

9]bVfi W\]b ? fUbYbVi f[Yf'A Yhn[YfY]. Dc`nY]gi W\ h'NYi [Yb

I bVY_UbbhY`HÄhYf`VfUW\Yb`]b`A Yhn[YfY]`E i Ufh]Yf`]b
?fUbYbVi f[`Y]b"Dc`nY]`V]hYh'NYi [Yb`i a`<]bk Y]gY`ni`XYa
JcfZU`"

?fUbYbVi f[" ð`XYf`B UW\h`ni`A cbhU[`k i fXYb`X]Y`; YgW\ÄzhgfÄi a Y
Y]bYf`A Ym[YfY]`]b`?fUbYbVi f[`N]Y`Y]bYg`9]bVfi W\g`I bVY_UbbhY
HÄhYf`\UVYb`j Yfgi W\hž`]b`X]Y`;]]U`Y`XYf`A Yhn[YfY]`E i Ufh]Yf`Ua
; fc»Yb`<UU[`Y]bni`Xf]b[Yb`"8]Y`Dc`nY]`\Uh`VYfY]hg`9fa]h`i b[Yb
Y]b[`Y`Y]hYh`i bX`fi Zh`X]Y`6Yj`Ö`_Yfi b[`ni`f`A]h\`ZY`Ui`Z`

; Y[Yb`" "%*`I` \f`gYmhYb`X]Y`9]bVfYW\Yf`]`fY`D`ÄbY`]b`X]Y`HUh`i a`"
G]Y`VYgW\ÄX][`hYb`Y]bY`5i`»Yb`høfž`i a`i bVYZ[`hYb`Ni [Ub[`ni`XYb
FÄi a``]W\`_Y]hYb`XYf`A Yhn[YfY]`ni`Yf`\U`hYb`"6Yf]W\hYb`ni`Zc`[Y
[`Y`Ub[`hYb`g]Y`]b`XUg`; YVÄi`XYž`YXcW\`gW\Y]bh`Ygž`U`g`cV`g]Y
XUVY]`b]W\`hg`Yb`hk`Yb`XYh`\UVYb`"8]Yg`_ÖbbhY`X]Y`HÄhYf`
a`Ö[`]W\Yfk`Y]gY`XUj`cb`UV[`Y`U`hYb`\UVYbž`]`fY`HUhYb`Ui`g[]YV][`Yf
Zcfhni`ZØ`fYb`"8Yf`; fi bX`ZØf`]`f`9]bXf]b[Yb`V`Y]Vh`Y]b`FÄhgY`ž`i bX
Yg[]Vh`V]g`Yf`_Y]bY`<]bk Y]gY`XUfUi`Zž`k`Ug`X]Y`A`chj`Y`XYf`HÄhYf`
[Yk`YgYb`gY]b`_ÖbbhYb`"

9fa]h`i b[Yb`XYf`Dc`nY]

8]Y`?f]a]bU`dc`nY]`\Uh`X]Y`9fa]h`i b[Yb`Ui`Z[Ybca a Yb`i bX
gi W\h`bi b`NYi [Ybž`X]Y`a`Ö[`]W\Yfk`Y]gY`Yhk`Ug`J`YfXÄW\h][`Yg
VYcVUW\hYh`\UVYb`" ð`gc`W\Yb`i`Ä`Yb`]gh`Yg`VYgcbXYfg`k`]W\h][`ž
XUgg`X]Y`6Øf[`Yf`Ui`Za`Yf`_gUa`V`Y]VYb`i bX`j`YfXÄW\h][`Y
5`_hj]`hÄhYb`i a [`Y`YbX`a`Y`XYb`"8]Y`9fa]h`Yf`g]bX`Ui`Z
ðZcfa`Uh]cbYb`Ub[Yk`]YgYbž`i a`XYf`GUW\Y`Ui`ZXYb`; fi bX`ni
[`Y`Yb`"<]bk Y]gY`_ÖbbYb`i bhYf`XYf`HY`YZcbbi a a Yf`\$&, &%) \$(\$

[Y[YVYb`k YfXYb" `>XY`bcW`gc`_Y]bY`6YcVUW`hi b[` _ObbhY
YbhgW`Y]XYbX`gY]bž`i a`X]Y`J YfU`hk c`fh]W`Yb`ni`Z]bXYb"

8]Y`A`Yhfc`dc`fY[]cb`?`fUbYbVi`f[`]gh]b`XYb`Y`hnhYb`A`cbU`hYb
j`Yfa`Y`fhj`cb`9]bVfØW`Yb`VYhfc`ZYbž`k`Ug`X]Y`G]W`Yf`Y]h`XYf
`c`_U`Yb` ;`YgW`ÅZhY`i`bX`j`fYf`6YhfY]VYf`b` :`fU[`Y`ghY`h`8]Y`J`cfZ`Å`Y
j`Yfi`bg]W`Yfb`b]W`h`bi`f`X]Y` ;`YgW`ÅZhj]b`UVYfž`gc`bXYfb`Ui`W`X]Y
5bk`c`bYfž`X]Y`g]W`j]b`fYf`I`a`[`YVi`b[`g]W`Yf`ZØ`Yb`a`ØW`hYb"
9]bVfØW`Y`g]bX`b]W`h`bi`f`a`U`hYf]Y`Y`J`Yf`i`ghY`ZØf`X]Y`C`d`ZYf`/`g]Y
_ObbYb`Ui`W`ni`dgmW`c`c[]gW`Yb`6Y`Ughi`b[`Yb`ZØ`fYbž`X]Y`k`Y]h
ØVYf`X]Y`a`U`hYf]Y`Yb`G`W`ÅXYb`\\`bUi`g[`Y`Yb"

8]Y`5`i`gk`]f`_i`b[`Yb`Ui`Z`X]Y`G]W`Yf`Y]hg`U[`Y`

9]b`gc`W`Yf`J`cfZU`Yb`_h`Ui`W`X]Y`5i`Za`Yf`_gUa`_Y]h`Ui`Z`X]Y
B`c`hk`YbX][`_Y]h`j`Yfgh`Åf`_hYf`G]W`Yf`Y]hga`U»`bU`a`Yb`]b`XYf`F`Y[]cb"
 ;`YgW`ÅZhj]b`UVYf`_ObbhYb`bi`b`XUfØVYf`bUW`XYb`_Ybž`ni`g`Åh`W`X
G]W`Yf`Y]hgj`cf`_Y`fi`b[`Yb`ni`hfY`ZYbž`i`a`ni`_ØbZh][`Y`9]bVfØW`Y`ni
j`Yf`Y]bXYfb`"8`Uni`_ObbhY`X]Y`ϕghU`Uh]cb`j`cb
 ,`VYfk`UW`i`b[`g`_Ua`YfUg`c`XYf`Y]bY`J`YfVYggYfi`b[`XYf
5`Ufa`gmghY`a`Y`[`Y`ØfYb`"9]bY`gc`W`Y`F`YU`_h]cb`]gh`j`Yfgh`ÅbX`]W`ž
XYbb`X]Y`G]W`Yf`Y]h`\\`Uh]b`i`bgYfYf`\\`Yi`h][`Yb`NY]h`c`\\`Y`Df]cf]h`Åh"

8]Y`Dc`nY]`_Ubb`Ui`g`j`Yf[`Ub[`YbYb`J`cfZ`Å`Yb`YfbYbž`i`a
k`]f`_gUa`YfY`G`hfU`hY[]Yb`ni`f`J`YfVfYW`Yb`gd`f`Åj`Ybh]cb`ni
Ybhk`]W`_Y`b`"Ni`g`Åh`W`_ObbhYb`ϕZcfa`Uh]cb`gj`YfU`b`ghU`hi`b[`Yb`ZØf
 ;`YgW`ÅZhj]b`UVYf`ghU`hZ]bXYbž`VY]`XYbYb`G]W`Yf`Y]hga`U»`bU`a`Yb
i`bX`!`hYW`b]_Yb`X]g`_i`h]Yfh`k`YfXYb`"Gc`W`Y`ϕ]h]Uh]j`Yb`_ObbhYb
\\`Y`ZYbž`XUg`G]W`Yf`Y]hgVYk`i`gghgY]b`ni`ghY][`Yfb`i`bX`Y]bY
 ;`Ya`Y]bgW`UZh`ni`g`W`UZZYbž`b`XYf`a`Ub`g]W`i`[`Y[`YbgY]h][`g`W`Ø`hnh"

6]g`Ub[`V`Y]Vh`XUg`A`ch]j`\\`]bhYf`XYa`9]bVfi`W`i`b`_Ufž`Xc`W`X]Y
K`U`f`g`W`Y]b`]W`_Y]h`ghY][`YbXYf`?`f]a`]bU`h`h`Å`h`gc`h`hY`b]W`h`i][`bcf]Yfh
k`YfXYb`"8]Y`5bk`c`bYf`i`bX` ;`YgW`ÅZhj]b`UVYf`g]bX`Ui`Z[`Yfi`ZYbž
k`UW`gUa`ni`gY]b`i`bX`g]W`i`[`Y[`YbgY]h][`ni`i`bhYfghØ`hYb`"ϕ`NY]hYb
k`]Y`X]YgYb`]gh`XYf`5i`ghUi`gW`j`cb`ϕZcfa`Uh]cbYb`i`bX`9fZU`fi`b[`Yb
i`bhYf`B`UW`VUfbž` :`fYi`bXYb`i`bX` ;`YgW`ÅZhj]b`UVYfb`j`cb`[`fc»`Yf
6YXYi`hi`b["

9]bY`gc`WXY`G]hi Uh]cb`ghY`h`Y]bYb`5`Ufa`XUfz`b]W`h`bi`f`Z0f`X]Y
X]fY`_h`6YhfcZZYbYb`z`gcbXYfb`Ui`W`Z0f`X]Y`[`YgUa`hY`;`Ya`Y]bgW`UZh`
8]Y`NY]h`]gh`fY]Z`0VYf`A`U`b`U`a`Yb`b`UW`ni`XYb`_Yb`z`X]Y`b]W`h`bi`f`
df`Aj`Ybh]j`k`]f`_Yb`z`gcbXYfb`Ui`W`X`Ug`J`Yfhf`Ui`Yb`]b`X]Y`G]W`Yf`Y]h
XYf`i`a`[`YVi`b`[`gh`A`f`_Yb`"@Uggh`i`bg`[`Ya`Y]bgUa`XUf`Ui`Z
`]\bUfVY]hYb`z`gcbWXY`J`cfZ`A`Y`]b`Ni`_i`b`Z`h`ni`j`Yf`]\bXYfb`i`b`X`Y]b
g]W`Yf`Yg`i`a`Z`Y`X`ni`g`W`UZZYb`"

?`c`b`h`Y`I`h`X`Y`f`9]b`V`f`0`W`X`Y`]b`?`f`U`b`Y`b`V`i`f`[

⊕`X`Y`b`Y`h`h`Y`b`⊕`f`Y`b`U`h`X]Y`F`Y`[`]cb`?`Y`j`Y`z`ni`X`Y`f`Ui`W`
?`f`U`b`Y`b`V`i`f`[`[`Y`U`0`f`h`z`Y]bYb`5`b`gh]Y`[`j`cb`9]bVf0WXYb`i`b`X`
0VYf`[`fY]Z`Y`b`X`Y`b`9][`Y`b`h`i`a`g`X`Y`_]`h`Y`b`Y`f`Y`V`h`"@Ui`h`X`Y`f`D`c`]nY`]"W`Y`b`
?`f`a`]b`U`gh`U`h]g`h]_`f`D`?`G`k`j`cb`&`\$`&`&`[`U`V`Y`g`]a`?`f`Y]g`?`Y`j`Y`]bg`[`Y`g`U`a`h`
+`%`\$`K`c`l`bi`b`[`gY]bVf0WXYz`Y]bY`N`U`l`z`X]Y`Y]bY`
V`Y`g`c`f`[`b]g`Y`f`f`Y`[`Y`b`X`Y`9`b`h`k`]W`_`i`b`[`k`]X`Y`f`g`d]Y`[`Y`h`"8]Y`g`Y`N`U`l`Y`b`
X`Y`i`h`Y`b`Ui`Z`Y]b`k`U`W`g`Y`b`X`Y`g`G]W`Y`f`Y`h]g`d`f`c`V`Y`a`]b`X`Y`f`F`Y`[`]cb`
`]\b`z`k`Y`W`Y`g`b]W`h`bi`f`D`f]j`U`h`k`c`l`bi`b`[`Y`b`z`gcbXYfb`Ui`W`
;`Y`g`W`A`Z`h`g`f`A`i`a`Y`V`Y`h`f]Z`h`"

8]Y`;`f0bXY`Z0f`X]YgYb`5`b`gh]Y`[`g]b`X`j`]Y`g`W`]W`h][`"Ni`a`Y]bYb`
gd]Y`h`X`Y`f`X`Y`a`c`[`f`U`Z]g`W`Y`K`U`b`X`Y`Y]bY`F`c`Y`z`X`U`g]W`Y]bY`
U`h`Y`fb`X`Y`6`Y`j`0`_`Y`fi`b`[`gh`A`f`_Y`f`i`a`]`f`Y`G]W`Y`f`Y]h`i`g`c`f`[`h`"C`Z`h`a`U`g`
_`ca`a`Y`b`9]bVfYWXYf`]b`k`Y`b][`Y`f`V`Y`Y`V`h`Y`U`f`Y`U`g`z`k`c`X]Y`
K`U`l`f`g`W`Y]b`]W`_`Y]h`z`b]W`h`Y`b`h`X`Y`W`_`h`ni`k`Y`f`X`Y`b`z`l`0`Y`f`]gh`"Ni`X`Y`a`
_`0`b`b`h`Y`X`Y`f`5`b`gh]Y`[`g`c`n]U`Y`f`G`d`U`b`b`i`b`[`Y`b`i`b`X`X]Y`k`]f`h`g`W`U`Z`h]W`Y`
l`bg]W`Y`f`Y]h`z`]bg`V`Y`g`c`b`X`Y`f`Y]b`Z`c`[`Y`X`Y`f`7`C`J`-8`!`%-`!`D`U`b`X`Y`a`]Y`z`ni`
Y]bYf`Ni`b`U`l`a`Y`j`cb`9][`Y`b`h`i`a`g`X`Y`_]`h`Y`b`Z0`f`Y`b`z`X`U`A`Y`bg`W`Y`b`]b`
Z]b`U`b`n]Y`Y`B`c`h`[`Y`f`U`h`Y`b`i`b`X`g]W`i`b`[`Y`f`Y`W`h`Z`Y`f`h][`h`Y`C`d`h]c`b`Y`b`
g`i`W`Y`b`"

8]Y`F`c`Y`X`Y`f`?`f]a`]b`U`d`c`]nY]i`b`X`]f`Y`
9fa`]h`h`i`b`[`Y`b`

8]Y`?`f]a`]b`U`d`c`]nY`]U`h]b`X]Y`g`Y`f`5`b`[`Y`Y`[`Y`b`Y]h`V`Y`f`Y]h`g`X]Y`
9fa`]h`h`i`b`[`Y`b`Ui`Z`[`Y`b`c`a`a`Y`b`"8]Y`9fa`]h`h`i`b`[`Y`b`g]b`X`Y]b`_`f]h]g`W`Y`f`
G`W`f]h`h`i`f`5`i`Z`_`A`fi`b`[`X`Y`f`J`c`f`Z`A`Y`i`b`X`ni`f`9`f`l`0`i`b`[`X`Y`f`

G]WYf\Y]h]b? fUbYbVi f["NYi [Yb'g]bX'j cb'YbhgWY]XYbXYf
6YXYi hi b[ži a '<]bk Y]gY'Ui Z'X]Y'HÀhYf'ni 'Yf\U'hYb" "X'Yf'F'Y[Y'
k YfXYb'NYi [Yb'Ui Z[Yfi ZYbžj YfXÀW'h][Y'DYfgcbYb'cXYf
: U\fnYi [Y']b'XYf'BÀ\Y'ni a'NY]hdi b_h'XYg'J cfZU`g'ni 'a Y'XYb"
Gc`WY'NYi [Yb'_ÖbbYb'XYf'Dc`nY]' \Y'ZYbž'Y]b'_UfYfYg'6]'X'j cb
XYb'; YgWY\ b]ggYb'ni 'VY_ca a Yb"

B UWXYa 'X]Y'Dc`nY]'Y]bY'Gdi fYbg]WYfi b['Xi fW ZØ\ fhž'k YfXYb
X]Y'8 UhYb'Ui W']b'XUg'gc[YbUbbhY
?f]a]bU`hÀhgVY_Àa dZ b[ggmghYa 'Y]b[YgdY]gh"9g\UbXY'h'g]W
XUVY]'i a 'Y]b'i a ZUb[fY]WYg'X][]hU'Yg'GmghYa ž]b'XYa
"Zcfa Uh]cbYb'ni 'V]g\Yf'fY[]ghf]YfhYb'HUhc fhYbž'HÀhYfd'fc Z]Yb'i bX
]b'XYf'BÀ\Y'k c\ bYbXYb'VY_UbbhYb'GhfUZhÀhYfb'YfZUggh'k YfXYb"
: Øf'5bk c\ bYf'VYXYi hYh'X]Yg'Y]b'Yf\ Ò\hYg
G]WYf\Y]hgVYk i gghgY]b'i bX'X]Y'A Ò['W_Y]hž'j YfXÀW'h][Y
5_h]j]hÀhYb'fUgW'ni 'a Y'XYbž'k Ug'\Y'ZYb'_Ubbž'GhfUZhUhYb']b'XYf
F'Y[]cb'ni 'fYXi n]YfYb"

8YhU]`g

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