

8 ]Y`i \_fU]b]gW\ Y` : ]bUb nUi Zg]W\ hgVY\ ÒfXY  
a Y`XYh`6`cW\_]Yfi b[ `fi gg]gW\ Yf`? fmdhc!  
6 ÒfgYb`

8 ]Y` : ]bUb nØVYfk UW\i b[ gVY\ ÒfXY`XYf`i \_fU]bY`\ Uh`XYb  
Ni [ Ub[ `ni`Y]bYf`FY]\Y`j cb`Cb`]bY!`? fmdhc!5i ghUi gW\Yfb  
Y]b[ YgW\ fÀb\_hž`X]Y`j cb`Fi gg`UbX`Ui g`cdYf]YfYb"9]b][ Y`j cb  
XYb`Wc]b`< UbXY`gd`UhhZcfa Yb`UfVY]hYb`a ]hgUb\_h]cb]YfhYb  
fi gg]gW\Yb`6Ub\_Yb`ni gUa`a Ybž`hY]`hY`X]Y  
FY[ i`]Yfi b[ gVY\ ÒfXY`]b`Y]bYa`6Yf]W\h`a ]h`i \_fU]b]gW\Y  
: ]bUb nVY\ ÒfXYb`n]Y`Yb`Ui Zfi gg]gW\Y`? fmdhc!9i W\Ub[ Y!  
K YVg]hYg`i bX`K U`Yhg`UV`8Yf`GhUUh`]W\Y  
: ]bUb nØVYfk UW\i b[ gX]Ybgh`fG: A GŁž`Y]bY`9]b`Y]h`XYg  
i \_fU]b]gW\Yb` : ]bUb n[ Y`Y]a`X]YbghYgž`\Uh`Y]bY  
GcbXYfUi g[ UVY`\YfUi g[ Y[ YVYb`DfØZVYf]W\h`ØVYf`X]Y  
9f[ YVb]ggY`]\fYf`CdYfUh]cbYb`]a``>\f`&\$&`"BYVYb`]\fYb  
: f]YXYbgU\_h]j ]h`hYb`k ]Y`XYf`6Y\_Àa`dZ b[ `XYf`; Y`Xk`ÀgW\Y  
[ UV`X]Y`5[ Ybhi`f`VY\_Ubbhž`XUgg`g]Y`]a`F U\`a Yb`XYf  
`Ui ZYbXYb`6Ya`Ø\i b[ Yb`ni`XYb`JYfhY]X][ i b[ gVYa`Ø\i b[ Yb  
XYg`@UbXYg`VY][ YhfU[ Yb`\Uh`?cbZ]\_h`a ]h`Fi gg`UbX`" `b`XYa  
X]YgY`K cW\Y`/ Ua`d^Y``]d/

8]Y': ]bUbnØVYfk UW i b[ gVY\ ÒfXY`XYf`I \_fU]bY`\ Uh`XYb  
Ni [ Ub[ `ni `Y]bYf`F Y)\Y`j cb`C b`]bY! ? fmdhc!5i ghUi gW Yfb  
Y]b[ YgW fÀb\_hž`X]Y`j cb`F i gg`UbX`Ui g`cdYf]YfYb`"9]b[ Y  
j cb`XYb`Wc]b`< UbXY`gd`UhhZcfa Yb`UfVY]hYb`a ]h  
gUb\_h]cb]YfhYb`fi gg]gW Yb`6Ub\_Yb`ni gUa a Ybž`hY]`hY`X]Y  
F Y[ i `]Yfi b[ gVY\ ÒfXY`]b`Y]bYa `6Yf]W h`a ]h"

I \_fU]b]gW Y': ]bUbnVY\ ÒfXYb`n]Y`Yb`Ui Z  
fi gg]gW Y`? fmdhc!9I W U b[ Y!K YVg]hYg`i bX  
K U`Yhg`UV

8Yf`GhUUh]W Y': ]bUbnØVYfk UW i b[ gX]Ybgh`fG: A Glž`Y]bY`9]b\Y]h  
XYg`i \_fU]b]gW Yb': ]bUbn[ Y\Y]a X]YbghYgž`\ Uh`Y]bY  
GcbXYfUi g[ UVY`YfUi g[ Y[ YVYb`DfØZVYf]W h`ØVYf`X]Y  
9f[ YVb]ggY`]fYf`C dYfUh]cbYb`]a `š\`f`&\$&&"BYVYb`]fYb  
: f]YXYbgU\_h] ]h`hYb`k ]Y`XYf`6Y`\_Aa dZi b[ `XYf`; Y`Xk AgW Y`[ UV  
X]Y`5[ Ybhi f`VY\_Ubbhž`XUgg`g]Y`]a `FU`a Yb`XYf`Ui ZYbXYb  
6Ya Ø\i b[ Yb`ni `XYb`J YfhY]X][ i b[ gVYa Ø\i b[ Yb`XYg`@UbXYg  
VY][ YhfU[ Yb`\Uh`? cbZ]\_h`a ]h`Fi gg`UbX"

⇒ XYa `X]YgY`K cW Y`j YfØZYbh]W hYb`8c\_i a Ybh[ UV`XYf  
K UhW Xc[ `VY\_Ubbhž`XUgg`g]W`gY]bY`A ]hUfVY]hYf`a ]h? c`Y[ Yb`XYg  
A ]b]ghYf]i a g`ZØf`X][ ]hU`Y`HfUbgZcfa Uh]cb`i bX`ZØ`fYbXYb  
i \_fU]b]gW Yb`? fmdhc!9I dYfhYb`ni gUa a Yb[ YgW`cggYb`\ UVYb`  
; Ya Y]bgUa `k UfYb`g]Y`]b`XYf`@U[ Yž`fi gg]gW Y`? fmdhc!6ØfgYb`ni  
]XYbh]Z]n]YfYbž`X]Y`a ]h`fi gg]gW Yb': ]bUbn]bgh]hi hYb`]b`J YfV]bXi b[  
ghY`Ybž`X]Y`i bhYf`GUb\_h]cbYb`[ YghY`h`k i fXYbž`XUfi bhYf  
Fi gg`UbXg`[ fØ» hY`6Ub\_ž`GVYf"

8]Y`i \_fU]b]gW Y': ]bUbnUi Zg]W h`bUbbhY`k YXYf`X]Y`[ YbUi Y`5bnU`\`  
X]YgYf`D`UhhZcfa Yb`bcW`]fY`8ca U]bbUa Ybž`VYhcbhY`UVYfž`XUgg  
XUg`N]Y`XUf]b`VYghY`Yž`g]Y`j c`ghÀbX][ `ni `V`cW\_]YfYb"

⇒ Yb[ Yf`Ni gUa a YbUfVY]h`a ]h? fmdhc!8]YbghY]ghYfb`]b`XYf  
I \_fU]bY`i bX`]a `5i g`UbX`ZØ`fY`X]Y`G: A G`Ui » YfXYa `Y]bYb

A YW Ub]ga i g'ni f' 6`cW\_]Yfi b[ 'j cb'? fmdhc!; Y`XVÖfgYb`XYf  
Fi gg]gWYb': ÖXYfUh]cb`Y]b""9g']gh'i b\_`Ufž`cV`Yg`g]W`i a  
fi gg]gWY'; Y`XVÖfgYb`ja`5`[ Ya`Y]bYb`cXYf`i a`gc`WY`\UbXY`hž  
X]Y`a`h`XYf`FY[ ]Yfi b[ ]b`A`cg\_Ui` ]b`J`YfV]bXi b[ `ghY`\Yb"

8 Yf`ghUUh`]WY`8 ]Ybgh`Yf]bbYfhY`XUfUbž`XUgg`Yf`g]W`i`ja  
j`Yf[ Ub[ YbYb`>U`f`Ub`6]bUbWž`X]Y`k`Y`hk`Y]h[ fÖ» hY`? fmdhc!6ÖfgYž  
[ Yk`UbXh`i`bX`A`U»`bU`a`Yb`j`cf[ YgW`\U[ Yb`\UhYž`i`a`X]Y  
5[ [ fYgg]cb`XYf`Fi`gg]gWYb': ÖXYfUh]cb`Ui`Z`XYa`A`Uf`\_h`ZØf  
j]fhi`Y`Y`J`Yfa`Ö[ Ybgk`YfhY`Y]bni`X`A`a`Yb`i`bX`DYYf!hc!DYYf!  
HfUbgU\_`h]cbYb`ZØf`6Ybi`hnYf`j`YfgW`YXYbYf`fi`gg]gWYf`6Ub`Yb  
i`bX`ni`j`Yf`\]bXYfb`NU`\`i`b[ ggmgY`a`Y"

5bXYfY`d`fU\_`h]gWY`A`U»`bU`a`Yb`ja`Ni`gUa`a`Yb`\Ub[ `a`h`XYf  
GdYffi`b[ `fi`gg]gWYf`?`fmdhc!J`Yfa`Ö[ Ybgk`YfhY`i`bX`C`dYfUh]cbYb  
fi`gg]gWYf`9]bk`c`\bYf`k`i`fXYb`i`a`[ YgYhnh`ž`ZØ[ hY`X]Y`5[ Ybhi`f  
\]bni`ž`c`\bYb`Ä`\Yf`XUfUi`Z`Y]bni`[ Y`Yb""9g`\Uh`]b`X]YgYf  
5b[ Y`Y[ Yb`Y]h`a`h`XYb': ]bUbnVY`\ÖfXYb`j`cb`ZUgh%(`\$`@`Ä`bXYfb  
ni`gUa`a`Yb[ YUfVY]hYh`i`bX`[ `Y]W`nY]h][ `X]Y`J`YfV]bXi`b[ Yb`ni`XYb  
5i`Zg]W`hgVY`\ÖfXYb`]b`F`i`gg`UbX`i`bX`K`Y]»`fi`gg`UbX`UV[ YVfc`WYb"

8 ]Y`i`\_`fU]bY`VYhY`]`][`h`g]W`U`b`Y]bYf  
fY[ ]cbU`Yb`=b]h]Uh]j`Y`ni`f`J`Yf`\]bXYfi`b[ ]j`cb  
; Y`Xk`ÄgWY`Xi`fW`?`fmdhc

8 ]Y`G: A`G`ghY`hY`Ui`W`Z`Y`ghž`XUgg`g]Y`Ub`XYf`Ni`gUa`a`Yb`UfVY]h  
nk`]gWYb`XYf`i`\_`fU]bYž'; Ycf[ ]Yb`i`bX`A`c`XUk`]Yb`i`@`Ä`bXYfb`a`h  
Y]bYa`ghYh][`k`UW`gYbXYb`?`fmdhca`Uf`\_h`i`bX`6Yf[ VUi`gY`\_`hcf`  
VYhY`]`][`h`]ghž`X]Y`g]W`Ui`Z`X]Y`F`YXi`n]Yfi`b[ `XYf'; Y`Xk`ÄgWY`Xi`fW`  
X][ ]hU`Y`J`Yfa`Ö[ Ybgk`YfhY`\_`c`bnYbhf]Yfh"8`Ug`Dfc`Y`\_`h`k`]fX`a`h  
l`bhYfghØ`hni`b[ `XYf`fYU`]g]Yfh`I`B`i`bX`C`GN9"

8 Yf`6Yf]W`h`Z]Y`a`h`Y]bYf`9f`\_`Äfi`b[ `XYg`i`\_`fU]b]gWYb`A`]b]ghYfg  
ZØf`X][ ]hU`Y`HfUbgZcfa`Uh]cbž`A`m`\U]`c': YXcfcj`ž`ni`gUa`a`Yb`"  
**j ]Y`j`Yfgd`fYW`YbX`XUgg`XUg`@`UbX`X]Y`VYghY`?`fmdhc!**  
; Yf]W`hgVUf`\_`Y]h`XYf`K`Y`h`k`YfXYb`k`]fXž`gcVU`X`Yg`gY]bYb  
F`Y[ i`]Yfi`b[ gfU`a`Yb`ZØf`X]Y`6fUbW`Y`Z`Yfh][ [ YghY`h`\Uh"

⊕`XYb`YhnhYb`⊕\fYb`\Uh'g]W`X]Y`I`\_fU]bY`U`g`ZØ\`fYbX`VY]`XYf  
9]bZØ\`fi`b[`j`cb`?`fmdhc`]b`C`ghYi`fcdU`YhUV`]Yfhi`bX`U`\_nYdh]Yfhi`  
**? fmdhc!GdYbXYb`gY]h`6Y[ ]bb`XYf`fi`gg]gW`Yb`⊕j`Ug]cb``GY]b`  
DUf`Ua`Ybh`**VYghUbXYb`Y]b`;** YgYhn` , VYf`j`]fhi`Y`Y`  
J`Yfa`Ø[`Yb`gk`YfhY` ]a` ]`Yf[`Ub[`YbYb` : YVfi`Uf`i`bX`VYfY]hYh`  
Ybhgd`fYW`YbXY`Y`bXYfi`b[`Yb`XYf`5V[`UVYbcfXbi`b[` ]`cf`"**

*K`Ug`\`U`hYb`G]Y`XUj`cbž`XUgg`X]Y`I`\_fU]bY`fi`gg]gW`Y`?`fmdhc!`  
5i`ghUi`gW`d`UhhZcfa`Yb`V`cW\_]Yfh3`HY]`Yb`G]Y`=afY`  
;`YXUb`\_`Yb`ni`X]YgYa`H\Ya`U`]a``?`ca`a`YbhUfVYfY]W`i`bhYb`  
a`]h`"*

@i`Vca`]f`HUggYk`

@i`Vca`]f`HUggYj`]gh`Y]b`>ci`fbU`]gh`Ui`g`XYa`h`YW`b]gW`j`Yfg]YfhYb`C`ghYi`fcdUž`XYa`  
<`]hW`Ybg`N]hUh[`YZÄ`h.`G`W`f]ZhghY`Yf`ni`gY]bž`]gh`XUgž`k`Ug`]W`V]bž`i`bX`b]W`h`XUgž`  
k`Ug`]W`hi`Y`" `B`YVYb`?`fmdhc`ž`6`cW`W`U]b`i`bX`i`:]bhYW`g]bX`X]Y`]bhYfbUh]cbU`Y`Dc`]h`\_`  
i`bX`K`]fhgW`UZh`nk`Y]k`Y]hYfY`⊕gd]fUh]cbgei`Y`Y`b`"

6]`XbUWk Y]g. `G\i hYfghcW\_ž'D]l UVUmž'K ]\_]7ca a cbg

6Y`]YVhYfY`B UW f]W hYb

: U`g`8i `Yg`j YfdUggh`\ Ugh

f[ bWh]cbfXž'gž'XŁ'oj Uf`^gž'Z'g'1 `X"[ Yh9`Ya Ybhg6mHU[ BUa YfgŁQ\$Q'  
]Z'fK"[ Yh9`Ya Ybh6mXf]XŁŁ'fYhi fb/'g'1 `X"WfYUH9`Ya YbhfgŁ/'g"]X'1  
]X/'g"gfWl "\hhdg.#\cbbYWh"ZUWVcc\_"bYh#bSl G#gX\_"g. l ZVa `1 %/  
j Yfg]cb1 j ' "&"/Z'g"dUfYbhBcXY"]bgYfh6Y ZcfYf'gž'Z'gŁ/'qfKcW a Ybhž  
fgWf]dhfž'fZUWVcc\_! ^ggX\_fŁŁ/

8YhU]`g

6Ygi WXYb`G]Y`i bg`Ui Z.`\_fmdhc!bYk g"Uh