

B UWX hg`]a `: `i [ j Yf\_Y\ f. `6 9F !: `Ø[ Y `b UWX  
< Ubbcj Yf`i bX`@Y]dn][ `UV[ YXfY\ h

J YfgdÀhYhY` : `Ø[ Y `Ua `6 9F `a ØggYb`bUWX` < Ubbcj Yf`i bX  
@Y]dn][ `Ui gk Y]WX Ybž`XU`B UWX hZi [ j YfVch`YffgWX`h"  
8]g\_i gg]cb`ØVYf`FY[ Y`i b[ Yb`YbhVf]WX`h"

8 Ug`B UWX hZi [ j YfVch`i bX`gY]bY  
5i gk ]f\_i b[ Yb`Ui Z`X]Y`@i ZhZU\ fh

8]Y`ghfYb[ Yb`J cfgWX`f]ZhYb`\ ]bg]WX`h]WX`XYg`B UWX hZi [ j YfVch`g`Ua  
: `i [ \ UZYb`6Yf`]b`6fUbXYbVi f[ `fB 9F Ł[ YfUhYb`ni bY\ a YbX`]b`X]Y  
8]g\_i gg]cbž`bUWX XYa`\_Øfn`]WX`j YfgdÀhYhY` : `Ø[ Y `b UWX` < Ubbcj Yf  
i a [ Y`Y]hY`h`k`i fXYb`"8]YgY`G]hi Uh]cb`k`]fZh: fU[ Yb`Ui Z`ØVYf`X]Y  
: U]fbYgg`i bX`5b[ Ya`YggYb\Y]h`XYf`VYghY\YbXYb`FY[ Y`i b[ Ybž`X]Y  
j cf`nk`Y]`J\fnY\bhYb`ni a`GW`i`m`XYf`5bk`c`bYf`j`cf: `i [ `Àfa  
Y]b[ YZØ\fh`k`i fXYb`"

J YfgdÀhi b[ Yb`i bX`I a`Y]hi b[ Yb

5a`GUa`ghU[ ž`XYa`i`&"`5i [ i ghž`Yf`YVhY`XYf`9i`fck]b[ gl: `i [ `) , ` %  
j`cb`5`]WUbhY`Y]bY`g][ b]Z]\_UbhY`J YfgdÀhi b[ ž`X]Y`YX][ `Y]WX`Ui`Z  
VY[ fYbnhY`@UbXYnY]hYb`Ua`6 9F`ni`fØW`ni`ZØ\`fYb`k`Uf`"8Yf: `i [   
gc`hY`i`fgdfØb[ `]WX`i`a`i`&\$.&`i`f`UV\YVYb`i`bX`i`a`i`&`.&`i`f`]b  
6Yf`]b`UbXYb`"5i`Z[ fi`bX`Yf\YV`]WX`Yf`J`YfnØ[ Yfi`b[ Yb`ghUfhYhY`X]Y  
A`UgWX]bY`YXcWX`Yfghi`a`i`&%.`i`f`i`bX`YffY]WX`hY`XYb: `i [ \ UZYb  
\_i`fn`bUWX`A`]hYfbUWX`hž`k`Ug`XUg`B UWX hZi [ j YfVch`ni`f: c`[ Y`\UhY`  
⊕ , ( `A`YhYfb`<`Ø\Y`Yb`hgWX]YXYb`X]Y`D]`chYbž`bUWX` < Ubbcj Yf  
i`a`ni`Y]hYbž`XU`Y]bY`@UbXi`b[ `ni`X]YgYa`NY]hdi`b`\_h`b]WX`h`a`Y`f  
a`Ø[ `]WX`k`Uf`"8]Y`&%&`DUggU[ ]YfY`UbXYhYb`gca`]hi`bYfk`UfhYh]b  
XYf`b]YXYfg`ÀWX`g]gWX`Yb`@UbXYg`Ui`dhghUX`hž``\$\$`?`]ca`YhYf`k`Ygh]WX  
j`cb`6Yf`]b"

## 8 Ug`B UW hZi [ j Yfvch. `K Ufi a `]gh`Yg`k ]W h][ 3

8 Ug`B UW hZi [ j Yfvch`Ua `69F `[ ]`h`j cb`&` .` \$`V]g)` .` \$`I `fž`k cVY]  
bi f`VY[ fYbnhY`5i gbU`a Yb`Z0f`FY[ ]Yfi b[ g!`i bX`FYhhi b[ gZ0[ Y  
VYghY`Yb``8]YgY`FY[ Y`i b[ `k i fXY`Y]b[ YZ0`fhž`i a `X]Y`5bk c`bYf  
j cf`b`W h]W Yb`Gh0fi b[ Yb`Xi fW :`i [ `Àfa`ni`gW`0hnYb``F cVYfh  
9fhYf`j cb`XYf`8Yi hgW`Yb`i`i [ g]W`Yfi b[ `fB: GŁ`Yf`\_`Àfhž`XUgg  
6YgW`k YfXYb`j cb`5bk c`bYfb`Ub`j ]Y`Yb`i`i [ `ÀZYb`k`Y]h  
j YfvfY]hYhg]bX``8]Yg`Z0`fh`XUni`ž`XUgg]a`a`Yf`k`]YXYf`0VYf`X]Y  
5b[ Ya`YggYb`Y]hgc`W`Yf`FY[ Y`b`X]g`i`h]Yfh`k`]fX"

## J YfgW ]YVi b[ `XYf`:`i [ n]Y`Y. `9]bY`[ `Ab[ ]][ Y DfUI ]g

@Ui`h`9fhYf`]gh`X]Y`I`a`Y]hi b[ `j`cb`i`i [ nYi [ Yb`k`Y[ Yb  
J Yfgd`Àhi b[ Yb`Y]bY`5i gbU`a`Yž`k`À`fYbX``Ài`Z[ Y`Y`bXYfi b[ Yb  
Ui`Z[ fi bX`j`cb`K`YhYfVYX]b[ i b[ Yb`j`Y`Y`Ài`Z[ Yf`j`cf`\_`ca`a`Yb`"  
<`Ài`Z[ `bi`hnYb`5]f`]bYg`<`Ubbcj`Yf`i`bX`@Y]dn][ `U`g  
5i`gk`Y]W`Zi [ `ÀZYbž`XU`X]YgY`]b`XYf`B`À`Y`j`cb`6Yf`]b``]Y[ Yb`i`bX  
\_Y]bY`B`UW`hZi [ j YfvchY`UVYb``6Y]`gW`YW`hYa`K`YhYf`\_`0bbYb  
YXcW`Ui`W`k`Y]hYf`Yb`hZYfb`hY`:`i [ `UZYb`Ub[ YZc[ Yb`k`YfXYbž`k`Ug  
X]Y`:`YI`jV]`h`À`XYf`5]f`]bYg`k`À`fYbX`i`b[ 0bgh][ Yf`6YX]b[ i b[ Yb  
j`YfXYi`h]W`h"

## F YU`\_h]cbYb`XYf`5]f`]bYg

≠`Y]bYf`GhY``i b[ bU`a`Y`VYhcbh`XYf`GdfYW`Yf`j`cb`9i`fck`]b[ gž  
:`cf]Ub`i`f`ÀbnX0fZZYfž`XUgg`XUg`I`bhYfbY`a`Yb`ghYhg`VYghfYVh`]ghž  
J Yfgd`Àhi b[ Yb`ni`a`]b]a`]YfYb`i`bX`DUggU[ ]YfY`ni`a`j`cf[ YgY`YbYb  
N]Y`ni`Vf]b[ Yb``8U`Yg`g]W`VY]a`B`UW`hZi [ j Yfvch`i`a`Y]bY  
[ YgYhn`]W`ZYgh[ Y`Y[ hY`FY[ Y`i b[ `UbXY`hž`a`0ggYb  
:`i [ [ YgY``gW`UZhYb`X]YgY`VYZc`[ Yb``Gc`a`i`gghYb`VYfY]hg`a`Y`fYfY  
:`0[ Yž[ YfU`hYb`Xi`fW`À`b`]W`Y`G]hi`Uh]cbYbž`bUW`gd`À`hYfYb  
I`f`nY]hYb`]b`U`hYfb`Uh]j`Y`:`i [ `ÀZYb`i`a`[ Y`Y]hYh`k`YfXYb"

8]Y`I`a`Y]hi b[ `Y]bYg`k`Y]hYfYb`9i`fck`]b[ g!`i`i [ g]j`cb`<`YfU`\_]cb`Ub  
XYb`XUfUi`Zc`[ YbXYb`HU[ Yb`VYgh`Àh][ hY`bi`f`X]Y

<YfUi gZcfXYfi b[ Ybž'X]Y'XYf'@ Zhj Yf\_Y\fgdYn]Y'']b'XYf  
<cWfY]gYnY]h'a ]h'g]W'Vf]b[ h''8]Yg'k ]fZi: fU[ Yb'ØVYf'X]Y  
K ]f\_gUa \_Y]h'XYg'VYghY\YbXYb'B UW hZi [ j YfVchg'Ui Zi bX'cV  
ni \_ØbZh][ Y'5bdUggi b[ Yb'XYf'[ YgYh'W]Yb'FY[ Y'i b[ Yb  
ØVYf\Ui dh'XYb\_VUf'g]bX"

: Un]h. ': `]Y[ Yb']a 'GdUbbi b[ gZY`X`nk ]gW Yb  
FY[ Y`k Yf\_`i bX'FYU`]hÅh

8]Y'8]g\_i gg]cb'i a 'XUg'BUW hZi [ j YfVchi bX'X]Y'I a `Y]hi b[ 'j cb  
j YfgdÅhYhYb': `Ø[ Yb'j YfXYi h']W'h'X]Y'\_ca d`YI Yb'6Yn]Y\i b[ Yb  
nk ]gW Yb'G]W Yf\Y]hgj c fgW f]ZhYbž'5bk c\ bYf]bhYfYggYb'i bX'XYb  
5bZcfXYfi b[ Yb'XYf'@ ZhZU\fh]bXi ghf]Y" K Å\ fYbX'X]Y'FY[ Y'i b[ Yb  
]a '9bXYZY\_h'XUni `X]YbYbž'X]Y'@VYbgei U`]hÅh'XYf'5bk c\ bYf'ni  
[ Yk Å\ f`Y]ghYbž'ghY\Yb'g]Y`U\_hi Y'']a 'GdUbbi b[ gZY`X`a ]h'XYb  
dfU\_h]gW Yb'<YfUi gZcfXYfi b[ Yb'XYf'@ ZhZU\fh''8]Y': fU[ Y`V`Y]Vhž  
cV`Y]bY'5bdUggi b[ `XYf'F]W'h']b]Yb'bchk YbX][ `]ghž'i a `X]Y  
Ni Zf]YXYb\Y]hgck c\`XYf'FY]gYbXYb`U`g'Ui W'XYf'5bk c\ bYf'ni  
[ Yk Å\ f`Y]ghYb"

8YhU]`g

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