

6]hWc]b!<cX`!A i ghYf`XYi hYb`Ui Z`Y]bYb  
Nm\_`i gk YWx gY`>`\]b`ni a `6i ``Yba Uf\_h`\]b

8]Y`6`cW\_WxU]b!8UhYbUbU`mgYd`UhhZcfa` ; `UggbcXY`Ybh\Ø`hYž  
XUgg`Yg`Y]bY` UVfi dhY`?Ud]hU`fchUh]cb`[ Y[ YVYb`>`Uhž`X]Y`a` ]h  
XYa`Ni gUa`a YbVfi Wx`j`cb`: HL`VY[ Ubb` "'G]Y`ZØ[ hY`\]bni ž  
XUgg`7c]bg`j`cb`Ub[ Zf]gh][ Yb`ϕ\UVYfb`Ub`Y]bY`bYi Y  
?c\cfhY`j`cb`?Ai ZYfb`ØVYfhfU[ Yb`k`i`fXYb`"8]YgY`ŸbXYfi b[  
XYf`<cX`!A i ghYf`k`i`fXY`]b`ZfØ\YfYb`Nm\_`Yb`VYcVUWxhYhi bX  
\_ØbbhY`Y]b` K`YbXYdi b\_h`gY]bž`XYf`Ui Z`Y]bY`ŸbXYfi b[ `XYf  
; YnY]hYb`>`]bXYi hYh`ž`\]Y»`Yg`"8]Y`6]hWc]b!DfY]gY`\UVYb  
JYf`i`ghY`UV[ YgWxØhhY`hž`X]Y`Xi`fWx`X]Y`7: H7`j`Yfi`fgUWx`h  
k`i`fXYbž`X]Y`Ui Z`6]bUbWx`i`bX`X]Y`[ YZÀ`gWx`hYb`ϕ`hYfdc`!  
BUWx f]Wx`hYb`X]YgYf`K`cWx`Y`UVn]Y`h`"8]Y`A`Àf\_hY`VYZ]bXYb`g]Wx  
`YXcWx`j`cfYfgh]b`?cbgc`]X]Yfi b[ "'⇒MA`=`8]Y`U\_hi`Y`Y  
Ghfi`\_hi`f`XYf`>`6]hWc]b`8Ug`F`<C8@JYf`À`hb]g`XYi`hYh`Ui`Z  
Y]bY`VYa`Yf`\_Ybgk`Yfh`UVfi`dhY`?Ud]hU`fchUh]cb`/`Ua`d`^Y``]d`/

8]Y`6`cW\_WxU]b!8UhYbUbU`mgYd`UhhZcfa` ; `UggbcXY`Ybh\Ø`hYž`XUgg  
Yg`Y]bY` UVfi dhY`?Ud]hU`fchUh]cb`[ Y[ YVYb`>`Uhž`X]Y`a` ]h`XYa  
Ni gUa`a YbVfi Wx`j`cb`: HL`VY[ Ubb` "'G]Y`ZØ[ hY`\]bni ž`XUgg`7c]bg  
j`cb`Ub[ Zf]gh][ Yb`ϕ\UVYfb`Ub`Y]bY`bYi Y`?c\cfhY`j`cb`?Ai ZYfb  
ØVYfhfU[ Yb`k`i`fXYb`"

8]YgY`ŸbXYfi b[ `XYf`<cX`!A i ghYf`k`i`fXY`]b`ZfØ\YfYb`Nm\_`Yb  
VYcVUWxhYhi bX`\_ØbbhY`Y]b` K`YbXYdi b\_h`gY]bž`XYf`Ui Z`Y]bY  
ŸbXYfi b[ `XYf`; YnY]hYb`>`]bXYi hYh`ž`\]Y»`Yg`"

8]Y`6]hWc]b!DfY]gY`\UVYb`JYf`i`ghY`UV[ YgWxØhhY`hž`X]Y`Xi`fWx`X]Y  
7: H7`j`Yfi`fgUWx`h`k`i`fXYbž`X]Y`Ui Z`6]bUbWx`i`bX`X]Y`[ YZÀ`gWx`hYb  
ϕ`hYfdc`!BUWx f]Wx`hYb`X]YgYf`K`cWx`Y`UVn]Y`h`"8]Y`A`Àf\_hY`VYZ]bXYb  
g]Wx`YXcWx`j`cfYfgh]b`?cbgc`]X]Yfi b[ "

⇒7MA ⇒'8]Y`U\_hi Y`Y`Ghfi \_hi f`XYf` 6]hWc]b`8Ug`F < C 8 @J Yf\À`hb]g  
XYi hYh`Ui ZY]bY`VYa Yf\_Ybgk Yfh`UVfi dhY`? Ud]hU`fchUh]cb`\]bž`X]Y  
a ]h`XYa `Ni gUa a YbVfi W`j cb` : HL`VY[ Ubbž`k cVY]`7c]bg`j cb  
`Ub[ Zf]gh][ Yb`ϕ\UVYfb`Ui ZY]bY`bYi Y`?Ài ZYf[ fi ddY`ØVYfhfU[ Yb  
k i fXYb"

8]YgYf`ghUf\_Y`F ØW\_[ Ub[ `XYg`F < C 8 @J Yf\À`hb]ggYg`]gh]b`ZfØ\YfYb  
Nm\_Yb`V]g `d]Whk ]hhYf"Wca # ]6k , i \$85:

; `Ug\_bchYb`f4 [ `Ug\_bchYbŁ(`"5df)``&\$&'

## 6]hWc]b!Nm\_`i gj YfgW\]YVi b[

5a ``"5df]`ZØ\fhY`; `UggbcXY`Y]bY`F < C 8 @A Yhf]\_`Y]bž`X]Y`XUg  
J Yfa Ø[ Yb`j cb`@Ub[ nY]h]b\UVYfb`a ]h`Y]bYa `Nm\_`i g`f\*`A cbUhY`V]g  
&`J\fyŁ`a ]h`XYb`Øb[ ghYb`?i fnnY]h]b\UVYfb`f%`HU[ Y`V]g`  
A cbUhYŁ`j Yf[ `Y]W\h"

8Ug`J Yf\À`hb]g`n]Y`h`XUfUi Z`UVž`X]Y`F chUh]cb`nk ]gW\Yb`XYb  
Yi hfYa Yb`<cX`]b[ !i bX`J YfhY`]i b[ gdi b\_hYb`ni `a YggYbž`Yf\_`ÀfhY  
Yg"

8]Y`XYfnY]h][ Y`Ghfi \_hi fž`X]Y`ghUf\_`fØW\_`Ài Z][ `]ghž`XYi hYh`XUfUi Z  
\]bž`XUgg`6H7`j cb``Ub[ Zf]gh][ Yb`ϕ\UVYfb`ni `\_i fnZf]gh][ Yb  
ϕ\UVYfb`ØVYf[ Y\hž`Y]b`A i ghYfž`XUg`g]W`bUW`XYa `B]YXYf[ Ub[  
j cb` : HL`VYgW`Yi b][ hY"

8UfØVYf`\]bUi g`k i fXY`Ui W`XUg`J Yf\À`hb]g`j cb`A Uf\_hk Yfh`ni  
fYU`]g]YfhYa `K Yfh`fA J F J Ł`UbU`mg]Yfh`8]Yg`k ]fX`j Yfk YbXYhž`i a  
Y]b`U[ [ fY[ ]YfhYg`b]W\h`fYU`]g]YfhYg`; Yk ]bba i `h`d`]\_Uhc`f`ni  
a YggYbž`XUg`]bbYf\U`V`XYg`[ Y\U`hYb`k ]fX`Wc]b`]YZYfb"

8]Y`A Yhf]\_`]Y[ h`XYfnY]h`VY]`%ž( ž` k Ug`Y\Yf`Y]bYf`9f`c`i b[ gd\UgY  
Ybhgd]W\h ž`gc`; `UggbcXY`"9]b`5WV a i `Uh]cb`HfYbX`GWc`fY`XYi hYh  
Ui W`XUfUi Z`\]bž`XUgg`g]W`X]Y`A Af\_hY`]b`Y]bYf`, VYf[ Ub[ gd\UgY  
XYf`9f`c`i b[ `VYZ]bXYb"

9]bY`⇒]ei ]X`Gi dd`m`BYh`Dc]g]h]cb`7\Ub[ Y!A Yhf]\_`k i fXY

j Yfk YbXYhzi a `XYb`BYhncZi gg'j cb`7c]bg'ni `i bX`j cb`K U`Yhg'a ]h  
k Yb][ `V]g`[ Uf`\_Y]bYf`5i g[ UVYb\]ghcf]Y`ni `a YggYb""8]YgYf`ghY][ h  
i a ` `\*"\$6H7`dfc`A cbUhž`k Ug`XUfUi Z`\]bXYi hYhž`XUgg`XUg  
J YfhfUi Yb`]b`XYb`J Yfa Ò[ Yb gk Yfh`ghY][ h"

8]Yg`gh]a a h'a ]hi bgYfYb`ZfØ\YfYb`6YcVUW`hi b[ Yb`]b`6Yni [ `Ui Z  
X]Y`<C 8@Yf`ØVYfY]b`i bX``]YZf`h`ni g`Āh`n`]W`X`Y`6Yk Y]gY`ZØf`Y]b  
Ub\U`hYbXYg`J YfhfUi Yb`]b`X]Y`A Uf`\_hgh]a a i b[ `hf`ch`n`XYg  
<]bhYf[ fi bXg`XYg`fY[ i `Uhc`f]gW`X`Yb`8fi W`g"

## 6H7!DfY]gUi gV`]W\_

8]Y`6]hWc]b!DfY]gY`g]bX`Ub`X]YgYa `HU[ `i a `&ž+`i `i [ Ygh]Y[ Yb`i bX  
YffY]W`hYb`ni a `NY]hdi b`\_h`XYg`J YfZUggYbg`X]YgYg`5fh]\_Y`g`&, "\* &-  
~`"G]Y`g]bX`Ui ZY]b`K cW`X`Yb`cW`ni fØW\_[ Y`\_Y`f`h`i bX`\UVYb`U`X]Y  
bY[ Uh]j Yb`B UW`f]W`hYb`i bX`XYb`fY[ i `Uhc`f]gW`X`Yb`8fi W\_  
UV[ YgW`ØhhY`h"

8 UfØVYf`\]bUi g]gh`XYf`5b[ gh!`i bX`; ]Yf!`X`YI `j cb`6]hWc]b`]b  
; ]Yf `UV[ Yfi hgW`hž`k Ug`XUfUi Z`\]bXYi hYhž`XUgg`Y]bY`?c`ffY`\_hi`f  
VYj`c`f`ghY`Yb`\_Øbb`hY"

6]hWc]b`: YUf`UbX`; fYX`X`X`YI`]gh`\*`&` `; ]Yf  
5\_hi Y`Yf`DfY]g.`&, "&%%`~`d]W`h`k ]hhYf"W`c`a`#`5`\*`gZi`@L`nk

`6]hWc]b`5b[ gh!`i bX`; ]Yf!`X`YI`f4`6]hWc]b: YUfŁ(`"5df]`&\$&'

6H7`]gh]a `j Yf[ Ub[ YbYb`A cbUh`XYfnY]hi a `&, `i `i [ Ygh]Y[ Ybž  
V`Y]Vh`Y`X`c`W`), ž) `i `i bhYf`gY]bYa `5`nY]h`c`W`j cb`\*`- "\$\$\$`~`i]a  
Bcj Ya VYf`&\$&%"

...

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