

F cW\_ ' ]a ' DUf\_ ' / Ua d / Ua d / F cW\_ ' Ua ' F ]b [ .  
‡ V ] ` Ä i a gZYghY ' j YfgdfYWX Yb ' A Y [ U!  
< ] [ \ ` ] [ \ hg °

A Uhh'GWk Ufnž: Ygh]j U`WX YŽ'gd f]WX h'ØVYf'F cW\_ ' Ua ' F ]b [ ' i bX  
F cW\_ ' ]a ' DUf\_ ' & \$ & ) . ' † V ] ` Ä Ybž'6i WX i b [ Yb ' i bX  
: Ygh]j U`g]WX Yf\Y]h"



B ØfbVYf [ ž'8Yi hgWX `UbX '! '8 ]Y : Ygh]j U!GU]gcb'&\$&) 'ghY\h'j cf  
XYf'HØfž'i bX`X]Y 'J cfZfYi XY`Ui Z`X]Y`VY]XYb' [ fØ» hYb'F cW\_!  
J YfUbghU`hi b [ Yb ' ]b'8Yi hgWX `UbXž'F cW\_ ' Ua ' F ]b [ ' i bX'F cW\_ ' ]a  
DUf\_ž' ]gh`Ybcfa " 'A Uhh'GWk Ufnž'XYf'; YgWX`ÄzhgZØ\ fYf`VY]XYf  
: Ygh]j U`gž`Uh`Y]bY`VYk Y [ hY`?Uff]YfY`\ ]bhYf'g]WX " 'J ca  
HU`YbhVYhfYi Yf`V]g`\ ]b`ni a '@Y]hYf`\Uh`Yf'g]WX ' ]a ' : Ygh]j U`VYfY]WX  
\cWX [ YUfVY]hYhi bX`XUVY]`a ]h]bhYfbUh]cbU`Yb`GhUfg`k ]Y  
A YhU` ]WUž'6]`Y`9]`g\`i bX`7c`Xd`Umini gUa a Yb [ YUfVY]hYh"  
GWk Ufn`k Uf`Ub [ Y`NY]h'8Yi hgWX `UbX!7\YZj cb`@j Y`BUh]cb`i bX  
[ fØbXYhY`&\$&&`X]Y`5 [ Ybhi f`8fYUa \Ui gž`X]Y`]b`Ni gUa a YbUfVY]h  
a ]h`7HG`9j Ybh]a `hÄh] [ `]gh" `8 ]YgY`9btk ]W\_`i b [ Yb`g]bX`Y]bY` [ i hY

J cfUi ggYhni b[ ži a 'X]Y'UbghY\YbXYb'ž V]ÀYb'ni 'ZY]Yfb. 'F cW\_ 'Ua  
F]b[ 'k ]fX'( \$'ž\ſY'U'hi bX'F cW\_ ]a 'Duf'\_ 'Ubb'Ui Z' \$'ž\ſY  
ni fØW\_V`]W\_Ybž'k Ug'ZØf'X]Y'J YfUbghU'hYf'Y]bY '[ fc» Y  
<YfUi gZcfXYfi b[ 'XUfghY`h"

8]Y'j Yf[ Ub[ YbY': Ygh]j U!GU]gcb`Y[ h'bi b'\]bhYf'i bgž'i bX'XYf  
: c\_i g'f]W\hYh'g]W\ 'VYfY]hg'Ui Z'&\$&) "'8]Y'9fk Ufhi b[ Yb'XYf': Ubg  
g]bX'\cW\ /F cW\_ 'Ua 'F]b[ 'i bX'F cW\_ ]a 'Duf'\_j YfnY]W\ bYhYb'VYfY]hg  
ni '6Y[ ]bb'XYg'J cfj Yf\_Ui Zg'VYY]bXfi W\_YbXY'J Yf\_Ui ZgnU\`Yb'j cb  
WU"', "\$\$\$\$'Vnk "'\* "\$\$\$\$'H]W\_Yhg"'8 Ug'Ui gj Yf\_Ui ZhY' YUgm: Ygh]j U'  
XYf'\_i fnYb'K Y[ Y' ]b'BØfbVYf[ 'n]Y\h'Ub'YXYa 'XYf'XYf]HU[ Y  
fi bX'+- ") \$\$'6Ygi W\Yf'Ubž'k Ug'XYb'9fZc`[ 'XYg': cfa Uhg  
i bhYfghfY]W\h"'8]Y'bYi Yb'6Ø\ bYbž'XUfi bhYf'X]Y' l hcd]U! 'i bX  
A UbXcfU'GHU[ Yž'k YfXYb'[ fØ» Yf'i bX'a cXYfbYf'[ YghU'hYhž'i a 'XYb  
5bgdfØW\Yb'XYf': Ygh]j U'VYgi W\Yf'[ YfYW\h'ni 'k YfXYb"

< YUX`]bYf'i bX'Ÿ bXYfi b[ Yb']a '@]bY!! d

ž'Y]bYa 'Yi \_'i gj Yb'žbhYfj ]Yk 'a ]h'A Uh'GW\k Ufn'k i fXY'Ui W\  
VY\_Ubbhž'XUgg'@]b\_]b'Duf'\_&\$&) 'b]W\h'Ui ZhfYhYb'k ]fXž'XU'X]Y'6UbX  
ghUhhXYggYb'Y]bY'Y][ YbY'GhUX]cbhci f'd`Ubh"'5`g'bYi Yf'<YUX`]bYf  
k ]fX'6f]b[ 'A Y'H\Y'<cf]ncb'Ui Z'XYf'6Ø\ bY'ghY\Ybž'[ Yk À\`h'Xi fW\  
Y]b': Ub!J ch]b[ "'8Yf'6cc\_]b[ !DfcnYgg'ZØf'X]Y': Ygh]j U'g'i a ZUggh  
k ]W\h][ Y': U\_hcfYb'k ]Y'J YfZØ[ VUf\_Y]hž'; U[ Ybž'DfcXi \_h]cbgXYhU]`g  
i bX'X]Y'D'Uhn]Yfi b[ 'ja ': Ygh]j U!5fhk cf\_'Hfchn'ghY][ YbXYf  
H]W\_YhdfY]gY'ZØf'Y][ YbY'Hci fbYYb']gh'Yg'XYb': Ygh]j U'j YfUbghU'hYfb  
k ]W\h][ ž'X]Y'H]W\_YhdfY]gY'ZØf'j ]Y'Y': Ubg'YfgW\k ]b[ `]W\`ni '\U'hYb"  
8Yf'VYfY]hg'ni 'nk Y]'8f]hhY'b'j Yf\_Ui ZhY': Ugh@UbY'DUgg'nY][ hž'XUgg  
X]Y'B UW\ ZfU[ Y'b UW\ 'gW\ bY`Yb'9]bhf]hhga Ò[ `]W\\_Y]hYb'Ui W\`]b  
X]YgYa 'ž\ſ[ fc» ']gh"

5i » YfXYa 'k ]fX'Y]bY'bYi Y'Ci hXccf!6Ø\ bY'a ]h'XYa 'BUa Yb  
5ha cg'GHU[ Y'Y]b[ YZØ\fhž'X]Y'XUg'Dfc[ fUa a 'ni gÅh`]W\ 'VYfY]W\Yfb  
gc`"'B UW\ \U'h][ \_Y]hi bX'8]j Yfg]hÅh'gd]Y'Yb'VY]'XYf'D`Ubi b[ 'Y]bY  
k YgYbh]W\Y'F c`Y"'6YgcbXYfg'X]Y'9]bZØ\ fi b[ 'j cb'7Ug\`Ygg  
DUma Ybh'\Uh'dcg]h]j Y'F ØW\_a Y'Xi b[ Yb'j cb'XYb'6Ygi W\Yfb  
Yf\U'hYb"'8 Ug': YYXVUW\_nY][ hž'XUgg'j ]Y'Y': Ubg'X]Y'a cXYfbY  
NU\`i b[ gUfh'VYj cfni [ Yb"

# 8 ]Y` < YfUi gZc fXYfi b[ Yb`XYf` : Ygh]j U`VfUbWXY

Hfc h`XYg`9fZc`[ g`[ fc» Yf`J YfUbghU`hi b[ Yb`ghY`Yb`\_`Y]bYfY  
: Ygh]j U`g`i bhYf`8 fi W\_`"9]b` : Ygh]j U`ghYfVYb` ]gh`ni`VYcVUWXYhYbž  
XU`X]YgY`cZiGWk ]Yf][ \_Y]hYb`UVYbž`]\fY` : Ub[ Ya`Y]bgWUZh`ni  
\U`hYb`"9I dYfhYb`VYhcbYbžXUgg`\_`Y]bYfY` : Ygh]j U`g`k ]W h][`ZØf  
BUWk i WgVUbXg`g]bX`"9]bY`5bU`mgY`j cb`HU[ YggWU`i`nY][ hžXUgg  
A Y[ U`cbnYfhY`j cb`GhUfg`k ]Y`6YmcbW`i`bX`5XY`Y`nk Uf  
k ]fhgWUZh`]WY`J cfhY`Y`a` ]h]g]W`Vf]b[ Yb`i`bX`bYi`Y`5fVY]hgd`ÀhnY  
gWUZZYbžUVYf`[`Y]W`nY]h][`ni`f`?`f]gY`\_`Y]bYfYf` : Ygh]j U`g`VY]hfU[ Yb  
\_`ÒbbYb`" < c`Y`H]W`YhdFY]gY`i`bX`U`[ Ya`Y]bY`GdUfa`U» bU`a`Yb`XYf  
?cbgi`a`YbhYb`VYY]bZi`ggYb`X]Y`H]W`Yhj`Yf`\_`Ài`ZY`bY[ Uh]j`" `⊕  
X]YgYa`?`cbhYi`h`k ]fX`Ui`W`X]Y`B`chk`YbX][`\_`Y]h`j`cb`bUW`U`h][`Yb  
@Øgi`b[ Yb`VYhcbhž`i`a`XYb`c`Yb`9a`]gg]cbYb`VY]`5bfY]gYb  
Ybh[ Y[ Ybni`k ]f`\_`Yb`"

8 ]Y`6fUbWXY`ghY`h`j`cf`XYf`< YfUi`gZc`fXYfi`b[ ž`hfc`h`ghY][`Yb`XYf  
?`cghYb`i`bX`Y]bYg`UfhYb`K`Yh`VYk`YfVg`nk`]gW`Yb`[`fc»`Yb`GhUf`][`g  
i`bX`c`\_`U`Yb`?`ØbghYfb`bUW`U`h][`ni`UfVY]hYb`"J`YfUbghU`hYf`i`bX  
?`ØbghYf`g]bX`[`YZc`fXYfhž`bUW`U`h][`Y`5`hYfbUh]j`Yb`UhhfU`\_`h]j`ni  
[`YghU`hYbž`i`a`X]Y`H]W`YhdFY]gY`]b`Y]bYa`U`nYd`hUV`Yb`F`U`a`Yb`ni  
\U`hYb`"

A ]h`Y]bYa`j`]Y`j`Yfgd`fYW`Yb`XYb`@]bY!!`d`]b`5i`gg]W`hi`bX`XYa  
:`c`\_i`g`Ui`Z`⊕bcj`Uh]cb`i`bX`BUW`U`h][`\_`Y]h`V`]W`Yb`F`cW`Ua`F`]b[  
i`bX`F`cW`\_]a`Duf`\_`&\$&)`cdh]a`]gh]gW`]b`X]Y`Ni`\_i`bZi`8 ]Y` : Ygh]j U`g`  
k`YfXYb`b]W`h`bi`f`š`V]`ÀYb`ZY]Yfbž`gcbXYfb`Ui`W`j`Yfgh`À`\_`h`XUfUi`Z  
UW`hYbž`X]Y`< YfUi`gZc`fXYfi`b[ Yb`XYf`a`cXYfbYb  
J`YfUbghU`hi`b[ gVfUbWXY`Ubni`[ Y`Yb`"

: Øf`k`Y]hYfY`⊕Zcfa`Uh]cbYb`YgYb`G]Y`X]Y`6Yf]W`hY`VY]`

GØXXYi hgWXYžA cfYWcfY`i`bX`HU[ YggWU`i`"

8YhU]`g	
Cfh	BØfbVYf[ ž8Yi hgW`UbX
EiY`Yb	• k k k "gi YXXYi hgWY`XY

8YhU]`g

- k k k "a c f Y W c f Y " X Y
- k k k "h U [ Y g g W X U i " X Y

6Ygi W X Y b `G]Y `i b g `Ui Z. `b!U[ "bYh