

H\Y`7fmdhc`8U]`m` `A cj Yfg`UbX`G\U\_Yfg`  
% "GYdhYa VYf`&\$&%

6]hWc]bž`6H7`ni`l`G8ž`gh]Y[ `Ua`GcbbhU[ `i`a`%ž-`&l`"BUW  
Y]bYa`D`i`g`j`cb`\$ž) +`i` `Ua`GUa`ghU[ `VYYbXYhY`6]hWc]b`X]Y  
K`cWY`a`]h]Y]bYa`A`]bi`g`j`cb`%%ž\$-`i` `Ui`Z`(`\*"\$`'`,`ž-`~`"9]b  
[`Ya`]gW`hYf`GhUfh]b`XYb`HU[ `ZØ\`fhY`XUni`ž`XUgg`6]hWc]b`Ui`Z  
Y]b`ϕhfUXUm`H]YZ]j`cb`(`("++(`ž&l`G8`Ua`ZfØ\Yb`A`cf[`Yb`Z]Y`ž  
VYj`cf`Yg`Y]bY`6Yk`Y[ `i`b[ `a`UW`hY"l`a`XUg`YfghY`[`fc»`Y  
l`bhYfghØhni`b[ `gb]j`YUi`VY]`((`("`+)`~`ni`i`a`[`Y\Ybž`Yf\`c`hY  
g]W`6]hWc]b`Ui`Z`Y]b`gd`Å`hY`g`ϕhfUXUm`<`cW`j`cb`(`\*"`(``\*\*`ž\$`~`"  
6]hWc]b`Xi`fW`VfUW`X]Y`YfghY`[`fc»`Y`K`]XYfghUbXga`Uf`\_`Y`VY]  
(`)"`,`%)`~`i`bX`VYYbXYhY`XYb`HU[ `VY]`(`\*"\$\$\$`~`"8Yf  
\_i`fnZf]gh][`Y`5i`Zk`Å`fhghfYbX`V`]YV`hfc`hn`XYf`Øb[ `ghYb  
FØW\_\_Y\`f`Ui`Z/`Ua`d`^`Y`^`d/

6]hWc]bž`6H7`ni`l`G8ž`gh]Y[ `Ua`GcbbhU[ `i`a`%ž-`&l`"BUW`Y]bYa  
D`i`g`j`cb`\$ž) +`i` `Ua`GUa`ghU[ `VYYbXYhY`6]hWc]b`X]Y`K`cWY`a`]h  
Y]bYa`A`]bi`g`j`cb`%%ž\$-`i` `Ui`Z`(`\*"\$`'`,`ž-`~`"9]b

9]b`[`Ya`]gW`hYf`GhUfh]b`XYb`HU[ `ZØ\`fhY`XUni`ž`XUgg`6]hWc]b`Ui`Z`Y]b  
ϕhfUXUm`H]YZ]j`cb`(`("++(`ž&l`G8`Ua`ZfØ\Yb`A`cf[`Yb`Z]Y`ž`VYj`cf`Yg  
Y]bY`6Yk`Y[ `i`b[ `a`UW`hY"

l`a`XUg`YfghY`[`fc»`Y`l`bhYfghØhni`b[ `gb]j`YUi`VY]`((`("`+)`~`ni

i a [ Y\Ybž'Yf\c`hY'g]W\`6]hWc]b`Ui ZY]b`gdÀhYg` ðhfUXUml < cW\`j` cb  
( \*"( \* \* ž\$` " "

6]hWc]b`Xi fW\ VfUW\`X]Y`YfghY`[ fc»Y`K` ]XYfghUbXga Uf\_Y`VY]  
( ) ", %)` `i bX`VYbXYhY`XYb`HU[ `VY]:( \*"\$\$\$` " "

8 Yf`\_i fnZf]gh][ Y`5i Zk`ÀfhghfYbX`V`]YV`hfc`hn`XYf``Øb[ ghYb`F`ØW\_\_Y\`f  
Ui ZY]b`B]j`YUi` `j`cb`(' "\$\$\$`i G8`]bhU`h": Øf`X]Y`6`ÀfYb`Vf`Ài` W\`hY  
6]hWc]b`Y]bYb`Ub\`U`hYbXYb`F`ØW\_[ Ub[ `Xi fW\`XYb`\*`&`i` `: Æ`j`cb  
&+`&` +` ` ž`i` a` `Y]bYb`\_i fnZf]gh][ Yb`5Vk`ÀfhghfYbX`ni` `V]`XYb`"

## 8 Yf`F`Ygh`XYg`DU`\_Yhg

6Y]`XYb`UbXYfYb`A`U`čfg`k`Uf`Yg`Y]b`Xi fW\`k`UW\`gYbYf`HU[ `Ua  
GcbbhU[ " "

7 UfXUbcbg`585`fi hgW\`hY`i` a` `&ž%`i` `UVž`k`cVY]`6]hWc]b`7 Ug\`GJ  
fl`\$ž%`i` `Ł`YVYbZU``g`fch`gU\`ž`i` a` `XYa` `HfYbX`Ybh[ Y[ Ybni`k`]f`\_Yb`"

: Øf`XYb`F`Ygh`XYf`A`U`čfg`k`Uf`Yg`Y`XcW\`Y]b`Vi` ``]gW\`Yf`HU[ " "

Dc`\_UXch`Y[ hY`i` a` `%%ž&+`i` `ni` ž`i` a` `X]Y` : Ø\`fi` b[ `ni` `ØVYfbY\`a` Ybž  
a` ]h`7\`U]b`]b`\_fž` -`ž\$` `i` `Ł`\_bUdd`XU\`]bhYf`"

6]bUbW\`7c]b`fž` &ž` \*`i` `Ł`7`fmdhc`"Wc`a` `7c]b`fž` ` ` ž` \$`i` `Ł`9`h\`YfY`i` a  
fž` ( ž%-`i` `Ł`ž`@]hYWc]b`fž` &ž` )`i` `Ł`ž`i` bX`F]dd`Y`g`L`F`D`fž` ` ` ž` ` `i` `Ł`  
Yfn]Y`hY`YVYbZU``g`gc`]XY` ;` Yk` ]bbY`"

9g`k`Uf`Y`XcW\`Ui`W\`Y]b`Y`Xi fW\`k`UW\`gYbY`K`cW\`Y`ZØf`X]Y`?`fmdhc`!  
A`U`čfg`"

Dc`\_UXch`gh]Y[ `i` a` `%\*`ž`-%`i` `a` ]h`7`fmdhc`"Wc`a` `7c]b`fž` %ž%,` `i` `Ł`Ui`W\`  
[ Y[ Yb`XYb`K`cW\`YbhfYbX`"

: Øf`X]Y`UbXYfYb`A`U`čfg`k`Uf`Yg`Y`XcW\`Y]bY`fØW`\_`Ài`Z][ Y`K`cW\`Y`"

@]hYWc]b`fi hgW\`hY`i` a` `&%ž&(`i` `UVž`i` a` `a` ]h`6]bUbW\`XYb`K`Y[ `ni  
k`Y]gYb`7c]b`fl`%+ž` )`&`i` `Ł`i` bX`6]hWc]b`7 Ug\`GJ`fl`%`ž`\*,` `i` `Ł`X]W\`h`"

XU\]bhYf

7UfXUbcg'585'fl%ž +i Łž'7\U]b`]b\_'fl%&") %i Łž'9h\YfYi a  
fl%' , , i Łi bX'F]dd`Y g`LFD'fl%( ž %i Ł'\UhhY`YXcW\YVYbZU`g  
DfcV`Ya Y"

⇒`XYf`K cW\Y`gh]Y[ `XYf`?fmdhc!; YgUa ha Uf\_h`Ui ZY]b`8]YbghU[ !  
<cW\j cb`&(" , 'A fX"i G8žVYj cf`Yf`Ui ZY]b`8]YbghU[ gh]YZj cb  
%, ' ) `A fX"i G8`ZY`"Ni a `NY]hdi b\_h`XYg`GW`fY]VYbg`U[ `X]Y  
; YgUa ha Uf\_h`Ud]hU`g]Yfi b[ `VY]`&"% ( `A fX"i G8"

8]Y`8ca ]bUbn`j cb`6]hWł]b`gh]Y[ `Ui ZY]b`8]YbghU[ !<cW\j cb`(' ž\*(  
i žVYj cf`g]Y`Ui ZY]b`: fY]hU[ g!H]YZj cb`' - ž- &i `ZY`"Ni a  
NY]hdi b\_h`XYg`GW`fY]VYbg`U[ `X]Y`8ca ]bUbn`j cb`6]hWł]b`VY]  
( \$ž\*) i "

### < Yi hY`A cf[ Yb

Ni a `NY]hdi b\_h`XYg`GW`fY]VYbg`gh]Y[ `6]hWł]b`i a `ž%) i `Ui Z  
(\*`%\$+žš`~`"9]b`[ Ya ]gW\hYf`GhUfh]b`XYb`HU[ `ZØ\fhY`XUni ž`XUgg  
6]hWł]b`Ui ZY]b`H]YZUa `ZfØ\Yb`A cf[ Yb`j cb`(\*`\$\$' ž( `i G8`ZY`ž  
VYj cf`Yg`Ui ZY]b`<cW\j cb`(\*`&\* - žš`i G8`gh]Y[ "

6]hWł]b``Y»`X]Y`k ]W\h[ ghYb`i bhYfghØhni b[ g!`i bX  
K ]XYfghUbXgb]j YUi g`ZfØ\nY]h][ `i b[ YhYghYh"

5b`UbXYfYf`GhY`Y`k Uf`Yg`Y]b`Xi fW\k UW\gYbYf`GhUfh]b`XYb`HU[ "

6]hWł]b`7Ug\`GJ`fl\$ž &i Łž'7UfXUbcg'585'fl\$ž)' i Łi bX'F]dd`Y g  
LFD'fl\$ž&' i ŁigU\`fchž'i a`g]W\XYa`ZfØ\Yb`HfYbX`ni`k ]XYfgYhnYb"

: Øf`XYb`F Ygh`XYf`A U`c`fg`k Uf`Yg`YXcW\Y]b`Vi``]gW\Yf`GhUfh"

Ni a 'NY]hdi b\_h'XYg'GWfY]VYbg'k Uf'Dc`\_UXchi a '&ž- ( |  
[ Ygh]Y[ Ybž'i a 'X]Y': Ø\fi b[ 'ni 'ØVYfbY\ a Yb"

: Øf'XYb'VYj c fghY\ YbXYb'6]hWc]b!HU[

6]hWc]b'a ØgghY'XYb'D]j chj cb'() "+\* \$'l G8'j Yfa Y]XYbž'i a 'XUg  
YfghY'[ fc»Y'K ]XYfghUbXgb]j YUi 'VY]'( "\*" +() 'l G8']bg'Gd]Y`ni  
Vf]b[ Yb"

8Ua ]h'6]hWc]b'Ui g'XYf'(") \$\$!8c`Uf!A Uf\_Y'Ui gVfYWX Yb'\_Ubbž  
k ÅfY'l bhYfghØhni b[ 'j ca 'VfY]hYfYb'A Uf\_h'YfZcfXYf']W"

5V[ YgY\Yb'j cb'Y]bYf'VfY]h'Ub[ Y'Y[ hYb'? fmdhc!F U`mY'k ØfXYb'XUg  
YfghY'[ fc»Y'K ]XYfghUbXgb]j YUi 'i bX'XYf'K ]XYfghUbX'VY]'( + "\$\$\$'`  
k U\fgWXY]b']W'XYb'5i Zk ÅfhghfYbX'VY[ fYbnYb"

æa ': U`Y'Y]bYf'VfY]h'Ub[ Y'Y[ hYb'? fmdhc!F U`mY'\_ØbbhY'6]hWc]b'XYb  
K ]XYfghUbX'VY]'( , "\$\$\$'l G8'hYghYbž'VYj cf'Yg'ni 'Y]bYa 'FØW\_ni [ \_ca  
a h'8]Y'nk Y]hY'[ fc»Y'K ]XYfghUbXga Uf\_Y`]Y[ h'VY]'( +"() &'l G!  
8c`Uf"

9]b': U`Xi fW'XYb'D]j chj cb'() "+\* \$'l G!8c`Uf'k ØfXY'XUg'YfghY  
[ fc»Y'l bhYfghØhni b[ gb]j YUi 'VY]'( "\$) ' 'l G!8c`Uf']bg'Gd]Y`  
Vf]b[ Yb"

5V[ YgY\Yb'j cb'Y]bYa ``Åb[ YfYb'5i gj Yf\_Ui ZUb'X]YgYa 'HU[ 'gc`hY  
6]hWc]b'g]W'j cb'i bhYf'(( "\$\$\$'l G8'ZYfb\U'hYb"8 Ug'nk Y]hY'[ fc»Y  
l bhYfghØhni b[ gb]j YUi 'VY]'( (" \$\* , 'l G8'gc`hY'X]Y  
5Vk ÅfhgVYk Y[ i b[ 'VY[ fYbnYb"

6Ygi W\ Yb 'G]Y 'i bg 'Ui Z. '\_fmdhc!bYk g"Uh