

5 \ bUhU`Yf`K Y]b. '9]b`bYi Yf`GWX Uhn`Ui g B c fX\YggYb`V`Ø\h`Ui Z

K Y]b`Ui g`5\bUhU`VY[Y]ghYfh`G]a`cb`J`Ø`_Yf`j`Yf`_Ui`Zh
YfZc`[fY]W\`gY]bY`K Y]bY`i`bX`d`Ubhž`X]Y`c`_U`Y`B`UW\`ZfU[Y
k Y]hYf`ni`VYX]YbYb"

⊕`XYf`]Xm`]gW\Yb`; Ya Y]bXY`5\bUhU`]b`B`c`f`X`\Y`g`g`Y`b`\`U`h`g]W\`]b
XYb`Y`h`h`Y`b`⋈\`f`Y`b`Y]bY`VYa`Yf`_Y`b`g`k`Y`f`h`Y`9`b`h`k`]W`_`i`b`[`]a
K Y]bVUi`j`c``nc[Yb"G]a`cb`J`Ø`_Yfž`Y]b`Y]XYb`g`W\`U`Zh`]W\`Y`f
@Ub`X`g`W\`U`Zh]g[`À`f`h`b`Y`f`i`b`X`<`c`V`V`m`k`]b`n`Y`f`ž`\`U`h`i`a`]h`g`Y]b`Ya`K`Y]b`V`Y`f`[
8`Ø`f`b`V`Y`f`[`V`]W`_`Y]b`Y`k`U`\`f`Y`9`f`Z`c`[`g[`Y`g`W\`]W\`h`Y`[`Y`g`W\`f`]Y`V`Y`b"

5 \ bUhU`. '9]b`i`bYfk UfhYhYf`K Y]b`c`f`h

C`V`k`c`\`a`U`b`V`Y]`K`Y]b`b`c`f`a`U`Y`f`k`Y]g`Y`U`b`g`c`b`b`][`Y`;`Y`Z]`X`Y`X`Y`b`_`h`ž
\`U`h`5`\`b`U`h`U`X`Y`b`b`c`W\`g`Y]b`Y`Y][`Y`b`Y`K`Y]b`d`f`c`X`i`_`h]c`b`ž`X]Y`X]Y
<`Y`f`n`Y`b`X`Y`f`K`Y]b`]Y`V`\`U`V`Y`f`Y`f`c`V`Y`f`h`"G`Y]h`&`\$`&`%`V`Y`k`]f`h`g`W\`U`Zh`Y`h
J`Ø`_`Y`f`_`U`i`Z`Y]b`Y`f`:`À`W`Y`j`c`b`%`&`\$`\$`E`i`U`X`f`U`h`a`Y`h`Y`f`b`Y`h`k`U`(`)`\$
F`Y`V`g`h`Ø`W`_`Y`i`b`X`V]Y`h`Y`h`Y]b`Y`V`Y`g`c`b`X`Y`f`Y`J`]Y`Z`U`h`8`U`g`V]g\`Y`f][`Y
G`c`f`h]a`Y`b`h`i`a`Z`U`g`h`6`U`i`Y`b`G`d`À`h`V`i`f`[`i`b`X`Y`f`ž`k`Y]»`Y`b`F]Y`g`]b`[`i`b`X
7`i`j`Å`Y``8`i`f`W\`g`Y]b`Y`Y`b`[`U`[`]Y`f`h`Y`:`U`a`j`]Y`Y`f`\`À`h`Y`f`k`Y`f`h`j`c``Y
l`b`h`Y`f`g`h`Ø`h`i`b`[`V`Y]`X`Y`f`D`Z`Y`[`Y`X`Y`g`K`Y]b`V`Y`f`[`g`i`b`X`X`Y`f`D`f`c`X`i`_`h]c`b"

9fZc`[fY]W\`]b`X`Y`f`J`Y`f`a`U`f`_`h`i`b`[

8]Y`Y`h`h`Y`;`Y`b`Y`\`a`][`i`b`[`ni`f`J`Y`f`a`U`f`_`h`i`b`[`g`Y]b`Y`f`D`f`c`X`i`_`h`Y`Y`f`\]Y`h
G]a`cb`J`Ø`_`Y`f`]b`X]Y`g`Y`a`⋈\`f``8]Y`g`V`f`U`W\`h`Y`Y]b`Y`b`5`i`Z`g`W\`k`i`b`[`Z`Ø`f
X`Y`b`↑`b`[`Y`b`K`]b`n`Y`f`ž`X`U`g`Y]b`Y`K`Y]b`Y`V`Y`f`Y]h`g`_`i`f`n`b`U`W\`X`Y`a
J`Y`f`_`U`i`Z`g`h`U`f`h`ž`X`Y`f`Ø`V`Y`f`g`c`n]U`Y`A`Y`X]Y`b`i`b`X`g`Y]b`B`Y`h`k`Y`f`_`j`c`b
:`f`Y`i`b`X`Y`b`i`b`X`6`Y`_`U`b`b`h`Y`b`]b`h]]Y`f`h`k`i`f`X`Y`ž`U`i`g`j`Y`f`_`U`i`Z`h`k`U`f`Y`b`
J`Ø`_`Y`f`Y`f`_`À`f`h`8]Y`B`U`W\`Z`f`U[`Y`k`U`f`j`]Y``[`f`Ø»`Y`f`ž`U`g`k`]f`X`U`W\`h`Y`b"

A]h'Y]bYa 'DfY]g]j cb'%&ž) \$'9i fc'dfc':`UgWXY`_cbbhY`Yf'gWxbY``
Y]bY`hfYi Y`?i bXgWUZh'[Yk]bbYb"

8]Y`< YfUi gZcfXYfi b[Yb`]a `K Y]bVUi

8YbbcW`]gh'b]W`h'U`Yg'fcg][`]a `K Y]bVUi " `a `ž\`f`&\$&(`gU\`g]W
J`Ò`_Yf`a]h'Ybcfa Yb`GwK]Yf][_Y]hYb`_cbZfcbh]Yfhž`U`g', \$`DfcnYbh
gY]bYf`DZUbnyb`Xi fW`Gd`ÀhZf`ÒghY`VYgW`ÀX][h`k`i`fXYb``Gc`WXY
K`YhhYfYi hfYa Y`nY][Yb`X]Y`F`]g]_Ybž`X]Y`_`Y]bY`K`]bnYf`k`]Y`J`Ò`_Yf
hfU[Yb``K`À`fYbX`[fc»Y`K`Y]bdfcXi nYbhYb`cZi`A`U»bU`a`Yb`k`]Y
: Yi YfhcbbYb`Y]bgYhnYb`_ÒbbYbžZY`Yb`J`Ò`_Yf`X]Y`A`]hY``XUni`"

8 Ug`DchYbn]U`ZØf`X]Y`F`Y`[]cb`Yb`hXYW`_Yb

J`Ò`_Yf`\Uh'[fc»Y`D`ÀbY`ZØf`X]Y`Ni`_i`bZi`BYVYb`XYa`J`Yf`_Ui`ZØVYf
gcn]U`Y`A`YX]Yb`a`ÒW`hY`Yf`gY]bY`K`Y]bY`Ui`W`]b`c`_U`Yb
; YgW`ÀZnYb`UbV]YhYbž`Yhk`U`]b`XYf`6`ÀW`YfY]`GW`a`]X`h`c`XYf`]a
F`Uh`U`i`g`j`cb`5`\bUhU``8]Yg`_ÒbbhY`XYb`5`\bUhU`Yf`K`Y]b`U`g
5i`g`Àb[YgW`]X`XYf`; Ya`Y]bXY`gh`Àf`Yb`i`bX`XUg`6`Yk`i`gghgY]b`ZØf
`c`_U`Y`DfcXi`_hY`ZØfXYfb``8]Y`9]bV]bXi`b[`]b`XYb`8Yi`hgW`Yb
K`Y]bVUi`j`YfVUbX`i`bX`X]Y`c`Z]n]Y``Y`@]ghi`b[`U`g`5bVUi`[YV]Yh
Yf`ÒZbYb`bcW`a`Y`f`A`Ò[`]W`_Y]hYb`ZØf`J`Ò`_Yfg`K`Y]b"

9]b`_`Y]bYf`K`Y]bVYf[`a`]h`[fc»Ya`9]bZi`gg

8]Y`@]XYbgW`UZhž`X]Y`G]a`cb`J`Ò`_Yf`i`bX`gY]bY`i`Ua`]`Y`]b`X]Y
DZY[Y`XYg`K`Y]bVYf[g`ghYW`_Ybž`nY][h`g]W`b]W`h`bi`f`]b`XYf
E`i`U`]h`h`XYf`K`Y]bYž`gcbXYfb`Ui`W`]b`XYf`bUW`\U`h][Yb`i`bX
\UbXk`Yf`_]W`Yb`DfcXi`_h]cbgk`Y]gY``8]Y`K`Y]bY`g]bX`gca`]h`b]W`h
bi`f`Y]b`DfcXi`_h`XYg`?`]a`Ugž`gcbXYfb`Ui`W`XYg`9b[U[Ya`Ybhg`i`bX
XYf`; Ya`Y]bgW`UZh]b`5`\bUhU``Ni`_ØbZi][`gc``X]Y`K`Y]b`YgYž`X]Y
bcfa`U`Yfk`Y]gY`]a`GYdhYa`VYf`VY[]bbhž`XUni`VY]hfU[Ybž`X]Y
DfcXi`_h]cbga`Yb[Yb`k`]YXYf`ni`ghY][Yfb`i`bX`X]Y`k`]fhgW`UZh]W`Y
6Ug]g`ZØf`XYb`K`Y]bVYf[`ni`ZYgh][Yb"

žg[YgUa`h`ghY``h`X]Y`9b`hk`]W`_i`b[`]b`5`\bUhU`Y]b`gd`UbbYbXYg
6Y]gd]Y``XUZØf`XUfž`k`]Y``c`_U`Y`ž]h]Uh]j`Yb`b]W`h`bi`f`X]Y
k`]fhgW`UZh]W`Y`J`]Y`ZU`h`Y]bYf`F`Y`[]cb`VYfY]W`Yfbž`gcbXYfb`Ui`W`

XUni 'VY]hfU[Ybž'XUg'6Yk i gghgY]b'ZØf'X]Y'Y][YbY'?'i`hi f'i bX
⇒XYbh]hÀh'ni 'ZØfXYfb"

' B 5;

8YhU]`g

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