

B Yi Yg' ? Ud]hY`ZØf`K Y]a Uf. '8 cfa Yfc!  
; fi ddY`ØVYfb]a a h`Gc]VY`a Ubbg`< chY`

8 cfa Yfc`ØVYfb]a a h`XUg`Gc]VY`a Ubbg`< chY`]b`K Y]a Uf`ni a  
`J\`fYgk YW`gY`"; Yd`Ubh`g]bX`i a ZUggYbXY  
GUb]Yfi b[ gUfVY]hYb"

8]Y` , VYfbU`a Y`XYg`Gc]VY`a Ubbg`< chY`g`]b`K Y]a Uf`Xi fW`X]Y  
8 cfa Yfc!; fi ddY`k i fXY`U`g`VYXYi hYbXYf`GW`f]h`]b`XYf  
[ YgW`ÅZ`h]W`Yb`9I dUbg]cb`XYf`< chY`\_YhY`Ub[ Y\_ØbX][ h`'8]Y  
, VYfbU`a Y`YfZc`[ h`ni a` `J\`fYgk YW`gY`ž`k Ug`VYXYi hYh`XUgg`XUg  
< chY`a` ]h`gY]bYb`- \$`N]a a Yfb`ZØf`gYW`g`A cbUhY`[ YgW`cggYb  
k]fXž`i a` i a ZUb[ fY]W`Y`F`Ybcj`]Yfi b[ gUfVY]hYb`Xi fW`ni ZØ`fYb"  
N]Y`X]YgYf`A U» bU`a Yb`]gh`Ygž`XUg`< chY`ni`a` cXYfb]g]YfYb`i bX  
Ui ZX]Y`bYi YghYb`GhUbXUfXg`ni`Vf]b[ Ybž`k Ug`ZØf`X]Y` ; ÅghY`Y]bYb  
\_ca Zc`fhUV`YfYb`5i ZYbh`U`h`Yfk UfhYb`"Åggh"

8Yf`9][ YbhØa`Yf`i bX`æj`Yghc`f`\]bhYf`X]YgYa`Dfc`Y`\_h]gh`YfbYi h`X]Y  
8U`\`Y]a` ; fi ddYž`X]Y`VYfY]hg`a`]h`XYf`8 cfa Yfc!; fi ddY  
ni gUa`a`YbUfVY]hYh`'8]Yg`]gh`Y]b`k`Y]hYfYg`6Y]gd]Y`ZØf`X]Y  
ghfUhY`[ ]gW`Y`DUf`hbYf`gW`U`Z`h`nk`]gW`Yb`X]YgYb`VY]XYb  
I bhYfbY`a`Ybž`X]Y`XUfUi`ZUVn]Y`h`ž`X]Y`< chY`]bZfUghfi`\_hi`f`]b  
8Yi hgW`UbX`ni`j`YfVYggYfb`i bX`[ `Y]W`nY]h][ `bYi Y`A`Åf`\_hY`ni  
YfgW`]Y»Yb"

### GhfUhY[ ]gW`Y`6YXYi hi b[ `ZØf`K`Y]a Uf

K`Y]a Uf`k`]fX`XUg`YfghY`< chY`j`cb`8 cfa Yfc`]b`H\Øf]b[ Yb`i bX`XUg  
]bg[ YgUa`h`(+`< chY`XYf`?YhY`gY]b`"8Yf`GhUbXc`fh`\Uh`b]W`h`bi`f  
\]ghc`f]gW`Y`i bX`h`ci`f]gh]gW`Y`6YXYi hi b[ ž`gcbXYfb`V]YhY`h`Ui`W`  
Y]bY`Ui`g[ YnY]W`bYhY`J`Yf`\_Y`fgUbV]bXi b[ `i bX`æZfUghfi`\_hi`fž`k`Ug  
ZØf`< chY`VYhfY]VYf`j`cb`[ fc»Yf`6YXYi hi b[ `]gh`"A`]W`UY`!< Ufha`i`h`

6Yf[ YfžJ cfghUbX`XYf`8 cfa Yfc!; fi ddYžg]Y\h`b`K`Y]a Uf`Y]bYb  
]XYU`Yb`GhUbXcfh`K`Y]a Uf`]gh`b]W`h`bi`f`[ YgW`W`h`]W`i`bX  
hci`f]gh]gW`Y]b`Vcca`YbXYf`GhUbXcfh`5i`W`X]Y`@U[ Y`i`bX`X]Y  
\Yfj`cffU[ YbXY`ϑZfUghfi`\_hi`f`]a`<YfnYb`j`cb`8Yi`hgW`UbX`k`UfYb  
Ui`ggW`U[ [ YVYbX`Z0f`X]YgY`GhUXh"

8]YgY`5bg]W`hYb`k`YfXYb`Xi`fW`X`Yb`5i`Zg]W`hgfUhgj`cfg]hnYbXYb  
XYf`8 cfa Yfc!; fi ddYž6Yb`8U`\Y]a ž`k`Y]hYf`[ Ygh`Āf`\_h`9f`Āi`»YfhY  
g]W`YfZFYi`h`ØVYf`X]Y`:`cfhgW`f]hhY`XYf`[ Ya`Y]bgUa`Yb`9l`dUbg]cb`]b  
K`Y]a Uf`:`9g`ZFYi`h`a`]W`ž`XUgg`k`]f`Ua`GhUbXcfh`K`Y]a Uf`X]Y  
[ Ya`Y]bgUa`Y`9l`dUbg]cb`k`Y]hYf`j`cfUbVf]b[ Yb`\_0bbYb`" `8]Yg`nY][ h  
XUg`9b[ U[ Ya`Ybh`VY]XYf`l`bhYfbY`a`Ybž`XYb`GhUbXcfh`K`Y]a Uf`]b  
XYb`\_ca`a`YbXYb`ϑ\`fYb`ni`gh`Āf`\_Yb"

## 9l`dUbg]cb`]b`bYi`Y`A`Āf`\_hY

9]b`k`Y]hYfYg`Ui`ZfY[ YbXYg`9`Ya`Ybh`X]YgYf`,`VYfbU`a`Y`]gh`XUg  
N]Y`ž`V]g`9bXY`XYg`ϑ\`fYg`XfY]`bYi`Y`8Ygh]bUh]cbYb`]a`ϑ!`i`bX  
5i`g`UbX`ni`fYU`]g]YfYb`"79C`A`Ubi`Y`U`<U`a`Yf`\_`ĀfhYž`XUgg`X]Y  
D`Ubi`b[ `XUfUi`Z`UVn]Y`hž`XUg`Dcfhžc`c`X`Yf`; fi`ddY`Ui`Z`X]Y  
)`\$!`<`chY`g!`A`Uf`\_Y`ni`Yfk`Y]hYfb`"8]YgYg`J`cf`\UVYb`j`YfXYi`h`]W`h`X]Y  
5a`V]h]cbYb`XYf`8 cfa Yfc!; fi`ddYž]b`Y]bYa`ni`bY`a`YbX  
k`YhVYk`YfVg]bhYbg]j`Yb`A`Uf`\_h`i`»`ni`ZUggYb`i`bX`]`fY`F`Y]W`k`Y]hY  
ni`j`Yf[ f0»`Yfb"

8]Y`F`Ybcj`]Yfi`b[ `X`Yg`Gc]VY`a`Ubbg`<`chY`g`V]YhYh`X]Y`A`0[ `]W`\_Y]hž  
Y]b`UhhfU`\_h]j`Yg`8Yg][ b`i`bX`a`cXYfbY`5bbY`a`\_]W`\_Y]hYb`ni  
]bhY[ f]YfYbž`X]Y`XYb`6YX0fZb]ggYb`XYf`\Yi`h][ Yb`F`Y]gYbXYb  
[ YfYW`h`k`YfXYb`"8]Y`8 cfa Yfc!; fi`ddY`\`Uh`g]W`X`Yb`F`i`Z  
YfUfVY]hYhž`gh]j`c``Y`<`chY`g`Ubni`V]YhYbž`X]Y`gck`c`\`Z0f  
; YgW`Ā`ZhgfY]gYbXY`U`g`Ui`W`Z0f`Hci`f]ghYb`UbgdfYW`YbX`g]bX`"8]Y  
ϑj`Ygh]h]cbYb`]b`XUg`K`Y]a UfYf`<`chY`g]bX`HY]`X]YgYf`GhfUhY[ ]Yž  
i`a`X]Y`A`Uf`\_Y`k`Y]hYf`ni`gh`Āf`\_Yb"

8]Y`VYj`cfghY`YbXYb`F`Ybcj`]Yfi`b[ gUfVY]hYb`k`YfXYb`b]W`h`bi`f`X]Y  
E`i`U]h`Ā`h`XYg`l`bhYf`\_i`b`ZhgUb[ YV`chg]b`K`Y]a Uf`ghY][ Yfbž`gcbXYfb  
Ui`W`X]Y`A`0[ `]W`\_Y]hYb`XYf`VYfi`Z]W`Yb`i`bX`hci`f]gh]gW`Yb  
9fgW`Y]Y»i`b[ `Yf`\0\Yb`"A`]h`K`Y]a Ufž`XYggYb`GhUhi`g`U`g`\_i`hi`fY``Yg

9fVY`XYf`A YbgW\`Y]h`k Y]h\]b`UbYf\_Ubbh]ghž`k ]fX`X]Y`8cfa Yfc!  
; fi ddY`XUg`hci f]gh]gWY`5b[ YVch`XYf`GhUXh`Yfk Y]hYfb`i bX`bYi  
[ YghU`hYb"

## 9]b`6`]W\_`]b`X]Y`Ni`\_i`bZh

⊕g[ YgUa h`nY][ h`X]Y`, VYfbU\`a Y`XYg`Gc]VY`a Ubbg`<chY`g`]b  
K Y]a Ufž`XUgg`X]Y`8cfa Yfc!; fi ddY`j cb`gc`]XYb  
K UW\ghi a gd`ÀbYb`Ui g[ Y\`hi bX`g]W\`U\_hj]`XUfUi Zj cfVYfY]hYhž`]b  
bYi Y`A Àf`hY`Y]bni hfYhYb"8Yf": c`\_i g`Ui ZX]Y`GhUXh`K Y]a Uf`U`g  
ghfUhY [ ]gWYf`GhUbXcfhi bhYfghfY]W\`h`X]Y`5a V]h]cbYbž`b]W\`h`bi f  
X]Y`5bnU\`XYf`<chY`g`ni`Yf\`Ò\Ybž`gcbXYfb`Ui W\`Y]b`ei U`]hUhj  
\`cW\k Yfh][ Yg`5i ZYbh\`U`hgYf`YVb]g`ni` [ UfUbh]YfYbž`XUg`XYb  
9fk Ufhi b[ Yb`XYf`\`Yi h][ Yb`?i bXYb`Ybhgdf]W\`h`A ]h`X]YgYf  
, VYfbU\`a Y`ghY\`h`X]Y`8cfa Yfc!; fi ddY`Ub`XYf`GW\k Y`Y`ni`Y]bYa  
bYi Yb`?Ud]hY`]\`fYf`9fZc`[ g[ YgW\]W\`hY"

## 8]Y`6YXYi hi b[ `j cb`K Y]a Uf`U`g`N]Y`cfh

K Y]a Uf`]gh`b]W\`h`bi f`Y]b`\_i`hi fY`Yf`<chgdchž`gcbXYfb`Ui W\`Y]b  
NYbhfia`ZØf`6]Xi b[ `i bX`Hci f]ga i g]b`8Yi hgW\`UbX"8]Y`GhUXh  
\`Uh`Y]bY`fY]W\`Y`; YgW\]W\`hYž`X]Y`V]g]bg`%\*"⊕\`f\`i bXYfh  
ni fØW`fY]W\`hž`i bX`]gh`VY`Ubbh`ZØf`]\`fY`J YfV]bXi b[ `ni  
VYXYi hYbXYb`DYfg`Òb`]W\`\_Y]hYb`k ]Y`æ\`Ubb`K c`Z[ Ub[ `j cb`; cYh\Y  
i bX`: f]YXf]W\`GW\]`Yf"8]Y`I B9G7C!K Y`h\_i`hi fYfVYgh`hhYb`XYf  
GhUXh`n]Y\`Yb`À\`f]W\`nU\`fY]W\`Y`Hci f]ghYb`Ub`i bX`hfU[ Yb`ni f  
k ]fhgW\UZh`]W\`Yb`GhUV`]h`h`VY]"

8]Y`hci f]gh]gWY`⊕ZfUghfi`\_hi f`]b`K Y]a Uf`\`Uh`]b`XYb`Y`hnhYb`⊕\`fYb  
i a ZUb[ fY]W\`Y`⊕j Ygh]h]cbYb`YfZU\`fYb" A i gYbž`H\`YUhYf`i bX  
\`]ghcf]gWY`Gh`hhYb`V]YhYb`Y]bY`J ]Y`nU\`j cb`5\_hj] ]h`hYb`ZØf  
6Ygi W\`Yf`U`Yf`5`hYfg[ fi ddYb"8]YgY`9bhk ]W\_`i b[`\`Uh`XUg  
⊕hYfYggY`j cb`⊕j YghcfYb`k ]Y`XYf`8cfa Yfc!; fi ddY`[ Yk YW\_hž`X]Y  
]b`X]YgYf`Zcf]YfYbXYb`I a [ YVi b[ `]\`f`YfghYg`<chY`]\`b`H\`Øf]b[ Yb  
Yf`ØZbYh"

## 5`\_hi`Y`Y`9bhk ]W\_`i b[ Yb`]b`XYf`<chY`Yf]Y

8Yf<chY`a Uf\_h]b`8Yi hgW`UbX`nY][h`XYfnY]h`X] YfgY`HfYbXg"@Ui h  
XYa`8Yi hgW`Yb`<chY`j YfVUbX`f≡ 5Ł[ ]Vh`Yg`Y]bYb`Ub`U`hYbXYb  
5bg]Y[ `VY]`XYf`B UWX`ZFU[ `Y`bUWX``cW`k Yfh][ Yb`i bhYf\_ØbZhYb"8Yf  
: c\_i g`Y[ h`ni bY`a YbX`Ui Z`9f`YVb]g!`i bX`: fY]nY]h`chY`gž`X]Y  
UbgdfYWX`YbXY`5bbY`a` `]W`\_Y]hYb`i bX`Y]b`Y]bn][ Ufh][ Yg`5a`V]YbhY  
V]YhYb" `ϕ`Y]bYa` `gc`W`Yf`5ha`cgd`ÀfY``cZ`h`X]Y`8cfa`Yfc!; fi ddYž  
a`]h`XYa` `Gc]VY`a` Ubbg`<chY``]b`K`Y]a` Uf`9fZc`[ `ni` `UVYb"

GhU]gh]gW`[ YgY`Yb` `U`h`X]Y`<chY``Yf]Y`]b`8Yi hgW`UbX`]a` `U`f  
&\$&&`Y]b`ghUV]`Yg`K` UWX`ghi`a` `j`YfnY]W`bYhž`k`cVY]`X]Y`6Y`Y[ `i`b[  
Xi`fW`gW`b]h]W`VY]`\*`%`i` `U[ `fE`i`Y``Y.` `≡`5Ł"8]Yg`XYi`hYh`XUfUi`Z  
`bž`XUgg`hf`cm`[ `cVU`Yf`<YfUi`gZc`fXYfi`b[ Yb`k`]Y`XYf  
7CJ`≠!`%`!DUbXYa` ]Y`XUg`F`Y]gYj`Yf`U`h`Yb`ghUV]`V`Y]Vh`Gc`W`Y  
8UhYb`g]bX`Yfa`i`h][ YbX`ZØf`X]Y`8cfa`Yfc!; fi ddYž`X]Y`]`fY  
9l`dUbg]cb`]b`X]YgYb`XmbUa` ]gW`Yb`A`Uf`\_h`Zc`fhgYhnYb`a` ÒW`hY"

## 8]Y`F`c``Y`XYf`8U`\\`Y]a` `; fi ddY

8]Y`8U`\\`Y]a` `; fi ddY` `U`h`g]W` `U`g`j`Yf`Àgg`]W`Yf`ϕj`Yghc`f`i`bX  
; YgW`ÀZhg`dUf`hbYf`]b`XYf`<chY`VfUbW`Y`YhUV`]Yfh" `A`]h`Y]bYa` `: c\_i`g  
Ui`ZX]Y`9bhk` ]W`\_i`b[ `i`bX`F`Ybcj`]Yfi`b[ `j`cb`<chY`g`Vf]b[ `h`g]Y`b]W`h  
bi`f`?`Ud]hU`ž`gcbXYfb`Ui`W` `9l`dYfh]gY`]b`X]Y`Dfc`Y`\_hY`Y]b" `8]Y  
DUf`hbYfgW`UZ`h`a`]h`8cfa`Yfc`nY][ hž`XUgg`X]Y`; fi ddY`Ub`X]Y`Ni`\_i`bZh  
j`cb`K`Y]a` Uf`[ `Ui`Vhi`bX`VYfY]h]ghž`]b`X]Y`K`Y]hYfYbhk` ]W`\_i`b[ `XYf  
GhUX`h`ni` `]bj`Ygh]YfYb"

8]YgY`Ni`gUa`a`YbUfVY]h`k`]fX`Ui`W` `j`cb``c`\_U`Yb`Dc`h]`\_Yfb`i`bX  
K`]fhgW`UZ`hgj`YfhfYhYfb`d`cg]h]j` `k`U`f[ Ybca`a`Ybž`XU`g]Y`ni`g`À`h`]W`Y  
5fVY]hgd`À`h`nY`gW`UZZYb`i`bX`X]Y`5hhfU`\_h]j`]h`À`h`K`Y]a`Ufg`U`g  
F`Y]gYn]Y`Y`Yf`\`Ò`Yb`\_`Ubb" `K`Ybb`XUg`Gc]VY`a` Ubbg`<chY``bUWX`XYf  
F`Ybcj`]Yfi`b[ `k`]YXYf`Yf`ÒZbYh`k`]fXž`\_`Øb`bhY`Yg`a` Ò[ `]W`Yfk`Y]gY  
Ui`W` `bYi`Y`[ Ughf`cbca` ]gW`Y`i`bX`\_i` `hi`fY``Y`5b[ YV`chY`gW`UZZYbž  
X]Y`XYb`6Ygi`W`Yfb`Y]b`bcW`i`a` ZUggYbXYfYg`9f`YVb]g`V]YhYb"

## Ni`\_i`bZh`gUi`gg]W`hYb

8]Y`d`cg]h]j`Yb`5i`gg]W`hYb`ZØf`XUg`<chY``]b`K`Y]a`Uf`i`bX`X]Y  
8cfa`Yfc!; fi ddY`ghY`Yb`]a` `9]b`\_`Ub[ `a`]h`Y]bYa` `U``[ Ya`Y]bYb

HfYbX`j]b`XYf`6fUbWkYž`XYf`Ui Z`K UWkghi a `i bX`8]j Yfg]Z]n]Yfi b[  
UVn]Y`h"5b[ Yg]Wk hg`XYf`U\_hi Y`Yb`k ]fhgWk UZh`WkYb`bX]\_Uhc fYb  
i bX`XYf`B UWk ZfU[ Y`bUWk `ei U`hUh]j `cWk k Yfh][ Yf  
; UghZfYi bXgWk UZh`gWkY]bh`X]Y`9bhgWkY]Xi b[ ž`K Y]a Uf`U`g`GhUbXcfh  
ni `k Å`Ybž`[ i h`Xi fWkXUWk h`ni `gY]b" A ]h`XYf`[ Yd`UbhYb`9fÖZbi b[  
j cb`nk Y]`k Y]hYfYb`8Ygh]bUh]cbYbž`k ]Y`j cb`XYf`; YgWk ÅZhgzØ\fi b[  
Ub[ Y\_ØbX][ hž`k ]fX`XYi h`Wkž`XUgg`X]Y`8cfa Yfc!; fi ddY`Y`fY  
5a V]h]cbYbž`\fY`A Uf\_hdfÅgYbn`g][ b]Z]\_Ubh`Ui gni VUi Ybž  
k Y]hYfj YfZc`[ h`

8i fWk`X]Y`J YfV]bXi b[ `j cb`a cXYfbYf`5fWk]hY\_hi f`i bX`fY[ ]cbU`Yf  
?i `hi f`\_ØbbhY`XUg`bYi Y`<chY`ni `Y]bYa `5bn]Y\i b[ gdi b\_h`ZØf  
Hci f]ghYb`i bX`9]b\Y]a ]gWkY`[ `Y]WkYfa U» Yb`k YfXYb"

8YhU]`g

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