

K UggYfW\ Ucg`]b`B cfXYb\Ua .  
? fY]ga Y]ghYfgW\ UZhYb`hfc hnYb  
6Yk ÀggYfi b[ gUb`U[ Y

8]Y`? fY]ga Y]ghYfgW\ UZhYb`]b`B cfXYb\Ua `k i fXYb`Xi fW\`Y]bY  
6Yk ÀggYfi b[ gUb`U[ Y`[ YghÒfhž`XcW\`gdcfh`W\Y  
Gd]hnYb`Y]ghi b[ Yb`V`YVYb`b]W\h`Ui`g"

6Y]`XYb`? fY]ga Y]ghYfgW\ UZhYb`XYf`K YgYfa UfgW\!@Y]W\hUh\`YhYb`]b  
BcfXYb\Ua ``Y[ hY`g]W\`Y]b`i b[ Yk c`hYf`GW\Ui Yf`ØVYf`XUg`9j Ybh  
8]Y`6Yk ÀggYfi b[ gUb`U[ Y`XYg`GhUX]cbg`gc f[ hY`ZØf`i bYfk UfhYhY  
I bhYfvfYW\i b[ Yb`i bX`Y]b`W\Uch]gW\Yg`K Yh\_Ua`dZ[ YgW\Y\Yb`  
Hfchn`XYf`gh`ÀbX][ Yb`K UggYfZcbh`ÀbYb`k Uf`X]Y`@Y]ghi b[ gZÀ\][`\_Y]h  
XYf`5h\`YhYb`VYa`Yf`\_Ybgk`Yfh"

Gdcfh`Yf]bbYb`i bX`Gdcfh`Yf`Ui`g`ZØb`Z`J`YfY]bYb`hfUhYb`]a`D`UUhk`Y[!  
GhUX]cb`ni`gdUbbYbXYb`K`Yh`\_Àa`dZYb`Ub`"8]Y`≠XY`Y]bYf  
? fY]ga Y]ghYfgW\ UZh`gc`hY`XUg`Xc fh][`Y`@Y]W\hUh\`Yh]\_!; YgW\Y\Yb`]b  
XYb`J`cfXYf[`fi`bX`ghY`Ybž`XcW\`X]Y`6Yk ÀggYfi b[ gUb`U[ Y`k`c`hY  
cZYbg]W\h]W\`b]W\h`a`]hgd]Y`Yb"

I bj cf\ YfgY\ VUfY`GhÒfi b[ Yb`k`À\ fYbX`XYf  
K`YhhVYk`YfVY

8 Ug`6Ygdf]hnYb`XYg`D`UhnYg`VYY]bhf`ÀW\h][`hY`]bgVYgcbXYfY`X]Y  
J`cfVYfY]hi b[ Yb`ZØf`XYb`) \$\$\$!A`YhYf!@Ui`Z`XYf`]bg[ YgUa`h`XfY]a`U`  
i`bhYfvfcW\Yb`k`YfXYb`a`i`gghY`"K`UggYfghfU`\`Yb`gW\`cggYb  
i`bYbhk`Y[`h`Ui`g`XYf`6Yk ÀggYfi b[ gUb`U[ Y`i`bX`hfi`[`Yb  
YbhgW\Y]XYbX`ni`f`I`bfi`\`Y`XYg`K`Yh`\_Ua`dZUV`Ui`Zg`VY]"8]Yg`ZØ\`fhY  
ni`Y]bYf`VYgcbXYfYb`<`YfUi`gZc`fXYfi`b[`ZØf`X]Y`C`f[`Ub]gUhc`fYb"

⇒ `<`cW\gdfi b[ `k`Uf`X]Y`G]hi`Uh]cb`bcW\`\_f]h]gW\Yf`"5`Y`ZØb`Z

A ]bi hYb`k i fXY`XYf`K YhhVYk Yfv`[ Yghcddhž`i a `X]Y`bUggYb  
6YX]b[ i b[ Yb`Ub[ Ya YggYb`ni `a UbU[ Yb``8]Y`8Ui YfZÀ``Y`Xi fW`X]Y  
ØVYfZi hYhYb`5b`Ui ZVU`bYb`gcf[ hYb`Yhnh`W`XUZØfž`XUgg`XfY]  
5h`YhYb`VY]a `UVgW`Y» YbXYb`&\$\$\$!A YhYf!@Ui Z`b]W`h`a Y`f  
UbhfYhYb`\_cbbhYb"

B UW`j]bhYbg]j Yb`(\$`A ]bi hYbž`]b`XYbYb`XUg`?Ua dZf]W`hYfhYUa `i a  
9W`UfX`A YmYf`i bX`≡\_U`K UW`hYbXcfZi bYfa ØX`]W`j Yfgi W`hYž`X]Y  
H]hY`\_Àa dZY`k ]YXYf`]bg`@ch`ni `Vf]b[ Ybž`\_cbbhYb`X]Y`K YhhVYk YfVY  
gW`Y]» `]W`Zcfh[ YgYhnh`k YfXYb``9]b`ghUf`Yg`HYUa `j cb`CZZ]n]Y`Yb  
`UhY`X]Y`<YfUi gZcfXYfi b[ `Ub[ Ybca`a Yb`i bX`U`Yg  
A YbgW`Yba Ò[ `]W`Y`i bhYfbca`a Ybž`i a `X]Y`A Y]ghYfgW`UZh`ni  
Y]bYa `dcg]h]j Yb`9bXY`ni `Vf]b[ Yb"

; `Ub`n`Y]ghi b[ Yb`XYf`5h`YhYb

Hfchn`XYf`i bUbbY`a `]W`\_Y]hYbž`X]Y`Xi fW`X]Y  
6Yk ÀggYfi b[ gUb`U[ Y`j Yfi fgUW`h`k i fXYbž`[ Y`Ub[ `Yg`XYb  
5h`YhYbž`Yfj cffU[ YbXY`@Y]ghi b[ Yb`ni `nY][ Yb``8Yf`[ Ugh[ YVYbXY  
GJ`BcfXYb`Ua `gUa`a Y`hY`X]Y`a Y]ghYb`H]hY`Y]b`i bX`UbXYhY`a ]h  
%+`YfghYb`D`ÀhnYb`[ Ub`n`cVYb`Ui Z`XYa`HfYddW`Yb``8]W`h`[ YZc`[ h  
j`ca`GJ`6fU`Y`a ]h`%\*`H]hY`b`i bX`Hi G`X`YfVYf[ `a ]h`gYW`g  
A Y]ghYfgW`UZhYbž`k UfYb`X]Y`K Yhh`\_Àa dZYf`Ui g`XYf`F Y[ ]cb`]b  
6YghZcfa "

GUbh]bc`@cn]hc`j`ca`Hi`G`HcggYbg`ghUW`VYgcbXYfg`Yfj`cfž`]bXYa  
Yf`]a`8fY]\_Ua dZ`%&- , `Di`b`\_hY`i`bX`]a`J]Yf`\_Ua dZ`gc[ Uf`%+`&(  
Di`b`\_hY`i`c`hY``GY]bY`VYY]bXfi`W`\_YbXY`%\$\$!A YhYf!NY]hj`cb`%&ž  
GY`\_i`bXYb`i`bX`XYf`K`Y]hgdfi`b[ ]`cb`(`ž`(`A`YhYf`k`UfYb`b]W`h`ni  
gW`U[ Yb"

5bbY`\_Y`K`UW`hYbXcfZ]j`ca`GJ`B`nY][`hY`Ui`W`\_Y]bY`VYY]bXfi`W`\_YbXY  
@Y]ghi`b[ `a`]h`%&- , `Di`b`\_hYb`]a`8fY]\_Ua dZ`i`bX`%+`&(`Di`b`\_hYb`]a  
J]Yf`\_Ua dZ`i`fY`NY]hj`cb`%`ž`GY`\_i`bXYb`ØVYf`%\$\$`A`YhYf`i`bX  
,`..`(`ž`(`A`]bi`hYb`ØVYf`&\$\$\$`A`YhYf`ØVYffUgW`YbX`gW`bY`"

@ ]gY`F]b[ Y`j`ca`GJ`6fU`Y`nY][`hY`]a`J]Yf`\_Ua dZ`ghUf`\_Y  
@Y]ghi`b[ Yb`a`]h`%+`-`\$`Di`b`\_hYb``6YgcbXYfg`Yfk`À`bYbgk`Yfh`k`Uf`]f`

<cW\gd fi b[ j cb '%ž( \$'A YhYf'i bX'Y]bY'VYY]bXfi W\_YbXY'NY]hj cb %\$ž\* 'GY\_i bXYb'ØVYf'+) 'A YhYf"

⇒ '9fk UW\gYbYbVYfY]W\ 'nY][ hY'6Ugh]Ub'F c\XY']b'Y]bYf'ghUf\_Yb ?cb\_i ffYbn'gY]b'? ØbbYb'i bX'g]W\YfhY'g]W\XYb'G]Y[ 'ØVYf') \$\$\$ A YhYf'a ]h'Y]bYf'NY]hj cb'% .\$\$ž 'A ]bi hYb"8]Y'gW\ bY`ghY': fUi k Uf'A Uf]hnU'F cXU`Y[ U'@Ycbž'X]Y'X]Y'GhfYW\_Y']b'&\$.( , ž 'A ]bi hYb UVgc`j ]YfhY"

8]Y'K Yhh\_Àa dZY'k UfYb'gca ]h'Y]b'Ui ZFY[ YbXYg'GdY\_hU\_Y`žXUg hfc hn'XYf'< YfUi gZc fXYfi b[ Yb'Xi fW\ 'X]Y'6Yk ÀggYfi b[ gUb`U[ Y nU\`fY]W\Y'\YfUi gfU[ YbXY'9f[ YVb]ggY'\Yfj cfvfUW\hY""8]Y 5h\`YhYb' [ UVYb']\f'6YghYg'i bX'VYY]bXfi W\_hYb'X]Y'Ni gW\Ui Yf'a ]h VYY]bXfi W\_YbXYb'@Y]ghi b[ Ybž'Ui W\ 'k Ybb'g]Y'a ]h'VYgcbXYfYb l a ghÀbXYb'i a [ Y\Yb'a i gghYb"

## 9]b'i bYfk UfhYhYf'K Yhh\_Ua dZ\ ÀfhY!HYgh

⇒g[ YgUa h'k i fXYb'X]Y'?fY]ga Y]ghYfgW\ UZhYb'&\$&( 'ni 'Y]bYa YW\hYb'< ÀfhY!HYgh'ZØf'X]Y'5h\`YhYb'ž'X]Y'hfc hn'XYf'k ]Xf][ Yb l a ghÀbXY' [ `ÀbnYbXYb'Gdcfh'VchYb"K À\fybX'X]Y'GhØfi b[ 'Xi fW\ X]Y'6Yk ÀggYfi b[ gUb`U[ Y'i b[ `ØW`\_]W\ 'k Ufž'a i gg'ZYgh[ YghY`h k YfXYbž'XUgg'X]Y'5h\`YhYb'VY]'\_f]h]gW\Yb'6YX]b[ i b[ Yb'HfU]b]b[ g] i bX'K Yhh\_Ua dZ\ ÀfhY'i bhYf'6Yk Y]g'ghY`hYb"8]Y'A Y]ghYfgW\ UZh V'Y]Vh'i bj Yf[ Ygg`]W\ž'k Ybb'Ui W\ 'Ui g'i bYfk UfhYhYb'; fØbXYb"

8]Y'?fY]ga Y]ghYfgW\ UZhYb'\UVYb'b]W\h'bi f'gdcfh]W\Yž'gcbXYfb Ui W\ 'gc n]U`Y'5gdY\_hYž'X]Y'X]Y'; Ya Y]bgW\ UZh'ghÀf\_Yb" J YfUbghU`hi b[ Yb'k ]Y'X]YgY'g]bX'cZh'Y]b'GW\ a Y`nh]Y[ Y`ZØf 5h\`YhYb'ž'HfU]bYfž': Ua ]]Yb'i bX'i bhYfghØhnYf" 'Gc`W\Y'K Yhh\_Àa dZY ZØfXYfb'b]W\h'bi f'XYb'gdcfh]W\Yb'; Y]ghž'gcbXYfb'Ui W\ 'XYb Ni gUa a Yb\U`h'XYf'; Ya Y]bgW\ UZh" ⇒ BcfXYb\Ua 'ni a '6Y]gd]Y` bi hnhYb'j ]Y'Y`c\_U`Y': Ua ]]Yb'X]Y'; Y`Y[ Yb\Y]hž'i a ']\fy'? ]bXYf Ubni Zyi Yfb'i bX'X]Y'9fZc`[ Y']\fyf'Gdcfh'Yf]bbYb'i bX'Gdcfh'Yf'ni ZY]Yfb" 'Gc`W\Y'9] Ybhg'g]bX'k ]W\h][ 'ZØf'XUg'Øfh]W\Y'J YfY]bg'YVYb i bX'X]Y': ØfXYfi b[ '† b[ Yf'HU`YbhYž'k Ug'g]W\ `Ub[ Zf]gh][ 'dcg]hj 'Ui Z X]Y'9bhk ]W`i b[ 'XYg'Gdcfhg]b'XYf'FY[ ]cb'Ui gk ]f\_h"

GW`Y»`]W`Vf]b[ h`X]Y`HY]`bU`a`Y`Ub`gc`W`Yb`A`Y]ghYfgW`UZhYb  
Ui`W`k`]W`h][`Y`9fZU`fi`b[`Yb`Z0f`X]Y`Uh`Y`h]gW`Y`?`Uff]Yfy`XYf  
↑`b[`Yb`Gdcfh`Yf`a`]h`g]W`"G]Y`YfbYb`b]W`h`bi`f`j`cb`]\`fYb  
@Y]ghi`b[`Yb`ž`gcbXYfb`Ui`W`j`cb`XYb`<`YfUi`gZcfXYfi`b[`Yb`ž`X]Y`XYf  
K`YhhVYk`YfV`a`]h`g]W`Vf]b[`h`ž`k`]Y`Yhk`U`XYb`l`a`[`Ub[`a`]h`8`fi`W`  
i`bX`XUg`GhfYVYb`bUW`dYfg0b`]W`Y`6YghY]ghi`b[`Yb`"8]YgY  
?ca`dYhYbnYb`g]bX`b]W`h`bi`f`Z0f`XYb`Gdcfh`ž`gcbXYfb`Ui`W`Z0f`XUg  
@YVYb`Ui`»`Yf`U`V`XYg`Gdcfh`d`UhnYg`j`cb`6YXYi`hi`b[`"

## @Y]ghi`b[`gXUhYb`i`bX`9fZc`[`Y`

8]Y`FYgi`hUhY`XYf`GdcfhYf`g]bX`VYa`Yf`\_Ybgk`Yfhi`bX`gd]Y[`Y`b`X]Y  
\`UfhY`5fVY]h`k`]XYfž`X]Y`]b`X]Y`J`cfVYfy]hi`b[`[`YghYW`h`k`i`fXY`"  
GUbh]bc`@cn]hc`i`bX`5bbY`\_Y`K`UW`hYbXcfZ`nY][`hYb  
Ui`»`Yf[`Yk`0`b`]W`Y`@Y]ghi`b[`Yb`ž`X]Y`Xi`fW`]`\`fY`Di`b`\_hY`]b`XYb  
K`YhhVYk`YfVYb`i`bhYfghf]W`Yb`k`YfXYb`"Δ`fY`@Y]ghi`b[`Yb`g]bX`Y]b  
6Y`Y[`Z0f`XUg`\`c`\Y`B]j`YUi`XYf`5h`Y`hYb`]b`XYf`K`YgYfa`UfgW`i`bX  
Ui`W`XUZ0fž`XUgg`X]Y`HfU]b]b[`gY]b`Y]hYb`VY]`XYb`J`Yfy]bYb  
YZZ`\_hj`g]bX`"8]Y`Di`b`\_hnU`\`Yb`]a`8`fY`\_Ua`dZi`bX`J]Yf`\_Ua`dZ  
`Y[`Yb`XYb`i`c`\_i`g`Ui`Z`X]Y`J]Y`gY]h][`\_Y]h`XYf`5h`Y`hYb`i`bX`X]Y  
6YXYi`hi`b[`XYf`[`Ub`n`Y]h]W`Yb`i`0fXYfi`b[`]a`Y]W`hUh`Y`h]gW`Yb  
BUW`k`i`W`g"

## GhUh]gh]\_Yb`ni`HY]`bY`a`Yfb`i`bX`K`Yhh`Åa`dZYb`

6Y]`XYb`?`fy]ga`Y]ghYfgW`UZhYb`hfUhYb`]bg[`YgUa`h`Z0b`ZJ`Yfy]bY`Ub`ž  
a`]h`Y]bYf`VYa`Yf`\_Ybgk`Yfhi`b`5bnU`\`Ub`A`YXU]`Yb[`Yk`]bbYb`"8]Y  
J`YfhY]i`b[`XYf`H]hY`i`bhYf`XYb`J`Yfy]bYb`nY][`h`Y]bY`\`c`\Y  
K`YhhVYk`YfVgZ`Å\][`\_Y]h`i`a`F`Y[`]cbU`gdcfhž`]bgVYgcbXYfy`Z0f`X]Y  
HY]`bY`a`Yf`XYg`GJ`B`cfXYb`\Ua`i`bX`XYg`GJ`6fU`\_Y`"8]Y`Yfn]Y`hYb  
NY]hYb`i`bX`Di`b`\_hnU`\`Yb`[`YVYb`5i`ZgW`i`gg`0VYf`XUg`gdcfh]W`Y  
B]j`YUi`i`bX`X]Y`@Y]ghi`b[`gYb`hk`]W`\_i`b[`XYf`hY]`bY`a`Yb`5h`Y`hYb`"

- GJ`B`cfXYb`\Ua`i`%+`H]hY`
- GJ`6fU`\_Y`i`%\*`H]hY`
- Hi`G`>UXYfVYf[`i`\*`H]hY`
- Hi`G`HcggYbg`i`&`H]hY`
- G;`U`\_ei`]bYh`@Ya`k`YfXYf`i`%`H]hY`

Ni gÀhn`jW`UggYb`g]W`Xi fW`X]Y`9f[ YVb]ggY`XYf  
@Ub[ ghfYW\_Ybk Yhh\_Àa dZY`i bX`Gdfi b[ !8]gn]d`]bYb`9f\_Ybbhb]ggY  
ØVYf`HfU]b]b[ gZc\_i ggY`i bX`]bX]j ]Xi Y`Y` : cfhgW`f]hhY`UV`Y]hYb`"GY]h  
XYb`YhhYb`?fY]ga Y]ghYfgW`UZhYb`]gh`Y]bY`\_cbh]bi ]Yf`]W`Y  
J YfVYggYfi b[ `XYf`@Y]ghi b[ Yb`ni `VYcVUW`hYb`ž`k Ug`Ui Z`YZY`\_h]j Y  
HfU]b]b[ ga Yh`cXYb`i bX`X]Y`A`ch]j Uh]cb`XYf`5h`YhYb``]bXYi hYh`

< YfUi gZcfXYfi b[ Yb`i bX`J YfVYggYfi b[ Yb  
ZØf`ni \_ØbZh][ Y`J YfUbghU`hi b[ Yb

8]Y`GhØfi b[ `Xi fW`X]Y`6Yk ÀggYfi b[ gUb`U[ Y`U`h[ YnY][ hž`XUgg`Yg  
]b`XYf`C`f[ Ub]gUh]cb`gc`W`Yf`J YfUbghU`hi b[ Yb  
J YfVYggYfi b[ gd`chYbn]U`[ ]Vh`9]bY`gc`f[ Z`À`h][ Y`D`Ubi b[ ž`X]Y  
gc`W`Y`i bYfk UfhYhYb`GhØfi b[ Yb`VYfØW`\_g]W`h][ hž`k`ÀfY  
k ØbgW`Ybgk Yfh`J YfgW`]YXYbY`5bgÀhnY`\_ØbbhYb`Yfk`c[ Yb  
k YfXYb`ž`k ]Y`Yhk U`XYf`9]bgUhn`j`cb`hYa`dc`f`ÀfYb`6Uff]YfYb`cXYf  
Y]bY`YZY`\_h]j Y`NY]hd`Ubi b[ `ZØf`X]Y`Bi hni b[ `XYf  
6Yk ÀggYfi b[ gUb`U[ Yb`k`À`fYbX`XYf`K`Yhh\_Àa`dZY`"Gc`W`Y  
A`U»`bU`a`Yb`\_ØbbhYb`Y`ZYb`ž`X]Y`G]W`Yf`Y]h`XYf`5h`YhYb`ni  
[ Yk`À`f`Y]ghYb`i bX`g]W`Yfni`ghY`Yb`ž`XUgg`g]Y`]b`Y]bYf  
Ub[ Ya`YggYbYb`l`a`[ YVi b[ `UbhfYhYb`\_ØbbYb`

Ni XYa`\_ØbbhYb` : YYXVUW`\_fi bXYb`bUW`XYb`J YfUbghU`hi b[ Yb  
Y]b[ YZØ`fh`k`YfXYb`ž`i`a`XYb`C`f[ Ub]gUhc`fYb`i bX`9bhgW`Y]XYfb  
k`Yfh]`c`Y`9]bg]W`hYb`]b`X]Y`6YXØfZb]ggY`XYf`Gdc`fh`Yf`i bX`XYf  
J YfY]bY`ni`[ YVYb`"8Yf`5i`ghUi`gW`nk`]gW`Yb`XYb`j`YfgW`]YXYbYb  
6YhY`]][ hYb`\_ØbbhY`XUni`VY]hfU[ Yb`ž`\_ØbZh][ Y`K`YhhVYk`YfVY  
fY]Vi b[ g`cgYf`i bX`YfZc`[ fY]W`Yf`ni`[ YghU`hYb`

8YhU]`g

6Ygi W`Yb`G]Y`i`bg`Ui`Z`b`!U[ "XY