

) \$\$ '? ]`ca YhYf`ni a `; Ybi gg.`l bhYf!  
GWk Ufn`ZY]Yfh`gY]b`K Y]bZYgh

9]b`DÅfWYb`fY]gh)` \$\$ '? ]`ca YhYf`ZØf`XUg`hfUX]h]cbY`Y  
K Y]bZYgh]b`l bhYf!GWk Ufn``9f`YVYb`G]Y`X]Y`ZYgh]WY  
5ha`cgd`ÅfYž`\_Ògh]WYb`K Y]b`i bX`\_i`]bUf]gWY  
<Ò\Ydi b`hY`

≠`XYf`\_Y]bYb`; Ya Y]bXY`l bhYf!GWk Ufn`ja`GW`]hnYf`GhUXhhY]  
ZUbX`Ua`GUa`ghU[ UVYbX`XUg`U``Å\`f`]WY`K Y]bZYgh`ghUhhž`XUg  
a`]hh`Yfk`Y]Y`c`\_U`Y`6YfØ\`a`h\Y]h`Yf`Ub[ h`\Uh``8 Ug`9j`Ybhž  
j`YfUbghU`hYh]`cb`XYf`: fY]k`j``[ Yb`: Yi`Yfk`Y`fž`n]Y`h`b]W`h`bi`f`X]Y  
9]b`Y]a`]gWYb`Ubž`gcbXYfb`\`Uh`Ui`W`ØVYf`X]Y`fY[ ]cbU`Yb  
; fYbnYb`\]bUi`g`ZØf`5i`ZgY`Yb`[ Ygc f[ h`Gc`fY]ghY`Y]b`DÅfWYb  
gc[ Uf`Ui`g`XYa`VUmYf]gWYb`5`hÒhh]b[ `Ubž`i`a`Ub`X]YgYf`HfUX]h]cb  
hY]`ni`UVYb`"

6Y]`Yff`]WYa`K`YhhYf`i`bX`Ub[ YbY`a`Yb`HYa`dYfUhi`fYb`ZY]YfhYb  
X]Y`6Ygi`WYf`[ Ya`Øh]W`]a`:`fY]Yb``Nk`]gWYb`XYb`ZYgh]W  
[ YgW`a`ØW`hYb`H]gWYb`i`bX`]a`NY`h`k`i`fXYb`K`Y]b`]YV`UVYf`b]W`h  
bi`f`Xi`fW`X]Y`J]Y`ZU`h`XYf`Ub[ YV`chYbYb`K`Y]bY`Ub[ Ync[ Ybž  
gcbXYfb`Ui`W`Xi`fW`X]Y`\_Ògh]WYb`GdY]gYbž`X]Y`j`cb`XYb  
: Yi`Yfk`Y`fZf`Ui`Yb`ni`VYfY]hY`h`k`i`fXYb``: `Ua`a`\_i`WYbž`?`ÅgYk`ØfZY`  
i`bX`; f]`k`ØfghY`gcf[ hYb`ZØf`XUg`Y]V`]WY`K`c`\`i`bX`fi`bXYhYb`XUg  
: Ygh]XYU`UV`"

6YgcbXYfY`; ÅghY`Ui`g`5`hÒhh]b[

8 Ug`K`Y]bZYgh]`YfnY]W`bYhY`Y]b`fY[ Yg`?`ca`a`Yb`j`cb`A`YbgWYb  
j`YfgW]YXYbghYb`5`hYfg`i`bX`Ui`g`bU`\`i`bX`ZYfb``l`bhYf`XYb  
nU`\fY]WYb`; ÅghYb`ZUbXYb`g]W`Ui`W`5bXfYU`i`bX`K`YfbYf  
GW`a`]Xhž`X]Y`Y][ Ybg`Ui`g`5`hÒhh]b[ `Ub[ YfY]gh`k`UfYb``8 Ug`DUUf

\UhhY'k Å\fybX'Y]bYg'i f'Ui Vg]b'ÿ [ mdhYb'K YfbYf'GWÅ a ]Xhž'XYb  
Y\Ya U')[ Yb'c fhg] cfghY\Yf'j cb'li bhYf!GWÅk Ufnž'\_YbbYb[ Y'Yfbh"  
6Y[ Y]ghYfh'j cb'gY]bYb'9fnÅ\i b[ Ybž'VYgWÅ'cggYb'g]Yž'X]Y'Ub[ Y  
FY]gY'Ui Z'g]WÅ'ni 'bY\ a Yb'i bX'X]Y'Y]ba U')[ Y'5ha cgd\ÅfY'XYg  
K Y]bZYghYg'ni 'Yf'YVYb"

K ]Y'g]WÅ '\YfUi gghY''hYž'k Uf'X]Y'9bhgWÅY]Xi b[ 'b]WÅ'h'bi f']a di 'g] ž  
gcbXYfb'Y]bY'VYa Yf\_Ybgk YfhY'A Ô[ ' ]WÅ\_Y]hž'X]Y  
8cfZ[ Ya Y]bgWÅ UZh'\_YbbYb'ni 'YfbYb'i bX'XYf'k Y]bgY')[ Yb  
5ha cgd\ÅfY'ni 'ZfÖbYb'" 8]Y': fYi bX'WÅ\_Y]hi bX'<Yfn']WÅ\_Y]hi\]Yf  
g]bX'Y]bZUWÅ'i b[ 'Ui V']WÅ''K ]f'ZØ\Yb'i bg'gY\ f'k ]''\_ca a Yb ž  
Åi »YfhY'g]WÅ'5bXfYU'YfZfYi h'' ÆfY'6Y[ Y]ghYfi b[ 'hY]'hY'XUg'DUUF  
a ]h'nU\ 'fY]WÅYb'UbXYfYb'6Ygi WÅYfbž'X]Y'XUg': Ygh'ni 'Y]bYa  
i bj Yf[ Ygg']WÅYb'9f'YVb]g'a UWÅhYb"

Æ'XYb'DUi gYb'XYg'ZY]Yf']WÅYb'HfY]VYbg'k i fXYb'j ]Y'Y'B Yi ][ \_Y]hYb  
i bX': YgWÅ]WÅhYb'Ui g[ YhUi gWÅhž'k Ug'XYa ': Ygh'Y]bYb  
dYfgÖb']WÅYb'7\UfU\_hYf'j Yf']Y\''6i bhY'@]WÅhYf'hUi WÅhYb'XYb  
8cfZd'Uhn']b'Y]bY'fca Ubh]gWÅY'Gh]a a i b[ 'i bX'j YfghÅf\_hYb'X]Y  
[ YgY''[ Y'5ha cgd\ÅfYž'X]Y'XUg'K Y]bZYgh'Ui gnY]WÅbYh"

## 9]b': Ygh'ZØf'; YbYfUh]cbYb

9]b'k Y]hYfYf'<][ \'][\ h'XYg'K Y]bZYghYg'k Uf'X]Y'J ]Y'ZU'h'XYf  
K Y]bgcfhYb'"8]Y': fU[ Y'bUWÅ'XYf'@]YV']b[ ggcfhY' 'Fch'cXYf'K Y]» ž  
'YV']WÅ'cXYf'hfcW\_Yb' 'ZubX'fY[ Yb'5b'\_Ub[ 'i bX'VfUWÅhY'Ub'XYb  
H]gWÅYb'YV\UZhY'8]g\_i gg]cbYb'\Yfj cf''6YgcbXYfg'XYf'K Y]b'Ui g  
XYa ': i 'XYbhu'ž'XYf'<Y]a Uh'XYg'GhUf\_cWÅg'æ\Ubb'@ZYfž'Yf\]Y'h  
j ]Y'@cV'j cb'XYb'6Ygi WÅYfb''9g'k Uf'ni 'gdØfYbž'XUgg'X]YgY  
J YfUbghU'hi b[ 'b]WÅ'h'bi f'Y]bY': Y]Yf'XYg'K Y]bgž'gcbXYfb'Ui WÅ'Y]bY  
<ca a U[ Y'Ub'X]Y'HfUX]h]cb'XYf'; Ya Y]bXY'jgh"

8]Y': fY]k ]''[ Y': Yi Yfk Y\ fž'X]Y'XUg'9j Ybh'bi b'VYfY]hg'ni a  
nY\bhYb'A U'j YfUbghU'hYhYž'\Uh'a ]h'X]YgYa ': Ygh'Y]b'k ]WÅh][ Yg  
6]bXY[ 'Y]X'nk ]gWÅYb'XYb'A YbgWÅYb'[ YgWÅUZZYb''6Y][ i hYa '9ggYb  
i bX'[ i hYb'K Y]bYb'\_ca a Yb'B UWÅVUfb'i bX': fYi bXY'ni gUa a Ybž  
i a ]b'VYg]bb']WÅYf'F i bXY'ni 'ZY]Yfb'' 9g]gh'Y]b': Ygh'ZØf'U''Y  
; YbYfUh]cbYb ž'gU[ h'K YfbYf'GWÅ a ]Xhi bX'gd]Y[ Y'h'XUa ]h'X]Y

A Y]bi b[ Yb j ]Y`Yf"5i W`? ]bXYf'i bX`đ [ YbX`]WXY`UVYb`]\fYb  
D`Um'i bX`[ Yb]Y»Yb`X]Y`i bVYgWk YfhY`NY]h`i]b`Y]bYf`ZUa` ]]ÀfYb  
5ha cgd\ÀfY"

8 Ug`K Y]bZYgh`i]b`I bhYf!GWk Ufn`]gh`b]Wkh`bi f`Y]bY`[ Ughfcbca` ]gWXY  
J YfUbghU`hi b[ ž`gcbXYfb`Y]b`YVYbX][ Yg`6Y]gd]Y`ZØf  
Ni gUa`a Yb`U`h`i bX`i; Ya`Y]bgWk UZhgg]bb`"Gc`WXY`i: YghY`gWk Y]»Yb  
X]Y`8cfZYk c`bYf`ni gUa`a Yb`i bX`nY][ Ybž`k ]Y`k ]Wkh][  
HfUX]h]cbYb`i]b`Y]bYf`]a`a Yf`gWk bY`YV][ YfYb`K Y`h`g]bX`"

## 9]b`i: Ygh`XYf`i; Ya`Y]bgWk UZh

⇒Y]bYf`NY]hž`i]b`XYf`j ]Y`Yg`j Yf[ Åb[ `]WXYfgWXY]bhž`V]YhY`h`XUg  
K Y]bZYgh`i]b`I bhYf!GWk Ufn`Y]bYb`FUi a`ž`i a`X]Y`Y]bZUWXYb  
: fYi XYb`XYg`@YVYbg`ni`ZY]Yfb`"9g`]gh`a`Y`f`U`g`bi f`Y]b`i: Ygh`i`Yg  
]gh`Y]b`Cfh`XYf`6Y[ Y[ bi b[ ž`XYf`i: fYi bXgWk UZh`i bX`XYg`5i ghUi gWk g  
j cb`i; YgWk]WkhYb`"8]YgYg`Y]bn][ Ufh][ Y`9fY][ b]g`U`h`g]Wk`ØVYf`X]Y  
»\fY`\]bk Y[ `ni`Y]bYa`VYXYi hYbXYb`\_i`h`i fY`Yb`<][ \`][ \h`XYf  
FY[ ]cb`Yb`hk ]W`Y`hž`XUg`i]b`XYb`\_ca`a YbXYb`»\fYb`g]WXYf`]W`j ]Y`Y  
k Y]hYfY`6Ygi WXYf`Ub`c`W`Yb`k ]fX`"

8 Ug`K Y]bZYgh`i]b`I bhYf!GWk Ufn`]gh`b]Wkh`bi f`Y]b`\_i`\_i]bUf]gWXYg  
9f`YVb]gž`gcbXYfb`Ui WXY]b`\_i`h`i fY`Yg`9fY][ b]gž`XUg`X]Y  
; Ya`Y]bgWk UZh`i]ni gUa`a YbVf]b[ h`8]Y`Cf[ Ub]gUh]cb`YfZc`[ h`Xi fWk  
X]Y`i: fY]k ]`][ Y`i: Yi Yfk Y`f`i bhYf!GWk Ufnž`X]Y`a`]h`j ]Y`  
9b[ U[ Ya`Yb`hi bX`<YfnV`i h`Ub`XYf`8i fWk ZØ`fi b[ `X]YgYf  
J YfUbghU`hi b[ `UfVY]hYh`8]Y`9]bb`U`a`Yb`XYg`i: YghYg`\_ca`a Yb`XYf  
: Yi Yfk Y`f`i bX`\_c`\_U`Yb`Dfc`Y`h`Yb`ni [ i hYž`k Ug`XYb`gcn]U`Yb  
Ni gUa`a Yb`U`h`XYf`i; Ya`Y]bXY`gh`Åf`\_h`"Gc`WXY`J YfUbghU`hi b[ Yb  
ZØfXYfb`b]Wkh`bi f`XYb`\_c`\_U`Yb`K Y]bVUi`i bX`X]Y`i; Ughfcbca` ]Yž  
gcbXYfb`hfU[ Yb`Ui Wk`ni f`Hci f]ga`i gZØfXYfi b[ `]b`XYf`FY[ ]cb`VY]"

## 8 ]Y`6YXYi hi b[ `j`cb`K`Y]bZYghYb`i]b`XYf FY[ ]cb

K Y]bZYghY`g]bX`i]b`8Yi hgWk`UbX`gY`f`VY`]YVh`i bX`UVYb`i]b`j ]Y`Yb  
FY[ ]cbYb`Y]bY`Ub[ Y`HfUX]h]cb`"G]Y`ghY`Yb`b]Wkh`bi f`Y]bY

A Ò[ `]W\_X]h'XUfz`c\_U`Y`K Y]bY`ni `dfcV]YfYbž'gcbXYfb`V]YhYb`Ui W\_X  
Y]b` : cfi a `ZØf`X]Y`DfÀgYbhUh]cb`fY[ ]cbU`Yf`? Ògh]W\_X]hYb`i bX  
\_i `hi fY`Yf`6fÀi W\_XY`" ð`XYf`Ygg]gW\_XYb`F Y[ ]cbž`]bgVYgcbXYfY`]a  
J c[ Y`gVYf[ \_fY]gž`UVYb`K Y]bZYghY`k ]Y`XUg`]b`i bhYf!GWk Ufn`Y]bY  
VYgcbXYfY`6YXYi hi b[ ž`XU`g]Y`X]Y`ÀbX`]W\_XY` ; Ya Y]bgW\_XUZh  
ghÀf`Yb`i bX`X]Y`c\_U`Y`K ]fhgW\_XUZh`Ub`\_i fVY`b"

8]Y`HfUi VYbUbVUi [ YV]YhY`k ]Y`F`Y]b`YggYbž`X]Y`8Yi hgW\_XY  
K Y]bghfU»Y`i bX`XUg` ; i `XYbhU`g]bX`VY`Ub`bh`ZØf`]`fY  
Ui g[ YnY]W\_XbYhYb`K Y]bY`"E i Y`Yb`k ]Y`X]Y`8Yi hgW\_XY`K Y]bghfU»Y  
VYhcbYb`X]Y`J ]Y`ZU`hi bX`X]Y`HfUX]h]cb`XYg`K Y]bVUi g`]b  
8Yi hgW\_X`UbXž`X]Y`Xi fW\_X` : YghY`k ]Y`X]YgY`YVYbX][ ` [ Y`U`hYb  
k YfXYb`"8]Y`6Ygi W\_XYf`\_ÒbbYb`b]W\_Xh`bi f`K Y]bY`gW\_Xa YW`Ybž  
gcbXYfb`Ui W\_X`a Y`f`ØVYf`X]Y`Yk Y][ ]Y`K Y]bYfY[ ]cb`YfbYb`i bX  
9]bV`]W\_XY`]b`X]Y`K Y]bdfcXi \_h]cb`[ Yk ]bbYb"

## 6Ygi W\_XYfghUh]gh]\_`i bX`9]bni [ g[ YV]YhY

8]Y`Ni bU`a Y`XYf`6Ygi W\_XYfnU`Yb`Ui ZXYa`K Y]bZYgh`]b`i bhYf!  
GWk Ufn`ghY]b` ðX]n`ZØf`XYggYb`Dcdi `Uf]hÀh`"@Ui h`GW\_XÀhni b[ Yb  
fY]ghYb`]b`X]YgYa` ð\`f`a Y`f`U`g`" \$\$\$ ; ÀghY`Ubž`k Ug`Y]bYb`5bgh]Y[  
]a`J Yf[ `Y]W\_X`ni `XYb`J cf`U`fYb`XUfghY`"h`8]Yg`i bhYfghfY]W\_Xh`XUg  
k UW\_XgYbXY` ðhYfYggY`Ub`fY[ ]cbU`Yb`J YfUbghU`hi b[ Yb`i bX`X]Y  
6YXYi hi b[ `XYg`K Y]bZYghg`U`g`5bn]Y`i b[ gdi b`h`ZØf`A YbgW\_XYb`Ui g  
bU`i bX`ZYfb`" ; ÀghY`\_ca`a Yb`b]W\_Xh`bi f`Ui g`i a`]Y[ YbXYb  
GhÀXhYbž`gcbXYfb`Ui W\_X`j cb`k Y]h`Yfž`k ]Y`XUg`6Y]gd]Y`XYg  
DÀfW\_XYbg`Ui g`5`h`Òhh]b[ `nY][ `h"

8]Y`XYa`c[ fUZ]gW\_XY`Ni gUa`a YbgYhni b[ `XYf`6Ygi W\_XYf`]gh`YVYbZU`g  
VYa`Yf`Ybgk`Yfh`" : Ua` ]Y]bž`DUUfY`i bX` ; fi`ddYb`j`cb` : fYi`bXYb  
U`Yf`5`hYfg[ fi`ddYb`[ Yb]Y»Yb`XUg` : Ygh`i bX`hfU[ Yb`ni`f  
]bhYf[ YbYfUh]cbU`Yb`5i`ghUi`gW\_X`VY]"Gc`W\_XY`J YfUbghU`hi b[ Yb  
gW\_XUZYb`F`Ài`a`Yž`]b`XYbYb`g]W\_X`A`YbgW\_XYb`\_Yb`bYb`YfbYb`i`bX  
[ Ya`Y]bgUa`Y`9f]bbYfi`b[ Yb`gW\_XUZYb`\_ÒbbYb"

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