

: fUb\_Zi fhYf`G]W\Yf\Y]hgc ZZYbg]j Y. `Dc`]nY]  
n]Y\h`YfZc`[ fY]W\Y`6]`Ubn

6]`Ubn`XYf`Dc`]nY]!`cbhfc`Yb`]b` : fUb\_Zi fh`%- +`DYfgcbYb  
ØVYfdfØZhž&, `5bnY][ Yb`i bX`&` : YghbU\`a Yb`ni f`GhÅf\_i b[  
XYf`G]W\Yf\Y]h"

⊕` : fUb\_Zi fh`k i fXY`Ua `&&"5i [ i gh&\$&( `Y]bY`[ fc» Ub[ Y`Y[ hY  
Dc`]nY]U\_h]cb`Xi fW [ YZØ\fhž`X]Y`HY]`XYf` ⊕bYbghUXhc ZZYbg]j Y  
[ Y[ Yb`?`f]a ]bU`hÅh` ]gh`N]Y`X]YgYf`?cbhfc`a U» bU\`a Yb`k Uf`Ygž  
XUg`G]W\Yf\Y]hg[ YZØ\`XYf`6Øf[ Yf`ni `ghÅf\_Yb`i bX`dchYbh]Y`Y  
GhfUZhÅhYf`ni `j Yfi bg]W\Yfb`"Fi bX`%) \$`Dc`]nY]VYUa hY`i bX  
l bhYfghØhni b[ g\_fÅZhY`XYf`6i bXYgdc`]nY]`gck ]Y`A ]hUfVY]hYf`XYf  
GhYi YfZU\`bXi b[ `i bX`XYg`CfXbi b[ gUa hYg`k UfYb`k Å\fybX`XYf  
?cbhfc`Yb`]a `9]bgUhn`i bX`Xi fWghfY]ZhYb`X]Y`⊕bYbghUXh"

8]Y`Dc`]nY]`\_cbhfc`]YfhY`X]Y`6YfY]W\Y`j ca `?U]gYfhcfž`ØVYf`X]Y  
?U]gYfghfU» Y`V]g`ni f`<Ui dhk UW\Y`i bX`ni f`NY]`gck ]Y`ni a  
5`Yf\Y][ Ybj ]YfhY`"⊕g[ YgUa h`k i fXYb`%- +`DYfgcbYb`ØVYfdfØZhž  
k Ug`ni `&, `GhfUZUbnY][ Yb`ZØ\fhY`"Nk Y]`A ÅbbYf`k i fXYb  
ZYgh[ Ybca`a Yb`i bX`gc`hYb`Y]bYa `6YfY]hgW\UZhgf]W\hYf`j cf[ YZØ\fh  
k YfXYb`"8]YgY`DfÅgYbn`gc`Y`ZYbž`X]Y`cV`Y\_h]j Y`G]W\Yf\Y]hg`U[ Y  
ni `j YfVYggYfb`i bX`XYf`6YgW\k YfXYb`j cb`5bk c\`bYfb`i bX  
; YgW\ÅZhg]b\UVYfb`Ybh[ Y[ Ybni`k ]f\_Yb"

### 8 YhU]`g`ni `XYb`?cbhfc`a U» bU\`a Yb

6YgcbXYfg`Ui ZÅ`][ `k Ufž`XUgg`X]Y`?cbhfc`Yb`b]W\h`bi f`DYfgcbYbž  
gcbXYfb`Ui W\ [ Ughfcbca ]gW\Y`6Yhf]YVY`VYhfUZyb`"; Y[ Yb`%\*`) \$  
l \f`k i fXYb`j ]Yf`; UghghÅhYb`]b`XYf`A cgY`!`i bX`A ØbW\`bYf`GhfU» Y  
\_cbhfc`]Yfhž`k c`j YfghØ» Y`[ Y[ Yb`X]Y`5V[ UVYcfXbi b[ `gck ]Y  
5i ZYbh\`U`hgj YfghØ» Y`ZYgh[ YghY`h`k i fXYb`"9]b`k Y]hYfYf`j cfZU`

YfY][ bYhY'g]W\ [ Y[ Yb'%, "\$\$'l \fz'U'g'Y]b'A Ubb'Ua '?U]gYfhcf  
Ui Z[ Y[ f]ZYb'k i fXYž'XYf'a ]h'Y]bYf'5i ZYbh\U'hgj YfVchgj YfZØ[ i b[  
ZØf'XUg'6U\ b\cZgj ]YfhY''Ub[ YhfcZZYb'k i fXY''8]YgY'DYfgcb'k i fXY  
V]g]b'X]Y'ZfØ\Yb'A cf[ Ybghi bXYb']b'; Yk U\fgUa '[ Ybca a Yb"

Ni gÀhn`]W\ 'k i fXYb'i a '%+' "\$'l \f'Ub'XYf'GhUi ZYba Ui Yf'+  
DYfgcbYb'Y]bYf'?cbhfc''Y'i bhYfnc[ Ybž'X]Y'ni 'a Y\ fYfYb  
GhfUZUbny][ Yb'k Y[ Yb'J YfghØ» Yb' [ Y[ Yb'XUg'5i ZYbh\U'hg! 'gck ]Y  
XUg'6YhÀi Vi b[ ga ]hhY'[ YgYhn'ZØ\fhYb''9]b'k Y]hYfYg'6Y]gd]Y'k Uf  
X]Y'?cbhfc''Y'j cb'&\*'DYfgcbYb']b'XYf'5''Yf\Y][ YbghfU» Y'[ Y[ Yb  
&%"\$\$'l \fz'VY]'XYf'Y]b'HY'Yg\_cdgW\U[ ghcW\_g]W\Yf[ YghY''h'k i fXYž  
k Ug'Y]bYb'J Yfghc» '[ Y[ Yb'XUg'K UZZYb[ YgYhn'XUfghY''h"

8]Y'A U» bU\ a Yb'g]bX''Ui h'Dc`nY]'HY]'Y]bYg'\_cbh]bi ]Yf']W\Yb  
5bgUhnYgž'i a 'X]Y'G]W\hVUf\_Y]h'XYf'C fXbi b[ g\_fÀZhY'ni 'Yf\Ø\Yb  
i bX'Ui ZcZZYbg]W\h]W\Y'DfcV'Ya Y'ni 'fYU[ ]YfYb''8]YgY'DfÀgYbn  
i bX'X]Y'[ Yn]Y'hYb'?cbhfc''Yb'gc''Yb'Ui W\XUni 'X]YbYbž  
A Y\ fZUW\hÀhYf'a ]h'YZZY\_hj] Yb'N]Y'Yb'ni '\_cbZfcbh]YfYbž'i a 'X]Y  
GhfUZhUhYb'ni 'gYb\_Yb"

## Dcg]h]j Y'F YgcbUbn'Ui g'XYf'; Ya Y]bgW\UZh

8]Y'F YU\_h]cbYb'j cb'; Yk YfVYhfY]VYbXYbž; Ughfcba Yb'i bX  
DUggUbhYb'Ui ZX]Y'dfÀgYbh]YfhYb'A U» bU\ a Yb'k UfYb'Xi fW\k Y[  
dcg]h]j "'J ]Y'Y''cVhYb'X]Y'g]W\hVUfY'DfÀgYbn'XYf'Dc`nY]'b'XYf  
=bbYbghUXhž'k Ug'Y]b'XYi h]W\Yg'NY]W\Yb'XUZØf']ghž'XUgg'X]Y  
A U» bU\ a Yb'XYf'Dc`nY]'b]W\h'bi f'U'g'bchk YbX][ ž'gcbXYfb'Ui W\  
U'g'i bhYfghØhnYbX'Ya dZi bXYb'k YfXYb"

Gc`W\Y'9]bgÀhmY'g]bX'Y]bYb'nYbhfU'Yb'6YghUbXhY]'XYf  
G]W\Yf\Y]hgghfUhY[ ]Y'XYf'GhUXh: fUb\_Zi fh''8]Y'Dc`nY]'VYUVg]W\h][ hž  
X]YgY'?cbhfc''a U» bU\ a Yb'fY[ Y'a À» ][ 'Xi fW\ni ZØ\ fYbž'i a 'X]Y  
G]W\Yf\Y]h'ni 'Yf\Ø\Yb'i bX'XYb'6Øf[ Yfb'Y]b'; YZØ\`XYf'G]W\Yf\Y]h  
ni fØW\_ni [ YVYb"

≠'XYf'U\_hi Y''Yb'NY]hž'k c'j ]Y'Y'A YbgW\Yb'g]W\']b'i fVUbYb  
FÀi a Yb'i bg]W\Yf'ZØ\Ybž'\_ØbbYb'gc`W\Y'J YfUbgH'hi b[ Yb'k ]Y'X]Y  
XYg'&'5i [ i ghi&\$&( 'Y]bYb'Yb'hgW\Y]XYbXYb'6Y]hfU[ 'ni f

J YfVYggYfi b[ 'XYf'G]hi Uh]cb`Y]ghYb"9g'V`Y]Vh'UVni k UfhYbž'k ]Y  
X]YgY'[ Ya Y]bgUa Yb'5bghfYb[ i b[ Yb'XYf'Dc`nY]'i bX'XYb  
ghÅXh]gWYb'`bgh]hi h]cbYb`Ub[ Zf]gh][ 'XUg'G]WYf\Y]hg[ YZØ\`']b  
: fUb\_Z fhj YfÅbXYfb'k YfXYb"

## 9]b'GWX f]hh']b'F ]WX hi b[ 'G]WYf\Y]h

8]Y'\_cbhfc`']YfhYb'A U» bU\`a Yb'g]bX'a Y\`f'U`g'bi f'Dc`nY]dfÅgYbn'  
g]Y'gma Vc`g]YfYb'Ui W'XYb'K ]`Yb'XYf'GhUXh: fUb\_Z fhž'U\_hj  
[ Y[ Yb'?f]a ]bU`]hÅh'i bX'l bcfXbi b[ 'j cfni [ Y\Yb'i bX'XY  
@YVYbgei U`]hÅh']\fYf'6Øf[ Yf'ni 'j YfVYggYfb"Å ]h'fY[ Y'a Å» ][ Yb  
'?cbhfc`'Yb'k ]`X]Y'Dc`nY]'nY][ Ybž'XUgg'G]WYf\Y]h'\_Y]b'@ l i gž  
gcbXYfb'Y]b'; fi bXfYW'h]gh"

## < ]bhYf[ fi bX'XYf'`bYbghUXhc ZZYbg]j Y

8]Y' `bYbghUXhc ZZYbg]j Y'[ Y[ Yb'?f]a ]bU`]hÅh'`k i fXY'ja  
GYdhYa VYf'&\$&&]bg'@YVYb'[ Yfi ZYbž'i a 'X]Y'G]WYf\Y]h']b'XYb  
i fVUbYb'NYbhYb'<YggYbg'ni 'Yf\Ø`Yb"5b[ Yg]W'hg'Ub\U`hYbXYf  
6Yf]W'hY'ØVYf'?f]a ]bU`]hÅh'ž'j cf'U`Ya ']'b'; fc» ghÅXhYb'k ]Y  
: fUb\_Z fhž'k i fXY'X]Y'`Bchk YbX][ '\_Y]h'VYhcbhž'Y]bY'ghÅf\_YfY  
Dc`nY]dfÅgYbn'ni 'YhUV`]YfYb"8]Y'`C ZZYbg]j Y'n]Y'h'XUfUi ZUVž  
gck c\`X]Y'cV'Y\_h]j Y'G]WYf\Y]hg'U[ Y'U`g'Ui W'XUg  
G]WYf\Y]hg[ YZØ\`'XYf'6Øf[ Yf'ni 'j YfVYggYfb"8Uni 'YfZc`[ h'Y]bY  
Ni gUa a YbUfVY]hj cb'j YfgW]YXYbYb'6Y\ØfXYbž'Y]bgW`Y» `]W  
XYf'6i bXYgdc`nY]'i bX'`c\_U`Yb'`CfXbi b[ gÅa hYfbž'X]Y'[ Ya Y]bgUa  
A U» bU\`a Yb'ni f'?f]a ]bU`]hÅhgVY\_Åa dZ b[ 'Xi fWZØ\`fYb"

9]b'k ]W'h][ Yf'5gdY\_h'X]YgYf'`b]h]Uh]j Y'g]bX'X]Y'fY[ Y'a Å» ][ Yb  
'?cbhfc`'Yb']b'?f]gYb[ YV]YhYbž'X]Y'cZh'a ]h'Y]bYa '5bgh]Y[ 'j cb  
8fc[ Yb\UbXY`i bX'UbXYfYb']`Y[ U`Yb'5\_h]j ]hÅhYb'j YfVi bXYb'g]bX"  
8]Y'Dc`nY]'fYU[ ]Yfh'gca ]h'b]W'h'bi f'Ui Z'U\_hi Y`Y'J cfZÅ`Yž'gcbXYfb  
j Yfgi W'h'dfÅj Ybh]j 'hÅh][ 'ni 'k YfXYb"

## 9f[ YVb]ggY'i bX'FYU\_h]cbYb'XYf'?cbhfc`'Yb

8]Y'9f[ YVb]ggY'XYf'Øb[ ghYb'?cbhfc`'Yb'nY][ Yb'Y]bYb'XYi h]WYb

9fZc`[ `XYf`A U» bU\`a Yb" `A ]h%- + ` \_cbhfc``]YfhYb`DYfgcbYb`i bX`&,  
GhfUZUbnY][ Yb`]bbYf\U`V`k Yb][ Yf`Ghi bXYb`gd]Y[ Y`h`g]W\`Y]bY  
U\_h]j Y`J cf[ Y\Yb`gk Y]gY`k ]XYf" `Gc`W\`Y`?cbhfc``Yb`g]bX`b]W\`h`b`i`f`  
g]bbj c``ž`i`a` `GhfUZh`h`f`ni` ]XYb]Z]n]YfYbž`gcbXYfb`Ui W\`ž`i`a` `Y]b  
NY]W\`Yb`XYf`Df`Ā`gYbn`ni` `gY`h`n`Yb" `8]Yg`\_`Ö`b`b`h`Y`ni` `Y]bYa` `F`Ø`W`\_`[`Ub`[  
j`cb` `GhfUZh`U`h`Yb`]b`X]YgYb`; YV]Yh`Yb`ZØ`f`Ybž`XU`d`c`h`Yb`h]Y``Y  
?f]a` ]bY``Y`g]W\`i`bg]W\`YfYf`ZØ`f`Ybž`k`Yb`b`g]Y`k` ]ggYbž`XU`gg`X]Y  
Dc`]nY]`U\_h]j` `i`b`X`g]W\`h`V`U`f`]a` `9]bgU`h`n`]gh`

; Yk YfVYhfY]VYbXY`gck ]Y`5bk c\`bYf`Ā`i » Yfb`g]W\`d`c`g]h]j` `Ø`V`Yf`X]Y  
j`Yfgh`Ā`f`\_`h`Yb`G]W\`Yf`Y]hga U» bU\`a Yb" `8]Y`j`Yfgh`Ā`f`\_`h`Y  
Dc`]nY]d`f`Ā`gYbn`k` ]fX`c`Z`h`U`g`Y]bY`9f`\`Ö`i`b`[ `XYg`G]W\`Yf`Y]hg[ YZØ`f`g  
k`U`f`[ Ybca`a`Ybž`k`Ug`Y]bYb`k`Yf`h`j`c``Yb`6Y]h`f`U`[ `ni`f`  
@YVYbgei`U`]h`Ā`h`]b`XYf`f`b`Yb`gh`U`X`h`Y]ghYb`\_`U`b`b``: Y`Y`X`V`U`W`\_`g`c`k`c`\`  
j`cb`; YgW\`Ā`Z`h`g]b`UVYfb`U`g`Ui`W\`j`cb`6Ygi`W\`Yfb`XYf`Gh`U`X`h`\`U`h`X]Y  
B`c`h`k`Yb`X][`\_`Y]h`g`c`W\`Yf`?cbhfc``Yb`i`b`h`Y`f`g`h`f]W\`Ybž`V`Y`g`c`b`X`Y`f`g`]b  
n`Y`b`h`f`U`Y`b`i`b`X`Z`f`Y`e`i`Y`b`n]Y`f`h`Y`b`6`Y`f`Y]W\`Y`b``

## GhUh]gh]\_Yb`ni`f`?`f]a` ]bU`]h`Ā`h`]b` :`f`U`b`\_`Z`i`f`h`

5\_hi`Y``Y`GhUh]gh]\_Yb`Ui`g`XYf`Dc`]nY]`]W\`Yb`?`f]a` ]bU`ghUh]gh]\_`f`D`?`G`Ě  
V`Y`Y`[ Ybž`XU`gg` :`f`U`b`\_`Z`i`f`h`]a` `J`Y`f`[ `Y]W\`ni` `U`b`X`Y`f`Y`b`Gh`Ā`X`h`Y`b`]b  
8Yi`hgW\`U`b`X`Y]bY`\`c`\`Y`?`f]a` ]bU`]h`Ā`h`g`f`U`h`Y`Ui`Z`k`Y]gh" `a` `f`U`f`&`\$`&`&  
k`i`f`X`Y`b`Ø`V`Y`f`)` )`"\$`\$`\$`GhfUZh`U`h`Y`b`f`Y`[ ]ghf]Yfhž`k`c`V`Y]`X]Y`a`Y]ghYb  
j`cb`]b`Y`b`]b`gh`Ā`X`h`g]W\`Y`b`; YV]Yh`Yb`ž`]bgV`Y`g`c`b`X`Y`f`Y`f`i`b`X`i`a` `XY`b  
:`f`U`b`\_`Z`i`f`h`Y`f`<`U`i`d`h`V`U`\`b`\`c`Z`ž`j`Y`f`n`Y]W\`b`Y`h`i`k`i`f`X`Y`b`"

8fc[ Yb`f]a` ]bU`]h`Ā`h`i`b`X`; Yk`U`h`j`Y`f`V`f`Y`W\`Y`b`n`Ā`\`Y`b`ni` `XY`b  
\`Ā`i`Z][`ghYb`8Y`]\_`h`Y`b" `8]Y`\`Y`gg]g`W\`Y`Dc`]nY]`U`f`V`Y]h`Y`h`\_`c`b`h]b`i` ]Y`f`]W\`  
X`U`f`U`b`ž`X]Y`g`Y`N`U`\`Y`b`ni` `g`Y`b`\_`Y`b`ž`i`b`X`X]Y`f`b`Y`b`gh`U`X`h`c`Z`Y`b`g]j`Y`]gh  
Y]b`k`Y`g`Y`b`h`]W\`Y`f`6`Y`gh`U`b`X`h`Y`]`X]Y`g`Y`f`Gh`f`U`h`Y`[ ]Y`"  
G]W\`Y`f`i`b`[`ga`U»`b`U`\`a`Y`b`ž`X]Y`Ui`Z`X`Y`f`J`]Y`n`U`\`j`cb`f`Y`[ ]ghf]Y`f`h`Y`b  
GhfUZh`U`h`Y`b`V`U`g]Y`f`Y`b`ž`g`c``Y`b``U`b`[`Z`f]gh][`ni` `Y]b`Y`f`F`Y`X`i`n]Y`f`i`b`[`j`cb  
?`f]a` ]bU`]h`Ā`h`V`Y]h`f`U`[`Y`b`"

:`Ø`f`k`Y]h`Y`f`Y`f`b`Z`c`f`a`U`h]c`b`Y`b`Ø`V`Y`f`X]Y`?`f]a` ]bU`]h`Ā`h`g`h`U`h]gh]\_Yb`i`b`X  
X]Y`9`b`h`k`]W`\_`i`b`[`Y`b`]b` :`f`U`b`\_`Z`i`f`h`\_`U`b`b`i`Ui`Z`X]Y`c`Z`Z]n]Y``Y  
<`ca`Y`d`U`[`Y`X`Y`f`\`Y`gg]g`W\`Y`b`Dc`]nY]`j`Y`f`k`]Y`g`Y`b`k`Y`f`X`Y`b`"

8YhU]g

6Ygi W\Yb`G]Y`i bg`Ui Z.`b!U[ "XY