

GWk YfYf'I bZU``nk]gWYb'9!GWŁchYf'i bX F UXZU\ fYf']b' < UggY`fch\

9]b'gWk YfYf'I bZU``YfY][bYhY'g]W'Ua'BUW a]hU[']b'XYf
FY[]cb' < UggY`fch\ ž'U'g'Y]b' %&! Ā\ f][Yf' š b[Y'VY]a' : U\ fYb
a]h'gY]bYa' 9!GWŁchYf'Y]bYb' * * ! Ā\ f][Yb' F UXZU\ fYf' ØVYfgU\ "
8Yf' J cfZU``YfY][bYhY'g]W' [Y[Yb' %* "" \$' I \ f'Ui ZY]bYa
F UXk Y[ž'XYf'nk]gWYb' < UggY`fch\!BYi Yb\U» `Ui' i' bX
@Ub[YbgY'Vc`X'j Yf' Āi Zh" 8Yf' š b[Y' _Ua' d` Õh`]W'Ui' g'Y]bYa
: Y`Xk Y['i bX'Yg' _Ua' ni' Y]bYf' ? c``]g]cb ž'X]Y'VY]XYb'

9]b'gWk YfYf'I bZU``YfY][bYhY'g]W'Ua'BUW a]hU[']b'XYf'FY[]cb
< UggY`fch\ ž'U'g'Y]b' %&! Ā\ f][Yf' š b[Y'VY]a' : U\ fYb'a]h'gY]bYa' 9!
GWŁchYf'Y]bYb' * * ! Ā\ f][Yb' F UXZU\ fYf' ØVYfgU\ " 8Yf' J cfZU``
YfY][bYhY'g]W' [Y[Yb' %* "" \$' I \ f'Ui ZY]bYa' F UXk Y[ž'XYf'
nk]gWYb' < UggY`fch\!BYi Yb\U» `Ui' i' bX'@Ub[YbgY'Vc`X'j Yf' Āi Zh"
8Yf' š b[Y' _Ua' d` Õh`]W'Ui' g'Y]bYa' : Y`Xk Y['i bX'Yg' _Ua' ni' Y]bYf'
? c``]g]cb ž'X]Y'VY]XYb' 6YhY']][hYb'Yf\YV`]W'Y' J Yf'Yhni b[Yb
ni ZØ[hY"

8Yf' F UXZU\ fYf' ž'k c\ b\ UZi']b' < UggY`fch\ ž'hfi ['nk Uf'Y]bYb
: U\ ffUX\Y'a ž'Yf']h'YXcW'gWk YfY' ; Yg]W'hgj Yf'Yhni b[Yb"BUW
XYa' Ni gUa' a Ybghc» 'k i fXY'Yf'i a [Y\YbX'a]h'Y]bYa
FYhni b[gk U[Yb']b'Y]b' ? fUb_ Yb\Ui' g'hfUbgdcfh]Yfh" 8]Y
J Yf'Yhni b[Yb'XYg' š b[Yb'\]b[Y[Yb'ghY`hYb'g]W'U'g' [fUj]YfYbXYf
\YfUi' g" 9f'\UhhY'ghUf_Y'5hYa VYgWk YfXYb'gck]Y
? cdZ] Yf'Yhni b[Yb ž'X]Y'Y]bYb'9]bgUhn'Y]bYg
FYhni b[g\i VgWfUi VYfg' bchk YbX]['a UW'hYb"

8YhU]`g'ni a' I bZU``\Yf[Ub[

8Yf'I bZU``YfY][bYhY'g]W'Ui ZY]bYa' 6YfY]W'ž'XYf'c Zh'gck c\`j cb
F UXZU\ fYfb'U'g'Ui W'j cb'9!GWŁchYf'!: U\ fYfb' [Ybi mnh'k]fX" 8]YgY

Ni bU\ a Y' j cb`Y`Y_hf]gW\`VYhf]YVYbYb': cfhVYk Y[i b[ga]hhY`b
Vf]b[h'byi Y`<YfUi gZcfXYfi b[Yb`ZØf`X]Y`J Yf_Y\fgg]W\Yf\Y]h'a]h
g]W\`"9g`gW\Y]bhž`XUgg`XYf`š b[Y`VY]a`J Yf`UggYb`XYg': Y`Xk Y[Yg
b]W\h`Ui Z`XYb`F UXk Y[] YUW\hYh`\Uhž`k Ug`]b`Y]bYf`hfU[]gW\Yb
?c``]g]cb`YbXYhY"

C V k c\`VY]XY`6YhY]`][hY`XYf`?c``]g]cb`gW\k Yf`j Yf`Yhnh`k i fXYbž
VY`Äi Zh`g]W\`XYf`YbhghUbXYbY`GUW\gW\UXYb`Ui Z`Yhk U`* \$\$`9i fc"
8]Yg`nY][hž`XUgg`b]W\h`bi f`X]Y`_ØfdYf`]W\Yb`J Yf`Yhni b[Ybž
gcbXYfb`Ui W\`X]Y`Z]bUbn]Y``Yb': c`[Yb`j cb`J Yf_Y\fgi bZÄ``Yb
Yf\YV`]W\`g]bX"

F Y U_h]cbYb`i bX`? cbgYe i YbnYb

8]Y`Dc`nY]VY\ØfXYb`\UVYb`XYb`i bZU``i bhYfgi W\hi bX`_ØbbhYb
Yj Ybhi Y``bYi Y`F]W\h]b]Yb`i bX`G]W\Yf\Y]hga U» bU\ a Yb`]b`X]YgYf
F Y[]cb`]bg`@VYb`fi ZYb`"9g`V`Y]Vh`UVni k UfhYbž`cV`X]Y`J cfZÄ``Y`]b
Y]bYf`]bhYbg]j YfYb`8]g_i gg]cb`ØVYf`X]Y`G]W\Yf\Y]h]a
GhfU» Ybj Yf_Y\`f`k Ä\`fYbX`XYf`Bi hni b[`j cb`9!GW`chYfb
fYgi `h]YfYb`"5b[Yg]W\hg`XYf`HUhgUW\Yž`XUgg`X]YgY`a cXYfbYb
: cfhVYk Y[i b[ga]hhY``]a a Yf`VY`]YVhYf`k YfXYbž`_ØbbhYb
A U» bU\ a Yb`ni f`GW\i`i b[`i bX`GYbg]V`]g]Yfi b[`j cb`: U\`fYfb
YfZcfXYf`]W\`gY]bž`i a`ni _ØbZh][Y`i bZÄ``Y`ni`j Yfa Y]XYb"

5`g`XYf`F Yhni b[g\i VgW\ fUi VYf``UbXYhYž`i a`XYb`j Yf`YhnhYb
š b[Yb`]bg`?fUb_Yb\Ui g`ni`Vf]b[Ybž`k Uf`XYf`GW`cW`i bhYf`XYb
5bk YgYbXYb`gdØfVUf`"9g`]gh`]b`gc`W\Yb`G]hi Uh]cbYb``Y]W\hž`ZØf
Y]bYb`A ca Ybhni`j Yf[YggYbž`k]Y`[YZÄ`\f`]W\`X]Y`GhfU» Yb
ØVYf\Ui dh`gY]b`_ØbbYbž`]bgVYgcbXYfY`ZØf`Øb[YfY
J Yf_Y\fgHY`]bY\ a Yfž`X]Y`a Ø[`]W\Yfk Y]gY`b]W\h`ØVYf`X]Y`[YgUa hY
YfZcfXYf`]W\Y`9fZU\fi b[`]a`GhfU» Ybj Yf_Y\`f`j YfZØ[Yb"

8]YgYf`J cfZU``k]fZi: fU[Yb`Ui Z`ØVYf`XYb`j YfUbhk cfhi b[gj c``Yb
I a [Ub[`a]h`9!GW`chYfbž`[YfUXY`]b`Y]bYa` ; YV]Yhž`k c`gck c\
: i » [Äb[Yf`U`g`Ui W\`F UXZU\`fYf`i bhYfk Y[g`g]bX`"9]b`VYgcbXYfYg
5i [Yba Yf`_`Ui Z`X]Y`G]W\hVUf_Y]hi bX`G]W\Yf\Y]h`_ØbbhY`XUni
VY]hfU[Ybž`k Y]hYfY`HfU[ØX]Yb`ni`j Yf\]bXYfb"

GW`i ggZc`[Yfi b[Yb`ni f`J Yf_Y\fgg]W`Yf\Y]h

⊕`5bVYhfUW`h`XYf`Yf\`Ò\`hYb`i` bZU`nU\`Yb`]b`j` YfgW`]YXYbYb
Gh`XhYb`V`Y]Vh`X]Y`8`]g`_i` gg]cb`ØVYf`J`Yf_Y\fgfY[Y`b`i` bX
5i`Z`Àfi`b[`ni`G]W`Yf\Y]hgh`Ya`Yb`ZØf`U`Y`J`Yf_Y\fgfY]`bY\`a`Yf
j`cb`[`fØ`»`hYf`6YXYi`hi`b[``J`cf`U`Y`a` `Øb[YfY`:`U\`fYf`j`cb`9!
GW`chYfb`i`bX`UbXYfYb`Y`Y`_hf]gW`Yb`A`cV`]h`hg\`]ZYb`a`ØggYb`Y]b
6Yk`i`gghgY]b`XUZØf`Yb`hk`]W`_Y`b`ž`k`Y`W`Y`d`chYbn]Y`Yb`F`]g`_Yb
Yi`]gh]YfYb`ž`i`bX`]b`Y`XYa` `A`ca`Yb`h`]`fYf`:`U\`fh`Ui`ZdUggYb`ž`i`a
l`bZ`À`Y`k`]Y`X]YgYb`ni`j`Yfa`Y]XYb`"

GW`k YfY`J`Yf_Y\fgi`bZ`À`Y`i`b`hYf

⋈ [YbX`]W`Yb

⊕`a`a`Yf`k`]YXYf`gc`f[Yb`gW`k`YfY`J`Yf_Y\fgi`bZ`À`Y`ž`Ub`XYbYb
⋈ [YbX`]W`Y`VYhY`]][`h`g]bX`ž`ZØf`GW`U[`nY]`Yb`"6YgcbXYfY
5i`Za`Yf`gUa`_Y]h`[`]h`]b`X]YgYa` `Ni`gUa`a`Yb`Ub[`XYa` `J`Yf_Y\f`Ui`Z
F`UX!`i`bX`:`i`»`k`Y[Yb`ž`XYf`c`Z`h`ni` `i`bg]W`YfYb`G]h`Uh]cbYb`ZØ\`fh`
@Ui`h`Y]bYf`G`h`X]Y`XYg`G`h`Uh]gh]gW`Yb`6i`bXYgUa`hYg`k`UfYb`]a` `X\`f
&`\$`%`]b`8Yi`hgW`UbX`Yhk`U`%-`i` `U`Yf`J`Yf_Y\fgi`bZ`À`Y`ž`VY`]XYbYb
J`Yf`Y`h`h`Y`ni` `VY`_U[Yb`k`UfYb`ž`i`bZ`À`Y`a` `]h`F`UXZU\`fYfb`ž`k`cVY`]X]Y
5`h`Yfg[fi`ddY`XYf`%\$!`V]g`%(!`À\`f][Yb`ØVYfXi`fW`gW`b]h`]W`À`i`Z[
VYhfcZYb`]gh`"

9!GW`chYf`\UVYb`]b`XYb`Y`h`h`Yb`X\`fYb`U`g`U`h`Yfb`Uh]j`Y
:`cfhVYk`Y[i`b[ga`]h`h`Y`Ub`Dcdi`Uf]h`h`h`[Yk`cbbYb`ž`k`Ug`Y`X`c`W`Ui`W`
ni`Y]bYa` `5bgh]Y[`XYf`i`bZU`nU\`Yb`[YZØ\`fh`\`Uh`"⊕`gVYgcbXYfY
?]bXYf`i`bX`⋈ [YbX`]W`Y`g]bX`c`Z`h`i`bni`fY]W`YbX`Ui`Z`X]Y`:`YZU\`fYb
]a` `GhfU`»`Ybj`Yf_Y\`f`gYbg]V`]g]Yfh`Dc`]nY]ghUh]gh]_Yb`nY][Yb`ž`XUgg
VY]a` `:`U\`fYb`j`cb`9!GW`chYfb`c`Z`h`X]Y`J`Yf_Y\fgfY[Y`b`a`]ggUW`hYh
k`YfXYb`ž`k`Ug`ni` `[YZÀ\`f`]W`Yb`G]h`Uh]cbYb`ZØ\`fYb`_Ubb`"8U\`Yf
g]bX`5i`Z`Àfi`b[g`_Ua`dU[bYb`i`bX`GW`i`i`b[Yb`ZØf`X]Y`Øb[YfY
; YbYfUh]cb`j`cb`[fc`»`Yf`6YXYi`hi`b[``"

F`Y`Y`j`Ub`hY`J`Yf_Y\fgg]W`Yf\Y]hg]b]h]Uh]j`Yb

⊕`8Yi`hgW`UbX`[]Vh`Yg`j`YfgW`]YXYbY`⊕]h]Uh]j`Yb`ni`f

J YfVYggYfi b['XYf'J Yf_Y\fgg]W\Yf\Y]hž']bgVYgcbXYfY'ja '<]bV`]W_
Ui Z↑ b['Y'J Yf_Y\fghY]'bY\`a Yf" Dfc[fUa `a Y`k]Y' : Ygh]j U`XYf
J Yf_Y\fgg]W\Yf\Y]h`n]Y`Yb`XUfUi ZUVž'?]bXYf'i bX`đ [YbX`]W\Y`ZØf
X]Y'; YZU\`fYb`ja `GhfU»Ybj Yf_Y\`f`ni `gYbg]V`]g]YfYb`i bX`]\`bYb
dfU_h]_UV`Y`G]W\Yf\Y]hgh]ddg`ni `[YVYb`"

Ni gÀhn`]W\`k]fX`X]Y'[YgYhn`]W\Y`F U\`a YbVYX]b[i b[Yb`\]bg]W\h`]W\
XYf`Bi hni b[`j cb`9!GWčchYfb`_cbh]bi]Yf`]W\`Ub[YdUggh"GY]h`XYf
9]bZØ\`fi b[`j cb`9!GWčchYfb`ja `đ\`f`&\$%-`g]bX`VY]gd]Y`gk Y]gY
ghfYb[YfY`5i ZU[Yb`ZØf` : U\`fYfž']bgVYgcbXYfY`\]bg]W\h`]W\`XYg
A]bXYghU`hYfgi` bX`XYf`<Y`a dZ]W\hž`X]g_i h]Yfh`k cfXYb`"A Y\`fYfY
6i bXYg`ÀbXYf`\UVYb`VYfY]hg`Y][YbY`A U» bU\`a Yb`Yf[f]ZYbž`i a
X]Y`G]W\Yf\Y]h`ja `GhfU»Ybj Yf_Y\`f`ni `Yf\`Ò\`Yb`i bX`XUg
6Yk i gghgY]b`ZØf`X]Y`F]g]_Yb`ni `gW\`ÀfZYb`"8]YgY`_cbnYfh]YfhYb
5bgfhfYb[i b[Yb`n]Y`Yb`XUfUi ZUVž`X]Y`NU\`XYf`gW\`k YfYb`i bZÀ`Y
ni `fYXi n]YfYb`i bX`X]Y`J Yf_Y\fgg]W\Yf\Y]h`ZØf`U`Y`ni `j YfVYggYfb`"

8]Y`F c``Y`XYf`J Yf_Y\fgYfn]Y\`i b[

J Yf_Y\fgYfn]Y\`i b[`gd]Y`h`Y]bY`Yb`hgW\Y]XYbXY`F c``Y`VY]`XYf
DfÀj Ybh]cb`j cb`i bZÀ`Ybž']bgVYgcbXYfY`i bhYf`đ [YbX`]W\Yb`"
GWcb`j]b`XYf`; fi bXgW\i `Y`k YfXYb
J Yf_Y\fgYfn]Y\`i b[gdfc[fUa `a Y`Ub[YVchYbž`X]Y`?]bXYf`Ui ZX]Y
; YZU\`fYb`ja `GhfU»Ybj Yf_Y\`f`j cfVYfY]hYb`gc``Yb`"đ\`U`h`X]YgYf
Dfc[fUa `a Y`g]bX`i bhYf`UbXYfYa `XUg`f]W\h][Y`J Yf\`U`hYb`ja
GhfU»Ybj Yf_Y\`fž`XUg`9f_YbbYb`j cb`; YZU\`fYb`i bX`X]Y`6YXYi hi b[
j cb`GW\i hni gfØghi b[Yb`k]Y`<Y`a Yb`"

9]b`k Y]hYfYf`k]W\h][Yf`5gdY`_h`]gh`X]Y`9]bVYn]Y\`i b[`j cb`9`hYfb`]b
X]YgY`6]`Xi b[ga U» bU\`a Yb`"Ghi X]Yb`\UVYb`[YnY][hž`XUgg`U`_hj] Yg
9b[U[Ya Ybh`XYf`9`hYfb`]b`XYf`J Yf_Y\fgYfn]Y\`i b[`Y]bYb`dcg]h]j Yb
9]bZi gg`Ui ZXUg`J Yf\`U`hYb`XYf`?]bXYf`ja `GhfU»Ybj Yf_Y\`f`\`Uh"
9`hYfb`gc``hYb`U`g`J cfV]`XYf`Zi b[]YfYb`i bX`]\`fYb`?]bXYfb`X]Y
6YXYi hi b[`j cb`j YfUbhk cfhi b[gVYk i gghYa `J Yf\`U`hYb`ja
GhfU»Ybj Yf_Y\`f`j Yfa]hY`b"

: Un]h`i bX`5i gV`]W_

8]Y`U_hi Y`Yb`<YfUi gZcfXYfi b[Yb`]a`6YfY]W`XYf
J Yf_Y\fgg]W`Yf\Y]h`YfZcfXYfb`Y]bY`[Ya`Y]bgUa`Y`5bghfYb[i b[`j`cb
GW`i`Ybž`9`hYfbž`J Yf_Y\fgVY\ÖfXYb`i`bX`XYf`; YgY`gW`UZh
]bg[YgUa`h`9g`]gh`i`bYf`Àgg`]W`ž`XUgg`gck`c\`5i`Z_`Àfi`b[`U`g`Ui`W`
dfÅj`Ybh]j`Y`A`U»`bU\`a`Yb`k`Y]hYf`Ui`g[YVUi`h`k`YfXYbž`i`a`X]Y`NU\`
gW`k`YfYf`l`bZ`À`Yž`]bgVYgcbXYfY`i`bhYf`š`[YbX`]W`Ybž`ni
fYXi`n]YfYb`"8`UVY]`gd]Y`h`Ui`W`X]Y`Zcfh`Ui`ZYbXY`5bdUggi`b[`XYf
; YgYhnY`i`bX`FY[Y`i`b[Yb`Y]bY`YbhgW`Y]XYbXY`Fc`Yž`i`a
g]W`Yfni`ghY`Ybž`XUgg`X]Y`J Yf_Y\fg]bZfUghfi`_hi`f`ZØf`U`Y
5`hYfg[fi`ddYb`g]W`Yf`]gh"

8YhU]`g

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