfb`h`\_Y]b`9b[`]gWX

GdUb]gWX`]gh`X]Y`VY`]YVhYghY`GdfUWX`Yž`X]Y`]b`6 Ub[`]UXYgWX`[`Y`Yfb`h  
k`]fXž`[`Y`Zc`[`hj`cb`:`fUb`n`Øg]gWX`""`9g`gWX`Y]b`h`gY`hgUa`ž`XUgg`9b[`]gWX  
b]WX`h`VY`]YVhYf`]gh`"@Y[`h`XUg`Ub`XYb`6Ya`Ø`i`b[`Yb`XYf  
VUb[`]UXYgWX`]gWX`Yb`:`Ø`f`Yfž`X]Y`9b[`]Åb`XYf`b`UWX`XYf  
I`bUV`Åb[`]\_[`\_Y]h`k`Yb][`Yf`ni`VY`hc`b`Yb`3`?`Ø`bb`hY`Yg`Ub`Y]b`Ya`fY`Uh]j  
a`]b`XYfk`Yfh][`Yb`6Yb[`U]!`9b[`]gWX`8`i`c`]b[`c`!`?`i`fg`]Y[`Yb`3`<`UVYb  
6Yb[`U`Yb`Y]b`Y`5`Z]b]h`Å`h`ni`GdUb]Ybž`j`cb`XYf`k`]f`bc`WX`b]WX`hg  
k`]ggYb`3`K`]f`ZfYi`Yb`i`bg`ØVYf`:`U`\_hYb`c`XYf`H`Ycf]Ybž`X]Y`ni`f  
?`Åfi`b[`]VY]hfU[`Yb`\_`Ø`bb`Yb`°

@Y]hV]`X.`8fYUa`gh]a`Y`

6Ygi W\Yb`G]Y`i bg`Ui Z.`Y]bY!fY]gY"XY