

: 7`I fVUf`V`Y]Vh`i b[ YgWk`U[ Yb.`8f]hhYf  
G]Y[ `]a `?fY]g`][ U!5!8i Y`

FY]b\UfXh` \$' -/g`9`Zi bX`XYf: 7`I fVUf`ZY]Yfb`]a `?fY]g`][ U  
5`gdUbbYbXY`G]Y[ Y``Fch!K`Y]gg`?cV`Ybn`=a`]hghUf\_Ya`+.\$  
[ Y[ Yb`J`U``YbXUf"

Jcb`K`]Z]YX`N]`g

&)"5i [ i gh&\$&(ž%-.%\$`I` \f

]

8Yf: 7`I fVUf`ffchY`<cgybL]b`5b[ f]Zg`Ui bY` `X]Y`I fVUfYf  
[ Yk`UbbYb`XUg`?fY]g`][ U!5!8i Y``[ Y[ Yb`X]Y`G; `5i [ gh`a`]h`&.`\$`i`bX  
g]bX`bYVYb`XYf`FY]b\UfXhg`9`Z`XUg`Y]bn][ Y`HYUa` `a`]h`XfY]`G]Y[ Yb  
Ui`g`XfY]`Gd]Y`Yb": chc.`:Ōf[ `B]YVYf[ U`

=a`JYf`Ui`ZXYf`U`\_hi`Y``Yb`GU]gcb`XYf: i`»`VU`!`?fY]g`][ U`5(`nY][ h  
g]Wk`Y]bY`\_`UfY`8ca`]bUbn`XYf`VY]XYb`A`UbbgWk`UZhYb`FY]b\UfXhg  
9`Zi`bX`XYg: 7`I fVUf``K`À`fYbX`X]Y`5i`ZghY][ Yf`i`bhYf`@Y]hi`b[ `j`cb  
FY]b\UfXh`k`Y]hYf\]b`i`b[ YgWk`U[ Yb`g]bXž`d`f`À`gYb]h]Yfh`g]Wk`Ui`Wk`X]Y  
FYgYfj`Y`j`cb`F`ch!K`Y]gg`?cV`Ybn`U`g`Y]b`Yfbgmi`bY`a`YbXYf  
H]hY`Ub`k`À`fhYf``B`UWk`Y]bYf`Ub`Z`Ab[ `]Wk`Yb`B]YXYf`U[ Y`ghY``hYb`g]Y  
]\fY: cfa` `a`]h`VYY]bXfi`W`YbXYb`G]Y[ Yb`i`bhYf`6Yk`Y]g"

=bgVYgcbXYfY`XYf`+.`\$!G]Y[ `[ Y[ Yb`XYb`G7`J`U``YbXUf`i`bhYfa`Ui`Yfh  
X]Y`5a`V]h]cbYb`XYf`?cV`YbnYf``6YfY]hg`]a` `j`cf`Yf][ Yb`Gd]Y``\`UhYb  
g]Y`X]Y`G; `B`ŌfhYfg\Ui`gYb`,`.\$`VYg]Y[ hž`k`cXi`fWk`g]Y`g]Wk`gWk`bY``  
Ui`g`XYf`i`bUb[ YbY`a`Yb`G]hi`Uh]cb`XYf`5i`ZhU`\_hb]YXYf`U[ Y`[ Y[ Yb  
XYb: 7`A`YhhYfb]Wk` `=VYZFY]hYb``8]YgY`@Y]ghi`b[ Yb`a`UWk`Yb`g]Y`ni  
Y]bYa`XYf`\_`UfYb: Uj`cf]hYb`]b`XYf`@[ U"

# 9fZc`[ fY]Wx Y`5i ZghY][ Yf

8cWx`b]Wx`h`bi`f`X]Y`F`ch`K`Y]»Yb`\_ca`a`Yb`[`i`h`]b`:`U`fh`"8Yf`:`7  
l`fVUf`[`gh`gY]h`XYa``GU]gcb`ghUf`h`V`Y`b`ZU`"g`Ui`Z`Y]b`Yf`9fZc`[`gk`Y`"Y`"  
BUWx`Y]b`Ya``&.`\$!9fZc`[`[`Y[`Yb`X]Y`G;``5i`[`gh`"UVYb`g]Y`bi`b`XfY]  
G]Y[`Y`Ui`g`XfY]`Gd]Y`Yb`Y]b[`YZU`f`Yb`i`b`X`nY][`Yb`ž`XUgg`g]Y`]b`X]YgYf`  
GYf]Y`Yfb`gh`UZh`a`]hni`gd]Y`Yb`[`YXYb`\_Yb`"≠fY`ghUf`\_Y`@Y]ghi`b[  
V]g`Ub[`X`Yi`h`Y`h`X`Uf`Ui`Z`"b`ž`XUgg`g]Y`]b`X`Yf`@[`U`Y]b`Y`k`]Wx`h][`Y`F`c`"Y`  
gd]Y`Yb`k`Yf`XYb`"

F`Y]b`Uf`X`hg`9`Z`"U`h`g]Wx`X`i`f`Wx`X]Y`V]g`Yf][`Yb`Gd]Y`Y`U`g`Ai`»Yf`gh`  
ghUV]`i`b`X`[`i`h`Ui`Z[`YghY`"h`[`YnY][`h`"≠XYg`A`]h[`]YX`XYg`HYUa`g`  
gWx`Y]b`h`[`i`h`]b`h`Y[`f]Yf`h`i`b`X`V`Y`f`Y]h`ž[`Y[`b`Yf]gWx`Y`A`Ubb`gWx`UZh`Yb`j`cf`  
[`fc`»Y`<Yf`Ui`gZc`f`XYfi`b[`Yb`ni`"ghY`"Yb`"9g`V`Y]V`h`UV`ni`k`Uf`h`Yb`ž`k`]Y`  
g]Wx`X]Y`GU]gcb`k`Y]h`Y`f`Y`b`h`k`]W`\_Y`b`k`]f`X`ž`UVYf`X`Yf`8i`f`Wx`a`Uf`gWx`X`Yf`  
VY]X`Yb`HYUa`g`\_Ob`bhY`ZØf`a`Ub`Wx`Y`Y]b`Y`,"VYff`Ug`Wx`i`b[`gY]b`"

9]b`k`Y]h`Y`f`Y`g`gd`Ubb`Yb`XYg`8i`Y`"Z`U`b`X`nk`]gWx`Yb`X`Yf`G;  
F`Y`b`g`#Gd`Um`i`b`X`X`Yf`G;``B`Ø`f`h`Y`fg`U`i`g`Yb`#`X`Yb`U`i`g`Yb`gh`U`h`"  
<]Yf`VY]Y`b`X`Y`h`Y`X]Y`6Y[`Y[`bi`b[`a`]h`Y]b`Ya``%`%I`b`Yb`hg`Wx]Y`X`Yb`ž`  
b`UWx`X`Y`a``F`Y`b`g`ni`b`Å`Wx`gh`Xi`f`Wx`Y]b`Yb`Zf`Ø`Yb`Hf`Y`Z`Y`f`j`cb`  
5`Yi`Ub`X`Yf`5i`Yf`]b`:`Ø`f`i`b[`[`Y[`Ub[`Yb`k`Uf`":`Ø`b`Z`A`]bi`h`Yb`j`cf`X`Y`a`  
9b`X`Y`\_cb`bh`Yb`X]Y`\_ca`V]b]Yf`h`Yb`?f`Å`ZhY`Y`X`c`Wx`X`Yb`5i`g[`Y]Wx`  
Y`fn]Y`Yb`ž`k`Ug`X]Y`9b`h`h`Å`g`Wx`i`b[`Ø`V`Yf`X]Y`j`Y`fd`Ug`gh`Yb`  
A`Ø[`]Wx`\_Y]h`Yb`VY]X`Yb`Gd]Y`Yfb`j`cb`F`Y`b`g`j`Yf`gh`Åf`\_Yb`X`Øf`ZhY`"

## ? Ua dZ`i`a`Di`b`\_hY`i`b`X`HUVY`Y`b`d`U`hn

8]Y`Y`f`gh`Yb`X`fY]`Gd]Y`h`U[`Y`X`Yf`?`fY]g][`U`5(`nY][`Yb`X`Yi`h]Wx`ž`XUgg`  
g]Wx`X]Y`HYUa`g`"Å`f`h`Yf`U`g`Y`ni`j`cf`i`a`X]Y`Di`b`\_hY`V`Y`a`Ø`Y`b`"  
≠XYf`G]Y[`n`Å`"h`i`b`X`V`f]b[`h`b]Wx`h`bi`f`Di`b`\_hY`ž`gcb`XYfb`Ui`Wx`  
GY`V`ghj`Y`fhf`Ui`Yb`ZØf`X]Y`\_ca`a`Yb`X`Yb`Gd]Y`Y`"8Yb`Y]bn`Y`b`Yb`  
A`Ubb`gWx`UZh`Yb`ghY`h`bc`Wx`Y]b`Y`Ub[`Y`GU]gcb`V`Y`j`cf`ž]b`X`Yf`Y`X`Yf`  
:`Y`Y`f`Y`b`hg`Wx`Y]X`Yb`X`g`Y]b`\_Ob`bhY`"8]Y`HYUa`g`a`Øgg`Yb`g]Wx`Ui`Z`  
Y]b`Y`ghY]b][`Y`i`b`X`Y`f`Ui`gZc`f`XYfb`XY`F`Y]g]Y`Y]b`ghY`"Yb`"

8`Ug`HYa`dc`i`b`X`X]Y`≠h`Y`bg]h`h`X`Yf`Gd]Y`Y`ghY][`Yb`ž`k`Å`f`Y`b`X`  
`Ui`h`ghUf`\_Y`:`Ub[`Yg`Å`b[`Y`i`b`X`"†`V`Y`b`X`Y`Ni`g`Wx`Ui`Yf`X]Y`G`h`U`X]Y`b`

Z0`Yb" `b`Y]bYa `l a ZY`Xž`XUg`j cb`?cb\_i ffYbn\_Ua dZi bX  
HYUa [ Y]gh[ YdfÄ[ h]ghž`k ]fX`Yg`X]Y`5i Z[ UVY`XYf`HfU]bYf`gY]bž`]\fY  
Gd]Y`Yf`ni `a ch]j ]YfYb`i bX`Ui Z`XUg`K YgYbh`]W`Y`ni ` \_cbnYbhf]YfYb"  
8Yf`a YbhU`Y` : c\_i g`k ]fX`YVYbgc`k ]W`h][ `gY]b`k ]Y`X]Y`hYW`b]gW`Y  
5i gZ0`fi b[ `Ui Z`XYa `D`Uhm"

: Øf`X]Y` : Ubg`i bX`5b`Äb[ Yf`VY]XYf`GY]hYb` ]gh`X]Y`XYfnY]h][ Y`D`UgY  
Y]bY`Ui ZFY[ YbXY`NY]h"8 ]Y`Y]XYbgW`UZh`]W`Y`l bhYfghØhni b[  
k Ä`fYbX`XYf`Gd]Y`Y`gc f[ h`ZØf`Y]bY`VYgcbXYfY`5ha `cgd`ÄfYž`X]Y`ZØf  
U`Y`6YhY]`][ hYb`i bj Yf[ Ygg`]W` ]gh"8 ]Y`5i ZFY[ i b[ `i a `X]Y  
@[ UdUfh]Yb`nY][ h`XUg`9b[ U[ Ya Ybhi bX`X]Y`HfYi Yž`X]Y`X]Y  
Ni gW`Ui Yf`]\fYb`A UbbgW`UZhYb`Ybh[ Y[ YbVf]b[ Yb"l bX`k Ä`fYbX  
X]Y`@[ U`Zc fhgW`fY]hYhž`V`Y]Vh`ni `cZYbž`XUgg`X]Y`HYUa `g`]\fY` : cfa  
VY`Ui dhYb`i bX`XYb`Ni gW`Ui Yfb`k Y]hYf`]\b`gdUbbYbXY`Gd]Y`Y  
V]YhYb"

## 9]b`gdUbbYbXYf`K Yhh\_Ua dZ

8Yf`?Ua dZi a `XYb`5i Zgh]Y[ `V`Y]Vh`gdUbbYbXž`i bX`X]Y`@]ghi b[ Yb  
XYf`V]g`Yf][ Yb`@[ Ugd]Y`Y`ghY`Yb`c`Y`5bZcfXYfi b[ Yb`Ub`U`Y  
HY]`bY`a Yf" `A ]h`F Y]b`UfXhg`9`Zi bX`XYa ` : 7`l fVUf`Ub`XYf`Gd]hY  
XYf`HUVY`Y`k ]fX`X]Y`@[ U`Y]b`Y]Y`» Yg`DZUghYfž`Ui Z`XYa `Y`XYf`Di b`h  
ØVYf`XYb`9fZc` [ `YbhgW`Y]XYb`\_ØbbhY" `Gd]Y`Y`X]YgYf`5fhVf]b[ Yb  
X]Y`VYghYb`Gd]Y`Yf`Ubg`@]W`hi bX`hfU[ Yb`XUni `VY]ž`X]Y`HU`YbhY`XYf  
FY[ ]cb`ni `ZØfXYfb"8 ]Y`9bhk ]W`\_i b[ Yb`]b`XYb`bÄW`ghYb`K cW`Yb  
\_ØbbhYb`YbhgW`Y]XYbX`XUZØf`gY]bž`k Yf`Ua `9bXY`U`g`G]Y[ Yf  
XUghY`h"

## 8 ]Y`9bhk ]W`\_i b[ `XYf`? fY]g`][ U`5(

8 ]Y` : i » VU`!`?fY]g`][ U`5( `VYghY`h`Ui g`a Y`fYfYb`A UbbgW`UZhYbž  
X]Y`]b`Y]bYa `gdUbbYbXYb`K YhhVYk YfV` [ Y[ YbY]bUbXYf`UbhfYhYb"  
< ]ghc f]gW`VYhfUW`hYh` [ ]Vh`Yg`]b`X]YgYf`@[ U`cZh`Y]bY`J ]Y`nU`j`cb  
, VYffUgW`i b[ Yb" `HYUa gž`X]Y`ni `6Y[ ]bb`XYf`GU]gcb`U`g` : Uj`cf]hYb  
[ Y`hYbž`\_ØbbYb`gW`bY` ]bg`GhfUi W`Y`b`\_ca`a Ybž`k Ä`fYbX  
5i » YbgY]hYf`g]W`dfca ]bYbh`]b`GnYbY`gYhYb"8 ]Y`U`hi Y`Y`GU]gcb  
nY][ h]g]W`ž`k ]Y`]b`j ]Y`Yb`j`cf`Yf][ Yb`Ä`fYbž`k ]Y`XYf`gY`f  
Ui g[ Y[ `]W`Yb`i bX`gdUbbYbX"

8]Y`@[ U`]gh`b]W`h`bi`f`Y]b`C`fh`Z0f`K`Y`h`\_`A`a`d`Z`Y`z`g`c`b`X`Y`f`b`U`i`W`X`Y`]b`  
Gd]Y[ Y``c`\_`U`Y`f`i` ; Ya`Y]bg`W`U`Z`h`Y`b`z`]b`X`Ya` `g]W`X`H`U`Y`b`h`Y`Y`b`h`k` ]W`\_`Y`b`  
i`b`X`i` : f`Y`i` b`X`g`W`U`Z`h`Y`b`Y`b`h`g`h`Y`Y`b`"8]Y`i` : Ub[ Ya`Y]b`X`Y`k`\_`A`W`g`h`  
\_`c`b`h]bi` ]Y`f`]W`z`i`b`X`X`Y`i` b`h`Y`f`g`h`0`h`ni`b[ `j`c`b``c`\_`U`Y`b`i` b`h`Y`f`b`Y`a`Y`b`  
gd]Y`h`Y]b`Y`Y`b`h`g`W`Y]X`Y`b`X`Y`F`c``Y``8]Y`g`Y`J`Y`f`V]b`X`i`b[ Y`b`k` ]f`\_`Y`b`g]W`  
d`c`g]h`j` `U`i`Z`X`U`g`H`Y`U`a` `i`b`X`g`Y]b`Y`9`b`h`k` ]W`\_`i`b[ `U`i`g`"

## 5`\_`hi`Y``Y`G`h`U`h]g`h]\_`Y`b`X`Y`f`G`U]g`c`b`

⇒`X`Y`b`Y`f`g`h`Y`b`X`f`Y]G`d]Y`h`U[ Y`b`X`Y`f``U`i`Z`Y`b`X`Y`b`G`U]g`c`b`\_`U`h`i`g]W`  
[ Y`n`Y][ h`z`X`U`g`g`V`Y`g`h]a`a`h`Y`H`Y`U`a`g`V`Y`g`c`b`X`Y`f`g`h`U`f`\_`U`i`Z`g`d]Y`Y`b``8`Y`f`  
: 7`i`f`V`U`f`i`b`X`F`Y]b`U`f`X`h`g`9`Z`g]b`X`a` ]h`Y`k`Y`]g`X`f`Y]G`Y[ Y`b`]b`X`f`Y]`  
G`d]Y`Y`b`Z`0`f`Y`b`X``⇒`f`Y`H`c`f`j`Y`f`\_`A`h`b]g`g`Y`g`d`f`Y`W`Y`b`6`A`b`X`Y`0`V`Y`f`X`Y]`  
C`Z`Y`b`g]j`\_`f`U`Z`"K`\_`A`f`Y`b`X`i`f`V`U`f`Y]b`Y` ; Y`g`U`a`h`n`U`\_`j`c`b`\*`  
[ Y`g`W`c`g`g`Y`b`Y`b`H`c`f`Y`b`V`Y]`&` ; Y[ Y`b`h`c`f`Y`b`U`i`Z`k`Y]g`h`z`]a`d`c`b]Y`f`h`  
F`Y]b`U`f`X`h`g`9`Z`a` ]h`-`[ Y`g`W`c`g`g`Y`b`Y`b`H`c`f`Y`b`i`b`X`%` ; Y[ Y`b`h`c`f``8]Y`g`Y`  
N`U`\_`Y`b`j`Y`f`X`Y`i`h`]W`Y`b`b]W`h`b`i`f`X`Y]9`Z`n]Y`b`n`]a` `5`b[ f]Z`z`g`c`b`X`Y`f`b`  
U`i`W`X`Y`G`h`U`V]`]h`A`h`]b`X`Y`f`8`Y`Z`Y`b`g]j`Y`"

⇒`a` ; Y[ Y`b`g`U`h`X`U`n`i`Y`X`Y`h`X`Y`F`Y`g`Y`f`j`Y`j`c`b`F`c`h`K`Y]g`g`?`c`V`Y`b`n`U`b`  
Y]b`Y`a` `g`W`k`U`W`Y`b`G`h`U`f`h`z`c`V`k`c`\_`g]Y`U`g` : U`j`c`f]h[ U`h`Y`b``B`U`W`X`Y`f`  
,`V`Y`f`f`U`g`W`i`b[ g`b]Y`X`Y`f`U[ Y`[ Y[ Y`b`i` : 7`A`Y`h`Y`f`b]W`X`\_`U`h`i`g]W`X`U`g`  
H`Y`U`a` `X`Y`i`h`]W`X`j`Y`f`V`Y`g`g`Y`f`h``8]Y`V`Y]X`Y`b`Z`c`[ Y`b`X`Y`b`G`d]Y`Y`n`Y][ Y`b`z`  
X`U`g`g`X]Y`A`U`b`b`g`W`U`Z`h]b`X`Y`f`@`U[ Y`]g`h`z`g]W`X`g`W`b`Y``U`b`n`i`d`U`g`g`Y`b`i`b`X`  
g`h`U`f`\_`n`i`f`0`W`\_`n`i`\_`c`a`a`Y`b`"

## 9]b`V`]W`\_`Y`]b`X`Y]Y``c`\_`U`Y` : i`»`V`U``\_`i`h`i`f`

8]Y`i` : i`»`V`U``!`?`f`Y]g`][ U`5`(`]g`h`i`a`Y`f`U`g`b`i`f`Y]b`Y`  
G`d`c`f`h`j`Y`f`U`b`g`h`U`h`i`b[ /`g]Y`]g`h`h]Y`Z]b`X`Y`f`?`i`h`i`f`X`Y`f`F`Y[ ]c`b`  
j`Y`f`k`i`f`n`Y`h``8]Y`G`d]Y`Y`n]Y`Y`b`n`U`\_`f`Y]W`X`Y`N`i`g`W`U`i`Y`f`U`b`z`X`U`f`i`b`h`Y`f`  
: U`a`j`]Y`b`z`i` : f`Y`i`b`X`Y`i`b`X`h`f`Y`i`Y`5`b`\_`A`b[ Y`f``8]Y`5`h`a`c`g`d`\_`A`f`Y`i`b`X`Y`b`  
G`h`U`X]Y`b`]g`h`c`Z`h`Y`V`\_`U`Z`h`i`b`X`j`c`b` ; Y`g`Y``][ \_`Y]h[ Y`d`f`A`[ h``8]Y``c`\_`U`Y`  
i`b`h`Y`f`g`h`0`h`ni`b[ `n`Y][ h`i`g]W`X`]b`X`Y`b`n`U`\_`f`Y]W`X`Y`b` : Ub`W`i`V`g`z`X]Y`b]W`X`h`  
b`i`f`X`Y]G`d]Y`Y`V`Y`g`i`W`X`Y`b`z`g`c`b`X`Y`f`b`U`i`W`X`Y]G`d]Y`Y`f`X`i`f`W`  
j`Y`f`g`W`]Y`X`Y`b`Y`5`\_`h]c`b`Y`b`i`b`X`J`Y`f`U`b`g`h`U`h`i`b[ Y`b`i`b`h`Y`f`g`h`0`h`n`Y`b`"

N`i`X`Y`a` `g]b`X`X`Y`J`Y`f`Y]b`Y`b]W`X`h`b`i`f`G`d`c`f`h`Y]b`f]W`X`h`i`b[ Y`b`z`g`c`b`X`Y`f`b`

Ui Wk'gcn]U`Y' bchYbdi b\_hYž'X]Y'k ]Wk]h[ Y'Fc`Yb']b'XYf  
; Ya Y]bgWkUZhi'gd]Y'Yb" J YfY]bgj YfUbgH`hi b[ Yb'ZØfXYfb'XYb  
; Ya Y]bgWkUZhg]bb'i bX'ghÅf\_Yb'X]Y'6]bXi b[ Yb'nk ]gWkYb'XYb  
A ]h[ `]YXYfb'i bX'XYf'i a [ YVi b[ "

< YfUi gZcfXYfi b[ Yb'i bX'7\UbWk b'ZØf'X]Y  
A UbbgWkUZhYb

8]Y'A UbbgWkUZhYb'XYf'fY]g`][ U'5( 'gY\Yb'g]Wk'b]Wk'h'bi f  
gdcfh]WkYb'<YfUi gZcfXYfi b[ Yb'[ Y[ YbØVYfž'gcbXYfb'Ui Wk  
Z]bUbn]Y`Yb'i bX'cf[ Ub]gUhc]f]gWkYb"GdcbgcfYb'i bX'c\_U`Y  
l bhYfghØhni b[ gU\_h]cbYb'g]bX'YbHgWkY]XYbXž'i a `X]Y  
5i Zk YbXi b[ Yb'ZØf'HfU]b]b[ ž'5i gfØghi b[ 'i bX'FY]gYb'ni 'XYW\_Yb"  
K Å\fybX'Y]b][ Y'HYUa g'ØVYf'gc`XY'GdcbgcfYb'j YfZØ[ Ybž'\UVYb  
UbXYfY'GWk k ]Yf][ \_Y]hYbž']\fy'Dfc\_Y'hY'ni 'Z]bUbn]YfYb"

8]YgY'<YfUi gZcfXYfi b[ Yb'\_ØbbYb'YXcWk'Ui Wk'7\UbWk b  
XUfghY`Yb"HYUa gž'X]Y'g]Wk'[ Ya Y]bgWkUZhi]Wk'ni gUa a YbfUi ZYb  
i bX']bbcj Uh]j Y'K Y[ Y'Z]bXYbž'i a `]\fy'Z]bUbn]Y`Yb'DfcV`Ya Y'ni  
'ØgYbž'\_ØbbYb']\fy'FYg`]Ybni bX'HYUa UfVY]hi bhYf'6Yk Y]g  
ghY`Yb"Gc`WkY'9fZU\fi b[ Yb'ghÅf\_Yb'b]Wk'h'bi f'XUg'HYUa ž'gcbXYfb  
ZØfXYfb'Ui Wk'Y]b'; YZØ\`j cb'Ni gUa a Yb\U'hi bX  
GY`VghVYk i gghgY]b']bbYf\U`V'XYf'A UbbgWkUZhYb"

8YhU]`g

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