

∅f[ Yb ' ? fYhn ' ]a ' DfUI ]gY]bgUhn. ' 9]bV` ]W\_Y  
]b`X]Y`6Ui a gWxi `Y`@YVYbgfUi a ; UfhYb

9fZU\ fYb`G]Y`]b`i bgYfYa `5fh]\_Y`žk ]Y`XYf  
6i bXYghU[ gUV[ YcfXbYhY`∅f[ Yb`? fYhn`k`À\ fYbX`gY]bYg  
/ ei ch/DfU\_h]\_i a g/ ei ch/`]b`XYf`6Ui a gWxi `Y`@YVYbgfUi a  
; UfhYb`dfUI ]gbU\Y`9]bV` ]W\_Y`]b`X]Y`< YfUi gZcfXYfi b[ Yb`i bX  
7\UbWb`XYf`6Ui a gWxi `k`]fhgW`UZh`Yf`À`h`H\Ya Yb`k`]Y  
6]cX]j`Yfg]h`hž`\_`]a UUb[ YdUgghY`6Ui a UfhYb`i bX`a cXYfbY  
5bVUi a Yh\cXYb`ghY\Yb`]a` : c\_i g" @YgYb`G]Y`a Y\ f`∅VYf`X]Y  
6YXYi hi b[ `XYf`6Ui a gWxi `Yb`Z∅f`Y]bY`bUW\U`h][ Y  
DZUbnYbj Yfk YbXi b[ `i bX`X]Y`XUni [ Y\∅f][ Yb`[ YgYhn`]W`Yb  
FU\ a YbVYX]b[ i b[ Yb"



9]bV` ]W\_Y`]b`X]Y`6Ui a gWxi `k`]fhgW`UZh. `A X6  
∅f[ Yb`? fYhn`Z∅fXYfh`XYb`5i ghUi gW  
nk ]gW`Yb`Dc`h]\_`i bX`DfUI ]g

⇒ a `5i [ i gh`&\$&' `bU\ a `XYf`6i bXYghU[ gUV[ YcfXbYhY`∅f[ Yb`? fYhn  
Ub`Y]bYa `VYgcbXYfYb`Dfc`Y`h`hY]`ž`XUg`XYb`8]U`c[ `nk ]gW`Yb

dc`h]gWkYb`9bhgWkY]Xi b[ ghfÅ[ Yfb`i bX`XYf`6Ui a gWk i `k ]fhgWk UZh  
ghÅf\_Yb`gc`""8]Yg`[ YgWkU\`]a`F U\`a Yb`XYf`b]h]Uh]j Y` DfUi ]g`Z0f  
X]Y`Dc`h]\_ ž`X]Y`XUfUi Z`UVn]Y`hž`dfU\_h]gWkYg`K ]ggYb`i bX  
J YfghÅbXb]g`0VYf`k ]Wk h][ Y`6fUbWkYb`ni`Z0fXYfb`"8]Y`6Ui a gWk i `Y  
@VYbYbYfUi a` ; UfhYbž`[ YZ0\fh]j cb`XYf` : Ua` ]Y`A 0`Yf`gY]h`%-`%ž  
Vch]`a`X]Y`A 0[ `]Wk\_Y]hž`X]Y`DfcnYggY`i bX`<YfUi gZcfXYfi b[ Yb  
XYf`6Ui a gWk i `]bXi ghf]Y`Ui g`YfghYf`<UbX`ni`Yf`YVYb`"

8]Y`6Ui a gWk i `Y`]b`A Ui Yf`YfghfYW\_h]g]Wk`0VYf`VYY]bXfi W\_YbXY` \$  
<Y\_hUf`i bX`\_i`h]j ]Yfhfi bX`%\$`\$`\$`j YfgWk ]YXYbY`DZUbnybUfhYbž  
X]Y`gdYn]Y``Z0f`XUg`\]Yg][ Y`?`]a`U`Ui g[ Yk`Å`h`k`i`fXYb`" `?`fYhn  
\UhY`X]Y` ; Y`Y[ Yb`Y]hž`g]Wk`a` ]h`XYb`Xcfh][ Yb`DZUbna`Yh`cXYb  
Ui gY]bUbXYfni`gYhnYb`i bX`gY`Vgh`dfU\_h]gWkY`9fZU\fi b[ Yb`ni  
gUa`a`Y`bž]bXYa`Yf`Y]bYb`5dZY`VUi a`gWk`b]hhi`bX`j`YfYXY`hY`"  
8]YgY`A`Yh`cXYb`g]bX`b]Wk`h`bi`f`hfUX]h]cbY``ž`gcbXYfb`Ui`Wk  
YbhgWkY]XYbX`Z0f`X]Y`K`Y]hYfYb`hk`]W`i`b[ `bUWk`\U`h][ Yf`DfU\_h]\_Yb  
]b`XYf`6Ui a gWk i `k ]fhgWk UZh`"

K`Å`fYbX`gY]bYg`DfU\_h]\_i`a`g`X]g\_i`h]YfhY`?`fYhn`[`Ya`Y]bgUa`a` ]h  
XYb`b`UVYfb`7`f]gh]Ub`i`bX`K` ]`\Y`a`A`0`Yf`0VYf`VYXYi`hYbXY  
H`Y`a`Yb`k`]Y`X]Y`5i`gk`]f\_i`b[ Yb`XYg`9i`B`Uhi`fY`F`Yg`hcfUh]cb`@Uk`g  
Ui`ZX]Y`6fUbWkY`gck`]Y`XUg`DfcV`Ya`V`0fc`fUh]gWkYf`<0fXYbž`X]Y  
Yg`XYb`6Ui a gWk i `Yb`YfgWk`k`YfYbž`YZ]n]Ybh`ni`UfVY]hYb`"9g`k`i`fXY  
XYi`h]Wk`ž`XUgg`X]Y`6Ui a gWk i `Yb`j`cf`XYf`<YfUi`gZcfXYfi`b[ `ghY`Ybž  
XYb`?`]a`Uk`UbXY`ni`VYf0W\_g]Wk`h][ Yb`i`bX`X]Y`K`UggYfj`Yfgcf[`i`b[  
bUWk`\U`h][ `ni`[`YghU`hYb`"5b[`Yg]Wk`hg`ghY][`YbXYf`HYa`dYfUhi`fYb  
i`bX`K`UggYf\_bUdd`Y]h]g]bX`X]Y`5i`gk`U`\`i`bX`5bdZUbni`b[  
[`YY][`bYhYf`6Ui a`UfhYb`j`cb`nYbhfU`Yf`6YXYi`hi`b[ `Z0f`X]Y`Ni`\_i`bZh  
XYf`6fUbWkY`"

8Yf`5i`ghUi`gWk`nk`]gWkYb`?`fYhn`i`bX`XYb`6YhfYi`Yfb`XYf  
6Ui a gWk i `Y`k`Uf`[`YdfÅ[`h]j`cb`Y]bYa`h]YZYb`J`YfghÅbXb]g`Z0f`X]Y  
6YX0fZb]ggY`XYf`6fUbWkY`" `?`fYhn`Åi`»`YfhY`g]Wk`c`d`h]a` ]gh]gWk`0VYf  
X]Y`A`0[ `]Wk\_Y]hž`j`cb`XYb`9f`\_Yb`b`hb]ggYb`X]YgYf` ; YgdfÅWkY`]b`X]Y  
dc`h]gWkY`5fVY]h]b`6Yf`]b`ni`VYf]Wk`hYb`"9f`VYhcb`hYž`k`]Y`k`]Wk`h][  
Yg`gY]ž`X]Y`5b`]Y[`Yb`XYf`6Ui a gWk i `Yb`Yfbgh`ni`bY`a`Yb`i`bX  
YbhgdYfWkYbXY`[`YgYhn`]WkY`F`U`a`Yb`VYX]b[`i`b[`Yb`ni`gWk`UZYb`"

8 Ugg' fYhn'g]W\`VY]`YI hfYa Yb`HYa dYfUhi fYb`]b`X]Y`5fVY]h'ghØfnhYž  
k i fXY`U`g`Y]bY`dcg]hj] Y` ; YghY`k U\ f[ Ybca a Yb`i bX`j cb`A Uf]i g  
HY[ Yh\c ZZ`ghY`j YfhfYhYbXYf` ; YgW\ÀZhgzØ\ fYf`XYg`6i bX`XYi hgW\Yf  
6Ui a gW\i`Yb`f6X6E`Y"J "ž`VYgcbXYfg` [ Yk ØfX][ h"8]YgYf`X]fY`hY  
?cbhU`h`nk ]gW\Yb`Dc`h]\_Yfb`i bX`UbXk ]fhgW\UZh`W\Yb`6Yhf]YVYb  
]gh`YbhgW\Y]XYbXž`i a `@Øgi b[ Yb`ZØf`U`hi Y`Y`< YfUi gZcfXYfi b[ Yb  
ni`Z]bXYb"

⇒g[ YgUa h`nY][ h`XUg`DfU`h]\_i a` j cb`>Øf[ Yb`? fYhn`b]W\h`bi f`X]Y  
Bchk YbX][ \_Y]h`Y]bYg`8]U`c[ g`nk ]gW\Yb`j YfgW\]YXYbYb`GY`hc fYbž  
gcbXYfb`Ui W\`XUg`9b[ U[ Ya Ybh`XYf`6Ui a gW\i`Yb`ZØf`Y]bY  
bUW\`U`h][ Y`i bX`V]cX]j Yfg]h`hgZØfXYfbXY`Ni`\_i bZh`Gc`W\Y  
⇒h]Uh]j Yb`g]bX`Y]b`k ]W\h][ Yf`GW\ f]hhž`i a` ni`j Yfgh`Y`Ybž`k ]Y`Dc`h]\_  
i bX`c`\_U`Y`K ]fhgW\UZh`< UbX`]b`< UbX` [ Y\Yb`\_ØbbYb`"Bi f`Xi fW\  
Y]bY`Yb[ Y`Ni gUa a YbUfVY]h`\_Ubb`XYf`GW\i hn`i bgYfYf`BUhi f`i bX  
X]Y`5bdUggi b[ `Ub`XYb`?`a Uk UbXY`[ Y`]b[ Yb"

8YhU]`g

6Ygi W\Yb`G]Y`i bg`Ui Z.`a Y]b!VYf`]b"bYh