

GYfV]Yb`YbhXYW\_Yb. `J cb`6Y`[ fUXg`Di`g  
V]g`ni`j YfghYW\_hYb`GWÅÀhnYb

9bhXYW\_Yb`G]Y`GYfV]Yb. `J cb`6Y`[ fUX`ØVYf`[ Y\Y]a`Y`CfhY`V]g  
\]b`ni`\_i`\_]bUf]gWYb`<Ø\Ydi`b\_hYb`i`bX`UhYa`VYfUi`VYbXYf`  
BUhi`f`\_Yf`YVYb`G]Y`Y]b`\_i`\_hi`fY`Yg`5VYbhYi`Yf`



K ]`\_ca`a`Yb`]b`GYfV]Ybž`Y]bYa`\_j`YfghYW\_hYb`ž`k`Y`]a`\_<`YfnYb`XYg`  
6U`\_Ubg`8`]YgYg`ZUgn]b]YfYbXY`@UbX`]gh`Y]bY`GWÅUhn\_Ua`a`Yf`j`c`Yf`  
;`YgWÅ]WÅhYž`?`i`\_hi`f`i`bX`UhYa`VYfUi`VYbXYf`BUhi`fž`X]Y`XUfUi`Z`  
k`UfhYbž`j`cb`9bhXYW\_Yfb`k`]Y`X]f`Yf`\_i`bXYhni`\_k`YfXYb`"J`cb`XYf`  
di`g]YfYbXYb`9bYf[ ]Y`6Y`[ fUXgž`XYf`XmbUa`\_]gWYb`<`Ui`dhghUXhž`V]g`  
\]b`ni`\_XYb`fi`\_\][`Yb`i`bX`i`bVYfØ`fhYb`@UbXgWÅUZhYb`XYf`  
BUh]cbU`dUf`\_g`\_GYfV]Yb`\_Uh`ZØf`\_YXYb`;`YgWÅ`a`UW`\_Yhk`Ug`ni`  
V]YhYb`"

⊕`X]YgYa`\_5fh`\_Y`\_bY`\_a`Yb`\_k`\_]f`\_X]WÅ`\_a`\_]h`\_Ui`\_ZY]bY`\_gdUbbYbXY`\_FY]gY`  
Xi`fWÅ`\_GYfV]Ybž`\_k`\_c`\_Xi`\_`\_b]WÅ`\_h`\_bi`\_f`\_X]Y`\_VY`\_UbbhYghYb`\_<`][`\_`\_][`\_`\_hgž`  
\_gcbXYfb`\_Ui`\_WÅ`\_j`\_YfVcf[`\_YbY`\_GWÅ`\_À`\_mY`\_YbhXYW\_Yb`\_k`\_]fgh`\_@Ugg`\_X]WÅ`  
\_j`\_cb`\_XYf`\_`\_Øgh]WÅ`\_Yb`\_gYfV]gWYb`\_?`\_ØWÅ`\_Y`\_j`\_YfZØ`\_fYbž`\_YfZU`\_fY`\_a`\_Y`\_f`

ØVYf`XUg`fY]WXY`\_i`hi`fY`Y`9fVY`i`bX`Z]bXY`\YfUi`gž`k`c`Xi`X]Y  
gW`ØbghYb`B`Uhi`f`UbXgW`UZhYb`[`Yb]Y»`Yb`\_Ubbgh" `C`V`Xi`Y]b  
5VYbhYi`fYfž`Y]b`?i`hi`f]bhYfYgg]YfhYf`c`XYf`Y]bZUW`Y]b  
:`Y]bgW`a`YW`Yf`V]gh`G`YfV]Yb`Yfk`UfhYh`X]W`a`]h`c`ZYbYb`5fa`Yb  
i`bX`Y]bYa`i`bj`Yf[`Ygg`]W`Yb`9f`YVb]g`

9bhXYW`\_i`b[`gfY]gY`Xi`fW`6Y`[`fUX`X]Y  
di`g]YfYbXY`<`Ui`dhghUXh`

6Y`[`fUXž`X]Y`YVYbX][`Y`<`Ui`dhghUXh`GYfV]Ybgž`]gh`b]W`h`bi`f  
[`Y`c`d`c`h]gW`]bhYfYggUbhž`g`c`b`X`Y`f`b`Ui`W`\_i`hi`fY`Y`]bY  
GW`U`h`h`f`i`\`Y`"5a`Ni`gUa`a`Yb`Zi`gg`X`Y`f`:`ØggY`8`c`b`Ui`i`b`X`GUj`Y  
[`Y`Y`[`Yb`ž`\`Uh`X]Y`G`h`U`X`h`Y]bY`Ub`[`Y`i`b`X`k`Y`W`g`Y`j`c`Y`Y`Y`g`W`]W`h`Y`ž  
X]Y`V]g`]b`X]Y`5b`h`\_Y`ni`f`Ø`W`\_f`Y]W`h`"8]Y`g`Y`Z`U`gn]b]Y`f`Y`b`X`Y`A`Y`h`f`c`d`c`Y  
V]Y`h`Y`h`Y]bY`Vi`bh`Y`A`]g`W`i`b`[`Ui`g`];`Y`g`W`]W`h`Y`ž`5`f`W`]h`Y`\_`hi`f`ž  
;`U`gh`f`c`b`c`a`]Y`i`b`X`B`U`W`h`Y`V`Y`b`ž`X]Y`Y`X`Y`b`6`Y`gi`W`Y`f`]b`]\`f`Y`b`6`U`b`b  
n]Y`\`h`"

9]b`GdUn]Yf[`Ub[`Xi`fW`X]Y`GhfU»`Yb`j`cb`6Y`[`fUX`]gh`k`]Y`Y]b`F`Y]gY  
Xi`fW`X]Y`NY]h`"8]Y`GhUXh`nY][`h`Y]b`X`fi`W`\_g]c`Y`]\`f`Y`a`Y`\`f`g`W`]W`h`][`Y  
J`Y`f`[`Ub[`Yb`\`Y]hž`X]Y`j`cb`X`Y`f`f`Ø`a`]g`W`Y`b`NY]h`Ø`V`Y`f`X`U`g`C`ga`Ub]g`W`Y  
F`Y]W`V]g`\]b`ni`X`Y`b`j`Y`f`g`W`]Y`X`Y`b`Y`b`↑`[`c`g`U`k`]g`W`Y`b`9`d`c`W`Y`b  
f`Y]W`h`"8]Y`a`U`Y`f]g`W`Y`5`h`gh`U`X`hž`G`h`U`f]`;`f`U`X`ž`V`Y`\`Y`f`V`Y`f`[`h  
n`U`\`f`Y]W`Y`\]g`h`c`f]g`W`Y`G`Y`\`Y`b`g`k`Ø`f`X][`\_Y]h`Y`b`ž`X]Y`Y]b`Y`b`h]Y`Z`Y`b  
9]b`V`]W`\_]b`X]Y`G`Y`Y`Y`X`Y`f`G`h`U`X`h`[`Y`V`Y`b`"

- ?`U`Y`a`Y`[`X`U`b`:`Y`g`h`i`b`[`.`9]b`Y`X`Y`f`V`Y`f`Ø`a`h`Y`g`h`Y`b  
G`Y`\`Y`b`g`k`Ø`f`X][`\_Y]h`Y`b`6`Y`[`f`U`X`g`ž`V`Y`\_`U`b`b`h`Z`Ø`f`]\`f`Y`b  
U`h`Y`a`V`Y`f`U`i`V`Y`b`X`Y`b`6`]W`\_`U`i`Z`X]Y`A`Ø`b`X`i`b`[`X`Y`f`G`U`j`Y`]b`X]Y  
8`c`b`U`i`"8]Y`:`Y`g`h`i`b`[`]gh`i`a`[`Y`V`Y`b`j`cb`Y]b`Ya`k`Y]h`À`i`Z][`Y`b  
D`U`f`\_`ž`X`Y`f`]X`Y`U`Z`Ø`f`Y]b`Y`b`Y`b`h`g`d`U`b`b`h`Y`b`G`d`U`n]Y`f`[`Ub[`]gh`"
- G`h`"G`U`j`U`?`U`h`\`Y`X`f`U`Y`."8]Y`g`Y`a`c`b`i`a`Y`b`h`U`Y`?`]f`W`Y`]gh  
Y]b`Y`g`X`Y`f`[`f`Ø»`h`Y`b`c`f`h`c`X`c`l`Y`b`;`c`h`Y`g`\`À`i`g`Y`f`X`Y`f`K`Y`h`i`b`X  
Y]b`k`U`\`f`U`Z`h`V`Y`Y]b`X`fi`W`\_Y`b`X`Y`g`6`U`i`k`Y`f`\_`ž`X`U`g`X`Y`b  
;`\_`U`i`V`Y`b`i`b`X`X]Y`?i`hi`f`X`Y`f`g`Y`f`V]g`W`Y`b`C`f`h`c`X`c`l`]Y  
j`Y`f`\_`Ø`f`d`Y`f`h`"
- ?`b`Y`n`a`A`\`U]`c`j`U`G`h`f`U»`Y`."8]Y`<`Ui`d`h[`Y`g`W`À`Z`h`g`h`f`U»`Y`j`cb  
6`Y`[`f`U`X`V]Y`h`Y`h`n`U`\`f`Y]W`Y`9]b`\_`U`i`Z`g`a`Ø[`]W`\_Y]h`Y`b`ž`

F YghUi fUbhg'i bX'7UZÅgž]XYU'ZØf'Y]bY'YbhgdUbbhY'DUi gY  
 VY]Y]bYa ' ? UZZY"

8]Y'GhUXh'V]YhYh'Y]bY'UhYa VYfUi VYbXY'UfW]hY\_hcb]gWXY'J]Y'ZU'hž  
 X]Y'j cb'XYf'bYc\_'Ugg]n]gh]gWXYb'6Ui k Y]gY'V]g'\]b'ni  
 nY]h[ YbØgg]gWXYb'Ghfi \_hi fYb'fY]W'h"9]b'VYgcbXYfg  
 VYY]bXfi W\_YbXYg'6Y]gd]Y'']gh'XUg'B Uh]cbU`a i gYi a `j cb  
 GYfV]Ybž'XUg'b]W'h'bi f'Y]bY' [ fc»Y'GUa a `i b[ 'gYfV]gWXYf  
 ?i bghk Yf\_Y'VY\YfVYf[ hžgcbXYfb'Ui W'K Yf\_Y'j cb']bhYfbUh]cbU`  
 UbYf\_UbbhYb' ? ØbghYfb"9]b'6Ygi W'`c\bh'g]W'ž'i a `a Y\ f'ØVYf'X]Y  
 ?i bgh!`i bX' ?i `hi f[ YgW]W'hY'XYg'@UbXYg'ni `YfZU\ fYb"

?Y]b'6Ygi W'`j b'6Y'[ fUX'k ÅfY'j c`ghÅbX][ `c\ bY'Y]b'9]bhUi WXYb' ]b  
 XUg'di `g]YfYbXY'BUW'hYVYb"8]Y'GhUXh]gh'VYfØ\ a h'ZØf'\ fY'  
 Gd`Uj cj ] ž'gWk ]a a YbXYb' ?i Vg'YbhUb[ `XYf'8cbUi "8]YgY  
 Y]bn][ Ufh][ Yb'BUW'hWi Vg'V]YhYb'X]Y'dYfZY\_hY' ?i `]ggY'ZØf'Y]bY  
 Ui g[ Y`UggYbY'BUW'h'a ]h'@] Y!A i g]\_i bX'Y]bYf'J]Y'nU\`j cb  
 7cW\_hU]`g'i bX'gYfV]gWXYb'; YhfÅb\_Yb"<]Yf'\_ØbbYb'6Ygi WXYf  
 gck c\`XUg'BUW'hYVYb'XYf'9]b\Y]a ]gWXYb'Yf'YVYb'U'g'Ui W'a ]h  
 Hci f]ghYb'Ui g'U`Yf'K Y'h]b' ?cbhU\_h'hfYhYb"

5_h]j ]hÅh	C fh	H]ddg
6Ygi W'XYf ?U`Ya Y[ XUb : Yghi b[	?U`Ya Y[ XUb'DUf_	: fØ\`a cf[ Ybg'ZØf k Yb][ Yf A YbgWXYba Yb[ Yb
9]b_Ui ZYb'i bX'9ggYb	?bYn'A ]\U]`cj U GhfU» Y	DfcV]YfY`c_U`Y GbUW_g'k ]Y' Vi fY_
BUW'h'YVYb'Yf'YVYb	Gd`Uj cj ]	F YgYfj ]YfY fYW'hY]h][ `ZØf VY']YVhY'7'i Vg

: Øf'; YgW]W'hg]bhYfYgg]YfhY' ]gh'XUg`< Ui g'XYf  
 BUh]cbU`j YfgUa a `i b[ `Y]b'k Y]hYfYf`< Ø\Ydi b\_h"8 Ug  
 VYY]bXfi W\_YbXY'; YVÅi XY' ]gh'XYf'G]hn'XYg'DUf'Ua Ybhg'i bX'nYi [ h  
 j cb'XYf'VYY]bXfi W\_YbXYb'dc`h]gWXYb'; YgW]W'hY'XYg'@UbXYg"6Y  
 cf[ Ub]g]YfhYb'Hci fYb'\_ØbbYb'6Ygi WXYf'a Y\ f'ØVYf'X]Y'gYfV]gWXY  
 Dc`h]\_i bX'X]Y'9bhk ]W`i b[ `XYg'@UbXYg'YfZU\ fYb"

6Y`[ fUX` \Uh`YXcW`b]W`h`bi`f`\_i` `hi` fY`Y`i` bX` \]ghcf]gW`Y`GY]hYb`"  
8]Y`GhUXh`]gh`Ui`W`Y`b`NYbhf`i`a`Z0f`a`cXYfbY`?`i` bgh`i`bX`  
\_fYUh]j`Yg`GW`UZZYb`"9]b`5i`Zgh]Y`[ `]b`X]Y`?`i` bghgnYbY`nY][`h`XUgg`  
j`j`Y`Y`?`0bgh`Yf`]\`fY`K`Yf`\_Y`]b`j`YfgW`]YXYbYb` ;`U`Yf]Yb`i`bX`A`i`gY`Yb`  
]b`XYf`GhUXh`df`ÅgYb`h]YfYb`ž`k`Ug`X]Y`?`fYUh]j`]h`Å`h`i`bX`  
=bcj`Uh]cbgZfY`i`XY`XYf`"c`\_U`Yb`?`i` bgh[`Ya`Y`]bgW`UZ`h`i`bhYfghfY]W`h`"

9]b`k`Y]hYfYg`<][` \`][` \h`]gh`XYf`5XU`7][`Ub`^Už`Y]bY`[`fc»Y`i`0gY`  
i`bX` :`fY]nY]h[`YV]Yh`]b`XYf`8cbUi`ž`X]Y`cZ`h`U`g` 6Y`[`fUXYf`GY`  
VYnY]W`bYh`k`]fX`" <]Yf` \UVYb`X]Y`6Ygi`W`Yf`X]Y`A`0[` \]W`\_Y]hž`  
j`YfgW`]YXYbY`K`UggYfgdcfhUfhYb`Ui`gni`dfcV]YfYb`ž`F`UX`ni`ZU`fYb`  
cXYf`Y]bZUW`bi`f`Ua`i`Zyf`ni`Yb`hgdUbbYb`"9g`]gh`XYf`dYfZY`\_hY`C`fhž`  
i`a`XYa` \Y`\_h]gW`Yb`GhUXh`YVYb`ni`Yb`hZ]Y`Yb`i`bX`g]W`]b`XYf`  
BUhi`f`ni`Yf` \c`Yb`"

Ni`gUa`a`YbZUggYbX`^`Åggh`g]W`gU[`Ybž`XUgg`6Y`[`fUX`Y]bY`  
ZUW`hYb`fY]W`Y`GhUXh`]ghž`X]Y`g]W`gh`ÅbX][`k`Y]hYfYb`hk`]W`\_Y`h`i`bX`  
]\`fYb`6Ygi`W`Yfb`i`bn`Å` \][`Y`9f`YVb]ggY`V]YhYh`"8Yf`A`]i`Ui`g`  
 ;`YgW`]W`hYž`?`i`hi`fž` ;`Ughfcbca`]Y`i`bX`BUW`h`YVYb`a`UW`h`X]Y`  
GhUXh`ni`Y]bYa`i`bj`Yfn]W`hVUfYb`N]Y`Z0f`YXYb`F`Y]gYb`XYb`ž`XYf`  
X]Y`k`U`fY`GY`Y`Y`GYfV]Ybg`Yb`hXYW`\_Yb`a`0W`hY`"

K`Y]hYfY`=Zcfa`Uh]cbYb`0VYf`6Y`[`fUX`i`bX`gY]bY`5hfU`\_h]cbYb`  
Z]bXYb`G]Y`Ui`Z`XYf`cZZ]n]Y`Y`b`GY]hY`XYf`GhUXh`6Yc`[`fUX`"fg`"

<]XXYb` ;`Ya`g`]b`GYfV]Yb`[`Y`Y]a`Y`C`fhY`  
UVgY]hg`XYf`Hci`f]ghYb`dZUXY`

GYfV]Yb`]gh`Y]b`@UbX`j`c`Yf` ,`VYffUgW`i`b[`Ybž`k`Y]h`0VYf`X]Y`  
VY`\_Ubb`hYb`GY`Yb`gk`0fX][`\_Y]hYb` \]bUi`g`K`Å`fYbX`6Y`[`fUX`i`bX`  
Bcj`]GUX`nU`fY]W`Y`Hci`f]ghYb`Ubn]Y`Yb`ž`[`]Vh`Yg`j`]Y`Y`j`YfghYW`\_hY`  
GW`Å`hYž`X]Y`XUfUi`Z`k`UfhYb`ž`Yb`hXYW`\_h`ni`k`YfXYb`" <]Yf`g]bX`Y]b][`Y`  
XYf`ZUgn]b]YfYb`XghYb`j`YfghYW`\_hYb`C`fhY`i`bX`5`\_h]j`]h`Å`hYb`ž`X]Y`  
GYfV]Yb`ni`V]YhYb` \Uh`"

%`8Ug`?`c`ghYf`Ghi`XYb]WU`

8Ug`?`c`ghYf`Ghi`XYb]WUž`Y]b`i`B9G7C!K`Y`h`\_i` `hi`fYfVYž`Y]Y[`h`

a U`Yf]gW` ]b`XYb` < Ø[ Y`b`bU\Y`XYf`GhUXh? fU`Yj c`"9g`k i fXY`]a  
%&`" : \ \ f \ i bXYfh`[ Y[ fØbXYh`i bX`]gh`VY`\_Ubbh`ZØf`gY]bY  
VYY]bXfi W`\_YbXY`5fW`]hY`\_hi f`i bX`YfghUi b`]W`Yb` : fYg`\_Yb`  
I a [ YVYb`j cb`Y]bYf`]Xm`]gW`Yb`@UbXgW`UZh`Y][ bYh`g]W`XUg  
?`cghYf`dYfZY`\_h`ZØf`Fi \Ygi W`YbXY`i bX` ; YgW`]W`hg]bhYfYgg]YfhY"

&`"C d`YbUW` `8 Ug` : Ua `]`Yb[ fUV`XYf`? UfU[ Ycf[ Yj ]ã!  
8mbUgh]Y

⇒a ` \_`Y]bYb`8cfZHcdc`U`VYZ]bXYh]g]W`X]Y`VYY]bXfi W`\_YbXY`? ]fW`Y  
Gh`" ; Ycf[ ž`X]Y`ZØf`]\fY`Ui » Yf[ Yk Ò`b`]W`Y`A cgU]\_UfVY]h`VY`\_Ubbh  
]gh`8]YgY`? ]fW`Y`]gh`X]Y`YmhY`Fi \Ygh`ÀhhY`XYf`gYfV]gW`Yb  
? Øb][ gZJa `]`Yi bX`V]YhYh`UhYa VYfUi VYbXY`5i gV`]W`\_Y`ØVYf`X]Y  
I a [ YVi b[ "C d`YbUW]gh`b]W`h`bi f`\]ghcf]gW`VYXYi hgUa ž`gcbXYfb  
V]YhYh`Ui W`gW`ØbY`K Y]bVYf[ Yž`k c`a Ub`X]Y`c`\_U`Y  
K Y]bdfcXi \_h]cb`\_YbbYb`YfbYb`\_Ubb"

'`"8]Y` ; Y\Y]a b]ggY`XYf`J Y`]\_c` ; fUX] hY

8]Y`FY[ ]cb`J Y`]\_c` ; fUX] hYž`cZh`ØVYfgY\Yb`j cb`FY]gYbXYbž`]gh`Y]b  
[ fc» Ufh][ Yf`C fh`ZØf`B Uhi f`]YV\UVYf` < ]Yf`Z]bXYb`G]Y`XYb`gW`ØbYb  
: `i gg`8 Ubi VYž`XYf`g]W`Xi fW`X]Y`gUbZhYb` < Ø[ Y`gW``Àb[ Y`h`8]Y  
I a [ YVi b[ `]gh]XYU`ZØf`F UXZU\Yb`i bX`K UbXYfbž`k `À`fYbX`X]Y  
\]ghcf]gW`Yb` : Yghi b[ Yb`Ua ` : `i ggi ZYf`Y]bY`FY]gY`]b`X]Y  
J Yf[ Ub[ Yb\Y]h`Yfa Ò[ `]W`Yb"

(`"8]Y`A U[ ]Y`j cb`HUfU`B Uh]cbU`dUf`\_

HUfU`B Uh]cbU`dUf`\_ž`]b`XYf`B`À`Y`XYf` ; fYbnY`ni `6cgb]Yb!  
< YfnY[ ck ]bUž`]gh`Y]b`k U\Yg`j YfghY`W`\_hYg`ž`k Y`"9f`]gh`VY`\_Ubbh`ZØf`  
gY]bY`VYY]bXfi W`\_YbXY`B Uhi fž`Ui ZFU[ YbXYb`6Yf[ Yž`X]W`hY`K `À`XYf`  
i bX`XYb`\_f]ghU` \_`UfYb`8f]bU! : `i gg`"NU\`fY]W`Y`K UbXYfk Y[ Y  
ZØ\Yb`Xi fW`XUg` ; YV]Yhž`i bX`X]Y`H]Yfk Y`hž`XUfi bhYf`6`À`fYb`i bX  
K Ò`ZYž`Vf]b[ h`Y]bY`k ]`XY`B chY`]b` ⇒ fY`5VYbhYi Yf"

)`"8 Ug`W` Ufa UbhY`Gh`À`X`h`W`Yb`GfYa g\_]`? Uf`cj W`

GfYa g\_]`? Uf`cj W`]gh`Y]b`a U`Yf]gW`Yg`Gh`À`X`h`W`Yb`ž`XUg`bi f`Y]bY

\_i fnY : U\ fhj cb`Bcj ]GUX`YbhZYfbh`Y[ h"6Y\_UbbhZØf`gY]bYb`K Y]b  
i bX`gY]bY`VUfcW\_Y`5fW.]hY\_hi fž[ ]Vh`Yg`\]Yf`j ]Y`Y`\_`Y]bY  
K Y]b[ Øhfž`X]Y`ni`J Yf\_cghi b[ Yb`Y]b`UXYb"9]b`GdUn]Yf[ Ub[ `Xi fW  
X]Y`GhfU» Yb`X]YgYg`\]ghcf]gW Yb`C fhYg`ZØ\fh`G]Y`ni  
VYY]bXfi W\_YbXYb`?]fW Yb`i bX`XYa`VYfØ\`a hYb`DUhf]UfW Yb!  
DU`Ugh"

\*"8]Y`j YfghYW\_hYb`K UggYfZÄ`Y`j cb`I j UW

8]Y`K UggYfZÄ`Y`]a`I j UW7Ubmc`b`g]bX`Y]b`k U\ f\UZh`a U[ ]gW Yf  
C fh"5VgY]hg`XYf`Ui g[ YhfYhYbYb`DZUXY`\_ØbbYb`5VYbhYi Yf`i gh][ Y  
?U`U\_hci fYb`i bhYfbY\`a Yb`cXYf`Y]bZUW`X]Y`UhYa VYfUi VYbXY  
5i gg]W h`Ui ZX]Y`gW fcZYb`i : Y`gYb`i bX`ga UfU[ X[ fØbYb`i ; Yk ÄggYf  
[ Yb]Y» Yb" < U`hYb`G]Y` ÆfY`? Ua YfU`VYfY]hž`XYbb`X]YgYf`C fh]gh  
gW`]W hk Y[ `Zchc[ Yb"

C fh	<][ \`][ \hg	5_h]j ]h`hYb
?`cghYf`Ghi XYb]WU	I B 9G7C! K Y`h_i`hi fYfVY	?i`hi f`i bX ; YgW.]W hY Yf_i bXYb
Cd`YbUW	: Ua` ]]Yb[ fUV`j cb ?UfU[ Ycf[ Yj ]ã	K Y]bj Yf_cghi b[ `i bX 6Yg]W h][ i b[ Yb
JY`_]c` ; fUX] hY	GW`ØbY : `i gg`UbXgW UZh	K UbXYfb`i bX F UXZU\ fYb
HUfU`B Uh]cbU`dUf_	6YY]bXfi W_YbXY BUhi f	K UbXYfb`i bX H]YfVYcVUW hi b[ Yb
GfYa`g_]`?Uf`cj W]	6UfcW_Y`5fW.]hY_hi f	K Y]bj Yf_cghi b[ Yb i bX`GdUn]Yf[ Äb[ Y
I j UW7Ubmc`b	J YfghYW_hY K UggYfZÄ`Y	?U`U`_`ZU\ fYb`i bX Zchc[ fUZ]YfYb

Æ`GYfV]Yb`[ ]Vh`Yg`gc`j ]Y`a Y\ f`ni`YbhXYW\_Yb`U`g`bi f`X]Y  
VY`]YVhYb`hci f]gh]gW Yb`N]Y`Y"8]YgY`j YfghYW\_hYb`GW`ÄhnY`nY][ Yb  
X]Y`h]YZfY`GY`Y`XYg`@UbXYgž`gY]bY` ; YgW.]W hYž`?i`hi f`i bX  
Ui » Yf[ Yk Ø\`b`]W Y`BUhi f" ÆXYf`X]YgYf`C fhY`V]YhYh`Y]bY  
Y]bn][ Ufh][ Y` ; Y`Y[ Yb\`Y]hž`X]Y`k U\ fY`GW`Øb\`Y]hi bX`?i`hi f  
GYfV]Ybg`UVgY]hg`XYf`A UggYb`ni`Yf`YVYb"

? i `]bUf]gW\ Yg`9f`YVb]g. `HfUX]h]cbY``Y  
gYfV]gW\ Y ; Yf]W\ hY`i bX ; YhfÀb\_Y

8]Y`gYfV]gW\Y`?ØW\Y`]gh`Y]b`k i bXYfVUfYf`GW\ a Y`nh]Y[ Y``Ui g  
9]bZØggYbž`X]Y`g]W\`ØVYf`>\f\i bXYfhY`Yb`k ]W\_Y`h`\UVYb``G]Y  
j YfY]bh`X]Y`5fca Yb`XYf`6U`\_UbYf[ ]cb`a ]h`XYa`9fVY`XYf  
cga Ub]gW\Yb`i bX`a ]hY`Yi fcdÀ]gW\Yb`?cW\hfUX]h]cbYb``8]Yg`ZØ\fh  
ni`Y]bYf`\Yff`]W\Yb`J]Y`ZU`h`Ub ; Yf]W\hYbž`X]Y`gck c\  
<Yfn\UZh][\_Y]h`U`g`Ui W\`?fYUh]j ]h`h`k ]XYfgd]Y[ Y`b`

9]b`YW\hYg`A i gg`Ui Z`YXYf`\_i` `]bUf]gW\Yb`9bhXYW`i b[ gfY]gY`]gh`  
â Yj Ud]ž`Y]bY`5fh`[ Y[ f]`hY`<UW\_ZY]gW\ fØ`W\Yb`Ui g`F ]bX!  
i bX`#cXYf`@Ua` a ZY]gW\``8]YgY`\_Y]bYb`8Y`\_UhYggYb`k YfXYb  
\Ai Z][`a ]h`Nk ]YVY`b`i bX`Yd]b`Už`Y]bYa`hfUX]h]cbY`Yb  
: `UXYbVfchž`gYfj ]Yfh`A Ub`Z]bXYh`g]Y`]b`nU`\fY]W\Yb`F YghUi fUbhg  
i bX`GhfU» YbghÀbXYb`]a` [ UbnYb`@UbX``& j ]Y`Yb`Gh`XhYb`[ ]Vh`Yg  
gc[ Uf`gdYn]Y``Y`â Yj UVX` ]b]W\`ffYghUi fUbhgž`X]Y`g]W\`Ui Z`â Yj Ud]  
gdYn]U`]g]Yfh`\UVYbž`]b`XYbYb`a Ub`X]Y`VYghYb`J Uf]UbhYb`XYf  
GhUXh`d`fcV]YfYb`\_Ubb`

9]b`k Y]hYfYg`VY`]YVhYg ; Yf]W\h]gh`GUfa Už`\Yf[ YghY``h`Ui g  
GUi Yf`fUi hv`ÀhYfbž`X]Y`i a`Y]bY ; Ø`i b[ `Ui g`[ Y\UW`hYa` :`Y]gW\  
i bX`FY]g`[ Yk ]W\_Y`h`k YfXYb``8]YgYg ; Yf]W\h]gh`VYgcbXYfg`]b`XYb  
K ]bhYfa cbUhYb`VY`]YVhž`k Ybb`Yg`cZi`U`g`HY`]`j cb ; Ua` ]YbZY]Yfb  
gYfj ]Yfh`k ]fX``8]Y`@Ub[ gUa`\_Y]hž`a ]h`XYf`GUfa U`ni VYfY]hYh`k ]fXž  
`Àggh`X]Y`5fca Yb`]bhYbg]j Yf`k YfXYb`i bX`gcf[ h`ZØf`Y]bY`k U\fy  
; YgW\ a UW`gYI d`cg]cb`VY`]YXYa`6]ggYb`

K Ybb`Yg`i a`6Y`]U[ Yb`[ Y\hž`g]bX`5`j Uf`i bX`DYdYfcbUhU  
?`Ugg]\_Yfž`X]Y`b]W\h`ZY`\Yb`XØfZYb``5`j Ufž`Y]b`k Øfn][ Yf`DUdf]\_U!8]d  
Ui g`[ Yf`ØghYhYb`DUdf]\_Už`5i VYf[ ]bYb`i bX ; Yk ØfnYbž`]gh`dYfZY`\_h  
ni`[ Y[ f]`hYa` :`Y]gW\`i bX`Y][ bYh`g]W\`Yfj cffU[ YbX`U`g  
6fchUi Zghf]W\`DYdYfcbUhU`]gh`Y]b ; Ya`ØgY]b`hcdZ`Ui g`DUdf]\_Už  
Nk ]YVY`b`i bX`Hca UhYbž`XYf`Y]bY`Zf]gW\Y`9f[ `Àbni b[ `ni`j ]Y`Yb  
<Ui dh[ Yf]W\hYb`V]YhYh`

: Øf`XYb`gØ» Yb`5VgW\`i gg`Y]bYg`gYfV]gW\Yb`9ggYbg`k UfhYh`X]Y`  
Hc`fhUž`]bgVYgcbXYfY`X]Y` Ua`d]hUž`Y]b`gUZh][ Yf`6]g`\_i ]h`a ]h`Y]bYf

'i Zh[ Yb'GWX]Wk'h'Ui g'Ni W\_Yf'i bX'9]\_Ufž'X]Y''Y]Wk'h'U'g'K c`\_Yb  
 VYnY]Wk'bY'h'k YfXYb'\_Ubb''5i W' DU`Ué]b\_Yž'XØbbY'DZUbb\_i Wk'Ybž  
 X]Y'a ]hj YfgWk]YXYbYb': Ø'i b[ Yb' 'j cb'A Ufa Y`UXY`V]g'Bi hY''U'  
 gYfj ]Yfh'k YfXYbž'YfZfYi Yb'g]Wk' [ fc» Yf'6Y`]YVh\Y]hi bX'g]bX'Y]b  
 VY`]YVhYg'8 YggYfh'cXYf'gc[ Uf'<Ui dh[ Yf]Wk'h"

BUhØf`]Wk' [ Y\ Òfh'ni `Y]bYa 'j c`ghÅbX][ Yb'\_i `]bUf]gWk'Yb'9f`YVb]g  
 Ui Wk'Y]b'; YhfÅb\_"GYfV]Yb']gh'VY\_Ubbh'ZØf'gY]bY'j ]Y`ZÅ'h][ Y  
 5i gk U\`Ub'K Y]bYbž'X]Y`\Ui dhgÅWk`]Wk'Ui g'\Y]a ]gWk'Yb  
 F YVgcfhYb`\Yf[ YghY`h'k YfXYb"6YgcbXYfg'\Yfj cfni \YVYb'g]bX  
 X]Y'K Y]bY'Ui g'XYb'FY [ ]cbYb'J c'Ĵ cX]bU'i bX'Gi a UX'Ů" < ]Yf  
 \_Ubb'a Ub']a `F U\ a Yb'j cb'K Y]bhci fYb'c\_U`Y'K Y]b[ ØhYf  
 VYgi Wk'Yb'i bX'X]Y'ZY]bYb'HfcdZYb'dfcV]YfYb"

9]b'k Y]hYfYg'hfUX]h]cbY''Yg'; YhfÅb\_]gh'XYf'G`j] cj ]Wk'Y]b  
 DZUi a YbgWk'bUdgž'XYf'U'g'XUg'bUh]cbU`Y'; YhfÅb\_'GYfV]Ybg'[ ]h"  
 G`j] cj ]Wk' ]fX'c Zh'VY]'ZYgh']Wk'Yb'5b`ÅggYb'gYfj]Yfh'i bX']gh'VY\_Ubbh  
 ZØf'gY]bYb'ghUf\_Ybž'i bj Yfk YWk'gY`VUfYb'; YgWk'a UW\_"9]b  
 Y]b`UXYbXYg'6fUbXmHf]b\_f]hi U`ž'VY]'XYa '9]b\Y]a ]gWk'Y'Y]b'; `Ug  
 Ubghc» Ybž'[ Y\ Òfh'ni f'gYfV]gWk'Yb'; UghZfYi bXgWk'UZh"

: Øf'Y]bY'Ui h\Ybh]gWk'Y'\_i `]bUf]gWk'Y'9fZU\fi b[ `]b'GYfV]Yb  
 Ya dZY\`Y']Wk'ž`c\_U`Y`A Åf\_hY'ni `VYgi Wk'Yb"8cfh'Z]bXYh'a Ub  
 Zf]gWk'Y'DfcXi \_hYž'fÅi hYf'i bX'; Yk ØfnYž'X]Y`ZØf'X]Y`Ni VYfY]hi b[  
 hfUX]h]cbY''Yf'; Yf]Wk'hY'i bYf'Ågg`]Wk'g]bX"8 ]Y`A Uf\_hghÅbXY'g]bX'c Zh  
 a ]h'Y]bYa `Vi bhYb'5b[ YVch'Ub'CVghi bX'; Ya ØgY'gck ]Y  
 \UbXk Yf\_]Wk'\Yf[ YghY`h'Yb'8Y`\_UhYggYb'[ YZØ`h' `]XYU`ž'i a `a ]h  
 9]b\Y]a ]gWk'Yb'ni `d`Ui XYfb'i bX'k Y]hYfY'\_i `]bUf]gWk'Y  
 ; Y\Y]a b]ggY'ni `YfZU\fYb"

; Yf]Wk'h	Ni hUhYb	6YgcbXYf\Y]h
ãYj Ud]	F ]bX!`i bX#cXYf @Ja a ZY]gWk'ž Nk ]YVY`bž'6fch	6Y`]YVh'U'g GhfU» YbYggYb
GUfa U	GUi Yf_fUi hž < UW_ZY]gWk'ž'FY]g	HfUX]h]cbY'']b`XYb K ]bhYfa cbUhYb
5 Ĵ Uf	F ÒghdUdf]_Už 5i VYf[ ]bYbž	6Y`]YVhYf'8 ]d'ni a ; f]`Yb

; Yf]W h	Ni hUhYb	6YgcbXYf\Y]h
	; Yk ØfnY	
G`j] cj ]W	DZUi a Yb	B Uh]cbU`[ YhfÅb_`j cb GYfV]Yb

Ni gUa a YbZUggYbX`Åggh]g]W`gU[ Ybž`XUgg`X]Y`gYfV]gW`Y`? ØW`Y  
j ]Y`a Y`f`]gh`U`g`bi f`B U`fi b[ ` `g]Y`]gh`Y]b`9f`YVb]gž`XUg`?i`hi`fž  
HfUX]h]cb`i bX`; UghZfYi bXgW`UZh]YfY]bh`6Ygi`W`Yb`G]Y`GYfV]Yb  
i bX`UggYb`G]Y`g]W`j cb`XYb`\_Øgh]W`Yb`5fca`Yb`j YfZØ`fYbž  
k`Å`fYbX`G]Y`Xi`fW`X]Y`GhfU»Yb`XYf`Gh`Å`XhY`gW`YbXYfb`cXYf`]b  
Y]bYf`fi gh]\_U`Yb`8`ØfZ]W`\_Y]h`D`Uhm`bY`a`Yb`"8]Y`9bhXYW`i b[ `XYf  
\_i`]bUf]gW`Yb`J]Y`ZU`h`GYfV]Ybg`k`]fX`Δ`bYb`i bj`Yf[`Ygg`]W`Y  
9f]bbYfi b[ Yb`VYgW`YfYb`°

**B Uhi fk i bXYf`GYfV]Ybg. `UhYa`VYfUi`VYbXY  
@UbXgW`UZhYb`i bX`B Uh]cbU`dUf\_g**

GYfV]Ybž`cZhi`U`g`Y]b`i bYbhXYW`hYg`ž`k`Y`]b`9i`fcdU`VYnY]W`bYhž  
ØVYffUgW`h`a`]h`Y]bYf`UhYa`VYfUi`VYbXYb`J]Y`ZU`h`Ub`@UbXgW`UZhYb  
i bX`B Uhi`fgW`Øb`Y]hYbž`X]Y`gck`c`"5VYbhYi`fYf`U`g`Ui`W`  
B Uhi`f`]YV`UVYf`]b`]`fYb`6`Ubb`n]Y`Yb`"J`cb`a`U`Ygh`Å]gW`Yb`6Yf[`Yb  
ØVYf`gW`Uh][`Y`K`Å`XYf`V]g`]b`ni`]Xm`]gW`Yb`:`ØggYb`i bX  
[`Y`Y]a`b]gj`c`Yb`<`Ø`Yb`i`GYfV]Yb`U`h`ZØf`Y`XYb`Yhk`Ug`ni`V]YhYb`  
≠`X]YgYa`5VgW`b]hh`k`YfZyb`k`]f`Y]bYb`6`]W`\_`Ui`Z`Y]b][`Y`XYf  
gdY`\_`hU`\_i`Å`fghYb`B Uhi`fk`i`bXYf`XYg`@UbXYg`i`bX`gY]bY  
VYY]bXfi`W`\_YbXYb`B Uh]cbU`dUf\_g"

9]b`YfUi`gfU[`YbXYg`N]Y`]gh`XYf`B Uh]cbU`dUf`\_`HUfUž`VY`\_`Ubbh`ZØf  
gY]bY`XfUa`Uh]gW`Yb`:`Y`gYb`i`bX`X]W`hYb`K`Å`XYf`"8]YgYf`DUf`\_ž`XYf  
g]W`]a`K`YghYb`GYfV]Ybg`YfghfYW`hž`]YZYfh`UhYa`VYfUi`VYbXY  
5i`gV`]W`\_`Ui`Z`X]Y`i`a`]Y[`YbXYb`;`YV]f[`g`UbXgW`UZhYb`i`bX`XUg  
[`]hYfbXY`K`UggYf`XYg`8f]bU!:`i`ggYg`K`UbXYfYf`i`bX  
B Uhi`fgdcfh`Yf`\_ØbbYb`X]Y`j]Y`Yb`K`UbXYfk`Y[`Y`Yf`\_i`bXYbž`X]Y  
Xi`fW`i`bVYfØ`fhY`B Uhi`f`ZØ`fYb`"<`U`hYb`G]Y`5i`ggW`Ui`bUW`XYf  
gY`hYbYb`HUfU!:`]W`hY`ž`Y]bYf`XYf`YbXYa`]gW`Yb`DZUbnybUfhYb`XYg  
DUf\_gž`i`bX`[`Yb]Y»`Yb`G]Y`X]Y`Zf]gW`Y`6Yf[`i`Zh"

9]b`k`Y]hYfYg`B Uhi`fk`i`bXYf`]gh`XYf`B Uh]cbU`dUf`\_`?`cdUcb]\_ž`XYf

b]W h'bi f'U`g`VY`YVhYg`G\_]fYgc fh]a`K ]bhYf`VY`Ubbh]ghž`gcbXYfb  
 Ui W`]a`Gca`a`Yf`a`]h'gY]bYb`Ødd][`Yb`K`]YgYb`i`bX`XYf`j`]Y`Z`h][`Yb  
 :`cfU`i`bX`i`Ui`bU`VY[`Y]ghYfh`"8]Y`F`Y[`]cb`]gh`<`Y]a`U`h`n`U`\`fY]W`Yf  
 K`UbXYf!`i`bX`F`UXk`Y[`Yž`X]Y`Xi`fW`U`h`Ya`VYfUi`VYbXY  
 @UbXgW`UZhYb`ZØ`fYb`"8]Y`VYgcbXYfYb`6YX]b[`i`b[`Yb`a`UW`Yb  
 ?cdUcb]\_`ni`Y]bYa`k`U`fYb`DUfUX]Yg`ZØf`²`\_chci`f]ga`i`g`i`bX  
 BUhi`fgW`i`h"

8]Y`Y`gZcfa`Uh]cbYb`j`cb`i`YfXUdž`Ui`W`U`g`X]Y`9]gYfbY  
 DZcfhY`VY`Ubbhž`g]bX`Y]b`k`Y]hYfYg`U`h`Ya`VYfUi`VYbXYg  
 BUhi`fk`U]gYbž`XUg`XYb`J`Yf`Ui`Z`XYf`8`cbUi`d`f`À[`h`<]Yf`Z]bXYb`G]Y  
 a`U`Y`gh`À`h]gW`Y`?`ddYbž`X]Y`g]W`ghY]`Ui`g`X`Y`a`K`UggYf`Yf`Y`VYb  
 i`bX`Y]bYb`gdY`hU`i`À`fYb`5`bV`]W`V]YhYb`"8Yf`X`Uni`[`Y`Ø`f][`Y  
 BUh]cbU`d`Uf`\_`V]YhYh`b]W`h`bi`f`U`h`Ya`VYfUi`VYbXY`@UbXgW`UZhYbž  
 gcbXYfb`Ui`W`X]Y`A`Ø[`]W`\_Y]hž`X]Y`UfW`À`c`[`]gW`Yb`G`h`h`Y`b`X`Y`f  
 F`Y[`]cb`ni`Yf`\_i`bXYbž`XUfi`b`h`Y`f`X]Y`,`VYffYghY`X`Y`g`U`b`h]\_`Y`b  
 f`Ø`a`]gW`Y`b`@U[`Yfg`j`cb`J]a`]bUW]i`a`"

BUh]cbU`d`Uf`_`	6YgcbXYf`Y]hYb`
HUFU	8]W`hY`K`À`X`Y`f`ž`HUFU!:`]W`hY`ž 8f]bU!:`i`gg
?cdUcb]_`	G_]fYgc fhž`K`UbXYfk`Y[`Yž:`cfU i`bX`i`Ui`bU
i`YfXUd`	A`U`Y`gh`À`h]gW`Y`?`ddYbž J]a`]bUW]i`a`

8]Y`U`f`d`U`b]bU`]a`GØXYb`GYfv]Ybg`]gh`VY`Ubbh`ZØf`]\`fY  
 i`b`VYfØ`f`hY`B`U`h`i`f`i`bX`U`h`Ya`VYfUi`VYbXY`6Yf[`U`b`X`g`W`U`Z`h`Y`b`"A`]h  
 ]\`f`Y`b`a`Uf`\_`U`b`h`Y`b`];`d`Z`Y`b`i`bX`X`Y`b`\_`f]ghU``\_`U`f`Y`b`6Yf[`g`Y`Y`b`n]Y`\`h  
 g]Y`K`UbXYfYfž`X]Y`g]W`U`b`X`Y`f`Zf]gW`Y`b`@`Z`h`i`bX`X`Y`f`fi`\][`Y`b  
 l`a`[`Y`V`i`b[`Y`f`Z`f`Y`i`Y`b`"9]b`<][`\][`\`h`\]Yf`]gh`X`Y`f`D`f`c`\_`Y`h]`Y!  
 BUh]cbU`d`Uf`\_`ž`X`Y`f`ZØf`gY]bY`Ø`V`Y`fk`À`h][`Y`b`X`Y`@UbXgW`U`Z`h  
 VYfØ`a`h]ghž`X]Y`g]W`]X`Y`U`ni`a`K`UbXYfb`i`bX`9`b`h`X`Y`W`\_`Y`b`Y][`b`Y`h`  
 ;`Y]W`n`Y]h][`g]b`X`X]Y`;`Y`V]f[`Y`b`i`b`V`Y`g]Y`X`Y`h`i`b`X`V]Y`h`Y`b`Y]b`Y  
 V`Y`Y]b`X`fi`W`\_`Y`b`X`Y`?`i`]ggY`ZØf`C`i`h`X`c`c`f!`5`\_`h]j`]h`h`Y`b`"

B]W`h`i`n`i`j`Y`f[`Y`g`g`Y`b`]gh`X`Y`f`B`U`h]cbU`d`Uf`\_`:`f`i`\_`U`:`c`f`U`ž`X`Y`f`g]W`  
 ]b`X`Y`f`B`À`Y`j`cb`B`c`j`]G`U`X`V`Y`Z]b`X`Y`h`9f`]gh`b]W`h`bi`f`ZØf`gY]bY`

fY]W\Y : `cfU'i bX': Ui bU`VY\_Ubbhž'gcbXYfb`Ui W\`ZØf`gY]bY  
\  
]ghcf]gW\Yb`?`ÒghYfž`X]Y`g]W\`Ufa`cb]gW\`]b`X]Y`B Uhi`f`Y]bZØ[`Yb`  
8]Y`gUbZhYb`<Ø[`Y`i`bX`X]Y`K`Y]bFY[`]cb`V]YhYb`Y]bY`gW\`ØbY  
?i`]ggY`ZØf`Yb hgdUbbhY`K`UbXYfi`b[`Yb`i`bX`9f`\_i`bXi`b[`ghci`fYb`"

8]Y`gYfV]gW\Yb`B UH]cbU`dUf`\_g`g]bX`k`U\`fY`GW\`Uha`Y]ghYf`XYf`  
B Uhi`fž`i`bX`a`Ub`gc`hY`X]Y` ;`Y`Y[`Yb`Y]h`bi`hnYbž`g]Y`ni`Yf`\_i`bXYb`"  
C V`Y`g`g]W\`i`a`UVYb`hY`i`Yf`]W\Y`K`UbXYfi`b[`Ybž`Yb hgdUbbYbXY  
D]W`\_b]W`\_g`cXYf`Y]bZUW\`i`a`X]Y`A`Ò[`]W\`\_Y]h`U`bXY`hž`X]Y`Zf]gW\Y  
@`Zhi`bX`X]Y`Gh`Y`XYf`B Uhi`f`ni`[`Yb]Y»`Yb`]b`GYfV]Yb`[`]Vh`Y`g  
i`bVY[`fYb`nhY`A`Ò[`]W\`\_Y]hYb`"8]Y`k`i`bXYfVUfYb`@UbXgW\`UZhYb`  
`UXYb`X`Uni`Y]bž`]bbYni`U`hYb`i`bX`X]Y`GW\`Øb`Y]h`XYf`B Uhi`f`ni  
gW\`À`hnYb`"

:`Øf`k`Y]hYfY`≠Zcfa`Uh]cbYb`ØVYf`X]Y`B Uhi`fk`i`bXYf`GYfV]Ybg`i`bX  
X]Y`5`\_hj`]h`hYbž`X]Y`G]Y`Xcfhi`bhYfbY`a`Yb`\_ØbbYbž`VYgi`W\Yb`G]Y  
X]Y`c`Z]n]Y`Y`K`YVg]hY`j`cb`GYfV]Yb`"

?`i`h`i`fY`Y`g`9fVY`i`bX` ;`Y`gW\`]W\`hY`.`8]Y  
VYY]bXfi`W`\_YbXYb`Gh`À`hhYb`i`bX`A`i`gYYb`

GYfV]Ybž`Y]b`@UbX`j`c`Yf`ZUgn]b]YfYbXYf` ;`Y`gW\`]W\`hY`i`bX`fY]W\Ya  
\_i`h`i`fY`Y`a`9fVYž`V]YhYh`Y]bY`J]Y`nU`Y`j`cb`Gh`À`hhYb`i`bX`A`i`gYYbž`  
X]Y`X]Y`6Ygi`W\Yf`]b`X]Y`J`Yf[`Ub[`Yb`Y]h`n]Y`Y`b`"J`cb  
df`À`\  
]ghcf]gW\Yb`G]YX`i`b[`Yb`V]g`\  
]b`ni`VYY]bXfi`W`\_YbXYb  
a`]hY`U`hYf`]W\Yb`?`ÒghYfb`i`bX`nY]h[`Yb`Øgg]gW\Yb  
?i`bgh]bghU`U]cbYb`X]Y`\_i`h`i`fY`Y`@UbXgW\`UZhi`GYfV]Ybg`]gh`gc  
j`Y`Z`h[`k`]Y`gY]bY`9]bk`c`bYf`"

9]b`UVgc`i`hY`g`A`i`gg`ZØf` ;`Y`gW\`]W\`hg]bhYfYgg]YfhY`]gh`XUg`  
B UH]cbU`a`i`gYi`a`]b`6Y`[`fUXž`XUg`À`hYghY`i`bX`[`fØ»`hY`A`i`gYi`a  
XYg`@UbXYg`"9g`VY`YfVYf[`h`ØVYf`(\$`\$`\$`\$`GUa`a`i`b[`ggh`ØW`Yž`X]Y  
X]Y`gYfV]gW\Yž`Yi`fcd`À]gW\Y`i`bX`k`Y`hk`Y]hY` ;`Y`gW\`]W\`hY`UVXYW`\_Yb`"  
6YgcbXYfg`VYa`Yf`\_Ybgk`Yfh`g]bX`X]Y`?i`bghk`Yf`\_Y`j`cb`VYfØ`a`hYb  
GYfV]gW\Yb`i`bX`]bhYfbUh]cbU`Yb`?`Øbgh`Yfbž`XUfi`bhYf`HY`c`X`c`f  
DUj`c`j`]ã`i`bX`DUV`c`D]WUggc`"8]Y`UfW\`À`c`c`[`]gW\Yb` :`i`bXY`Ui`g  
j`YfgW\]YXYbYb`9dcW\Yb`j`YfXYi`h`]W\Yb`X]Y`fY]W\Y` ;`Y`gW\`]W\`hY`XYg  
6U`\_Ubg`"

9]b`k Y]hYfYg`VYXYi hYbXYg`K U\fnY]WXYb`]gh`X]Y`? U`Ya Y[ XUb  
: Yghi b[ `]b`6Y`[ fUXž`X]Y`b]W`h`bi f`U`g`\]ghc`f]gWXYg`5fhYZU`\_h`[ `]hž  
gcbXYfb`Ui W`Y]bYb`UHYa VYfUi VYbXYb`6`]W`Ui ZX]Y`A ØbXi b[  
XYf`GUj Y`]b`X]Y`8cbUi `V]YhYh`9ff]W`hYh`a `&`:\f\i bXYfhj ``7`f`ž  
Xi fW`Y]YZ`X]Y`Yghi b[ `nU`fY]WXY`l a VUi hYb`i bX`9fk Y]hYfi b[ Yb  
i bX`YfnA`h`X]Y`YgW]W`hY`nU`fY]WXYf`6Y`U[ Yfi b[ Yb`i bX  
GW`UW`hYb``8]Y`VYY]bXfi W`YbXY`Yghi b[ gUb`U[ Y`]gh`XUg  
NYbhf`i a `j]Y`Yf`\_i `hi fY`Yf`J YfUbghU`hi b[ Yb`i bX`Y]b`VY`Y]VhYf  
HfYZZdi b`\_h`ZØf`9]b`Y]a `]gWXY`i bX`Hci f]ghYb`"

8Yf`fi g\_U`c fU`BUh]cbU`dUf\_ž`XYf`cZi`U`g` 8]Y`5\_UXYa ]Y`XYf  
GYfVYb `VYnY]W`bYh`k ]fXž`]gh`b]W`h`bi f`ZØf`gY]bY  
UHYa VYfUi VYbXYb`@UbXgW`UZhYb`VY`Ub`bž`gcbXYfb`Ui W`ZØf`X]Y  
[ fc»Y`5bnU`j`cb`?`ØghYfbž`X]Y`g]W`Xcfh`VYZ]bXYb``8]YgY`?`ØghYfž  
k ]Y`XUg`?`cghYf`?fi gYXc`i bX`XUg`?`cghYf`; f[ YhY[ ž`g]bX`Y]b  
k ]W`h][ Yf`HY]`XYg`gYfV]gWXYb`\_i `hi fY`Yb`9fVYg`i bX`V]YhYb  
9]bV`]W`Y`]b`X]Y`fY`][ ]ØgY`?i bghi bX`5fW]hY`\_hi f`XYf  
J Yf[ Ub[ Yb`Y]h`J ]Y`Y`XYf`?`ØghYf`g]bX`bcW`Y`i hY`U`\_h]j `i bX  
n]Y`Yb`; `Ai V][ Y`i bX`Hci f]ghYb`[ `Y]WXYfa U»Yb`Ub`"

K ]W`h][ Y`A i gYYb`]b`GYfV]Yb

B Ua Y`XYg`A i gYi a g GhUXh		6YgcbXYf\Y]hYb
B Uh]cbU`a i gYi a	6Y`[ fUX	l a ZUggYbXY GUa a `i b[ Yb`j`cb ?i bghi bX 5fW`Àc`c[ ]Y
J c`j`cX]bU`A i gYi a	Bc`j`]`GUX	: c`_i`g`Ui`Z`fY[ ]cbU`Y ; YgW]W`hY`i`bX ?i`hi`f
GYfV]gWXYg B Uh]cbU`h`YUHYf	Bc`j`]`GUX	6YfØ`a`hYg`H`YUHYf a`]hj`Y`Z`À`h][ Ya Dfc[ fUa`a
A i gYi a `XYf J c`j`cX]bU	Bc`j`]`GUX	5fW`Àc`c[ ]gWXY 5fhYZU`_hY`i`bX Yh`bc[ fUZ]gWXY 5i`gghY``i`b[ Yb
<Ui`g`XYg`D]cb]Yfg	6Y`[ fUX	≠hYfU`_h]j`Y

B Ua Y`XYg`A i gYi a g GhUXh

6YgcbXYf\Y]hYb



?]bXYfa i gYYb`i bX  
\_i`hi fY`Y  
Dfc[ fUa a Y

8]Y`GhUf`F Ug`i bX`X]Y`F U \_U`F Y[ ]cb`g]bX`k Y]hYfY`VYXYi hYbXY  
GhÀhhYb`XYg`gYfV]gWXYb`9fVYg`5`g`NYbhf i a`XYg`a ]hY`U`hYf`]WXYb  
gYfV]gWXYb`?Òb][ fY]Wg`k UfYb`X]YgY` ; YV]YhY`GWUi d`ÀhnY  
k ]W h][ Yf`\]ghc f]gWXYf`9fY][ b]ggY`8]Y`F i ]bYb`j cb`GhUf`F Ug`XUg  
À`hYghY`VY`UbbhY`NYbhf i a`XYg`gYfV]gWXYb`?Òb][ fY]Wg`g]bX`Y]b  
NYi [ b]g`XYf`J Yf[ Ub[ Yb\Y]hž`k À`fYbX`XYf`I j UW7Ubmc`b`b]W h  
bi f`Z0f`gY]bY`UhYa VYfUi VYbXY`BUhi fgW`0b\Y]hž`gcbXYfb`Ui W`Z0f`  
X]Y` ; YgW ]W hY`XYf`F Y[ ]cb`VY`Ubbh`]gh"

B]W h`ni`j Yf[ YggYb`g]bX`X]Y`nU`\fY]WXYb`? i`hi fYfVYbghÀhhYb  
XYf`I B 9G7C`]b`GYfV]Ybž`X]Y`X]Y`6YXYi hi b[ `XYg`@UbXYg`]a  
Yi fcdÀ]gWXYb`?cbhYi h`k Y]hYf`i bhYfghfY]WXYb`8 Ug`?`c ghYf  
Ghi XYb]WU`i bX`X]Y`? ]fWXY`j cb`Gh`DYhYf`i bX`DUi` `]b  
? cdUcb]\_`g]bX`6Y]gd]Y`Y`Z0f`X]Y`VYY]bXfi W`YbXY`a ]hY`U`hYf`]WXY  
5fW ]hY`\_hi fž`X]Y`Z0f`XUg`gYfV]gWXY`9fVY`j cb`[ fc» Yf`6YXYi hi b[ `]gh"

: 0f`?i bgh]YV\UVYf`V]YhYh`XUg`A i gYi a`Z0f`nY]h[ Yb`0gg]gWXY  
? i bgh`]b`6Y`[ fUX`Y]bY`D`Uhhž`cfa`Z0f`gYfV]gWXY`i bX`]bhYfbUh]cb`U`Y  
?0bghYf`i bX`V]YhYh`fY[ Y`a`À»][ `K YW`gY`Ui gghY`i b[ Yb`i bX  
J YfUbghU`hi b[ Yb`8]Yg`]gh`Y]b[ [ fc» Ufh][ Yf`C fhž`i a`X]Y`\_fYUh]j Y  
GY]hY`GYfV]Ybg`\_YbbYbni`YfbYb`i bX`X]Y`j YfgW]YXYbYb  
Ghf`0a i b[ Yb`XYf`a cXYfbYb`?i bgh`ni`Yf`YVYb"

GYfV]Yb`V]YhYh`U`gc`Y]b`fY]W\U`h][ Yg`\_i`hi fY`Y`Yg`9fVYž`XUg`]b  
gY]bYb`A i gYb`i bX`\]ghc f]gWXYb`GhÀhhYb`YVYbX][ `k ]fX`->XYg  
X]YgYf`N]Y`Y`YfnÀ`\`h`b]W h`bi f`X]Y` ; YgW ]W hY`XYg`@UbXYg`ž  
gcbXYfb`Ui W`X]Y` ; YgW ]W hYb`gY]bYf`A YbgWXYb`9]b`6Ygi W`]b  
GYfV]Yb`]gh`a Y`f`U`g`bi f`Y]bY`F Y]gY/Yg`]gh`Y]bY`F Y]gY`Xi fW`X]Y  
NY]hž`X]Y`X]Y`6Ygi WXYf`a ]h`XYf`H]YZ`i bX`XYf`J ]Y`ZU`h`XYf  
gYfV]gWXYb`?i`hi f`j YfV]bXYh"

5VYbhYi Yf`i bX`5`\_h]j ]hÀhhYb`Z0f`Y`XYb  
; YgW a UW`\_]b`XYf`gYfV]gWXYb`K`]`Xb]g

GYfV]Ybž'Y]b`@UbXž'XUg'cZh'j cb'F Y]gYbXYb'ØVYfgY\Yb'k ]fXž'V]YhYh  
Y]bY'j ]Y`ZÄ'h[ Y`DU`YhhY`Ub'5VYbhYi Yfb'i bX'5\_hj] ]hÄhYbž'X]Y`]b  
UhYa VYfUi VYbXYb'bUhØf`]WYb'?'i` ]ggYb'ghUhhZ]bXYb" ]cb'XYb  
gWfcZZYb'6Yf[ Yb'ja`GØXYb'V]g'ni`XYb'gUbZhYb'<Ø[ Y'b'ja`BcfXYb  
[ ]Vh'Yg'ZØf`YXYb'; YgWka UW`Yhk Ug'ni`YbhXYW\_Yb"8]Y'gYfV]gWY  
K ]Xb]g]gh'Y]b'DUfUX]Yg'ZØf`BUh'f`]YV\UVYf'i bX'5XfYbU`]b↑b\_]Yg  
[ `Y]WYfa U»Yb"

<]Yf'g]bX`Y]b][ Y`XYf'Ui ZfY[ YbXghYb'5\_hj] ]hÄhYbž'X]Y`]b'GYfV]Ybg  
i bVYfØ\fhYb'@UbXgWkUZhYb'Ui Z'G]Y`k UfhYb.

- K UbXYfb'i bX`HfY\_\_]b[ .`GYfV]Ybg'BUh]cbU`dUf\_gž'k ]Y  
XYf'N`Uh]Vcf'i bX`HUfU`BUh]cbU`dUf\_gž'V]YhYb'Y]bY  
J]Y`nU\`j cb'K UbXYfk Y[ Ybž'X]Y'gck c\`ZØf'5bZÄb[ Yf'U`g  
Ui W`ZØf'YfZU\fybY'K UbXYfyf'[ YY][ bYh'g]bX"8]Y  
UhYa VYfUi VYbXYb'5i gV`]W\_Y'i bX`X]Y`A Ò[ `]W\_Y]hž'X]Y  
Y]b\Y]a ]gWY':`cfU'i bX': Ui bU'ni`VYcVUWk hYbž'a UWkYb  
XUg'K UbXYfb' ]b`X]YgYb'; YV]YhYb'ni`Y]bYa  
i bj Yf[ Ygg`]WYb'9f'YVb]g"
- F UZh]b[ `i bX`? U`U\_ZU\fyb.'8Yf':`i gg`HUfU`]gh'VYfØ`a h  
ZØf'gY]bY`Ui ZfY[ YbXYb'F UZh]b[ !Hci fYb'i bX`\_f]ghU`\_`UfYg  
K UggYf"5VYbhYi Yf'i gh][ Y`\_ÖbbYb'g]Wk`Y]bYf'[ YZØ\fhYb  
Hci f`UbgWk`]Y»Yb'i bX`X]Y`Ghfca gWk bY`Yb`VYnk ]b[ Ybž  
k Ä\fybX'g]Y`]ba ]hhYb`XYf'gdY\_hU\_i`ÄfYb`I a [ YVi b[  
dUXXY`b"
- : U\ffUXhci fYb.'8]Y`UVk YWk g'i b[ gfY]WkY`@UbXgWkUZh  
GYfV]Ybg' ]gh'XYU`ZØf'FUXZU\fyf"CV'G]Y`[ Ya Øh]Wk`Xi fWk  
a U`Yf]gWkY`8ÖfZYf'fUXY`b'cXYf`\YfUi gZcfXYfbXY  
6Yf[ ghfYW\_Yb'i bhYfbY\ a Yb'a ÖWk hYbž'Yg' [ ]Vh'nU\`fY]WkY  
FUXfci hYbž'X]Y`Ub`VYY]bXfi W\_YbXYb'5i gg]Wk hgd i b\_hYb  
j cfVY]ZØ\fyb"
- ?`YhhYfb. : Øf'?`YhhYfVY[ Y]ghYfhY`V]YhYh'GYfV]Yb`Y]b][ Y  
gdUbbYbXY': Y`gYb'ni a`?'YhhYfbž']bgVYgcbXYfY`]b`XYf  
I a [ YVi b[ `XYg': fi g\_U'; cfU`BUh]cbU`dUf\_g" <]Yf'Z]bXYb  
G]Y'gck c\`Gdcfh`YhhYfb`U`g'Ui Wk`hfUX]h]cbY`Y`Fci hYbž  
X]Y`U`Yf'9fZU\fi b[ `[ YfYWk'h'k YfXYb"

5VYf`XUg' ]gh'bcWk`b]Wk'h`U`Yg`GYfV]Yb`\Uh'Ui Wk`j ]Y`Y`j YfghYW\_hY

GWÅhnY`ni `V]YhYbž`X]Y`ZØf`5VYbhYi fYf`i bX`BUhi f`]YV\UVYf  
]bhYfYggUbh`g]bX.

- < Ò\`YbYI dYX]h]cbYb. `8]Y`gYfV]gWÅYb`< Ò\`Yb`g]bX`Y]b  
k Y]hYfYg`Ui ZFY[ YbXYg`5VYbhYi Yf``6YgcbXYfg`X]Y  
F]gcj UUU`< Ò\`Y`i bX`X]Y` @cj Yfg`< Ò\`Y`g]bX`VY`]YVhY  
N]Y`Y``9bhXYW`Yb`G]Y`i bhYf]fX]gWÅY`K i bXYf`i bX  
ZUgn]b]YfYbXY`?U`\_ghY]bZcfa Uh]cbYb"
- K `]`Xh]YfVYcVUWÅhi b[ Yb. `GYfV]Yb`]gh`X]Y`<Y]a Uhj`]Y`Yf  
H]YfUfhYb``6YgcbXYfg`]a `BUh]cbU`dUf`\_`?cdUcb]\_`  
\_ÒbbYb`G]Y`[ fc»Y`K `]`Xh]YfY`k ]Y`FY\Yž`K `]`XgWÅk Y]bY`i bX  
gc[ Uf`K ÒZY`VYcVUWÅhYbž`k Å\fybX`G]Y`k UbXYfb`cXYf`Ub  
Y]bYf`[ YZØ\fhYb`GUZUf]`hY`]bY`a Yb"
- K ]bhYfgdcfh. `K Ybb`G]Y`X]Y`\_U`hY`Å\fygnY]h`]YVYbž`XUbb  
gc``hYb`G]Y`X]Y`G\_] [ YV]YhY`]b`?cdUcb]\_`cXYf`GhUfU  
D`Ub]bU`VYgi WÅYb``8]YgY`FY [ ]cbYb`V]YhYb  
\Yfj`c ffU[ YbXY`D]ghYb`ZØf`G\_]ZU\fyf`i bX`Gbck VcUfXYf  
U`Yf`B]j YUi gž`gck ]Y`nU\fy]WÅY`A Ò[ `]WÅ\_Y]hYb`ni a  
GWÅbYYgWÅi`k UbXYfb"
- GWÅk ]a`a Yb`]b`bUhØf`]WÅYb`; Yk`ÅggYfb. `æ`XYb  
k Ufa Yb`A cbUhYb`g]bX`X]Y`GYyb`i bX`:`ØggY`GYfV]Ybg  
dYfZY`\_hni a`GWÅk ]a`a Yb``6YgcbXYfg`XYf`DU`]WGYY`i bX  
XYf`6U`]bU`6U`hU`g]bX`VY`]YVhY`CfhY`ZØf`YfZf]gWÅYbXY  
GWÅk ]a`a hci fYb"

9]b`Y]bn][ Ufh][ Yg`9f`YVb]g`V]YhYh]g]WÅ`]b`XYf`FY [ ]cb`Cd`YbUWž`k c  
5VYbhYi YfYbh\i g]UghYb`b]WÅ`h`bi f`X]Y`a U`Yf]gWÅYb`K Y]bVYf[ Y  
Yf`\_i bXYbž`gcbXYfb`Ui WÅ`Ub`cf[ Ub]g]YfhYb`K Y]bhci fYb  
hY`]bY`a Yb`\_ÒbbYb``G]Y`\_ÒbbYb`gY`Vgh`<UbX`Ub`Y[ Ybž`]bXYa`G]Y  
VY`]XYf`HfUi VYb`YgY`\Y`ZYb`i bX`X]Y`?i bgh`XYf`hfUX]h]cbY``Yb  
K Y]b\YfghY``i b[ `Yf`YVYb"

< ]Yf`]gh`Y]bY`, VYfg]WÅh`ØVYf`Y]b][ Y`\YfUi gfU[ YbXY  
5VYbhYi Yfa Ò[ `]WÅ\_Y]hYb`]b`GYfV]Yb.

5_h]j ]hÅh	C fh	GWÅk ]Yf][ _Y]h
K UbXYfb	BUh]cbU`dUf`_`HUfU	@Y]WÅh`V]g`A ]hhY`
F UZh]b [	: `i gg`HUfU	A ]hhY``V]g`<c WÅ

5_h]j ]hÀh	C fh	GWk ]Yf][ _Y]h
?`YhhYfb	: fi g_U'; cfU	A ]hhY`V]g'<cWk
<Ò\`YbYI dYX]h]cbYb	F]gcj UWU'<Ò\`Y	@Y]Wk h

GYfV]Yb`]gh`Y]b`N]Y`ž`XUg`?`cbhfUghY`i`bX`5V`k`Y`W`g`i`b`[`j`Y`fg`d`f`]`W`k`h`  
9[ U`ž`c`V`G]Y`g]W`k`ZØf`5V`Y`b`h`Y`i`Y`f`]`b`X`Y`f`B`U`h`i`f`]`b`h`Y`f`Y`g`g]Y`f`Y`b`c`X`Y`f`  
Y]b`Z`U`W`k`X]Y`Z`f]Y`X`]W`k`Y`G`W`k`Ò`b`Y]h`X`Y`f`@`U`b`X`g`W`k`U`Z`h`i`[`Y`b]Y`»`Y`b`  
a`Ò`W`k`h`Y`b`ž`X]Y`g`Y`f`V]g`W`k`Y`k`i`X`b]g`V]Y`h`Y`h`i`b`V`Y`[`f`Y`b`n`h`Y`  
A`Ò`[`]`W`k`\_`Y]h`Y`b`"6`Y`[`Y`V`Y`b`G]Y`g]W`k`U`i`Z`Y]b`Y`9`b`h`X`Y`W`\_`i`b`[`g`f`Y]g`Y`  
X`i`f`W`k`X]Y`g`Y`Z`U`g`n]b]Y`f`Y`b`X`Y`@`U`b`X`g`W`k`U`Z`h`i`b`X`Y`f`Y`V`Y`b`G]Y`  
i`b`j`Y`f`[`Y`g`g`]W`k`Y`5`V`Y`b`h`Y`i`Y`f`ž`X]Y`G]Y`b`c`W`k`U`b`[`Y`]b`9`f]b`b`Y`f`i`b`[`  
V`Y`U`h`Y`b`k`Y`f`X`Y`b`"

8`Y`h`U]g`

6`Y`g`i`W`k`Y`b`G]Y`i`b`g`U`i`Z`Y]b`Y`!`f`Y]g`Y`"X`Y`