

F Yb hYb _f]gY `]a `@UbX_fY]g`@YYf. `: fUi Yb
Yf\U`hYb `bi f`* , &`9i fc `a cbUh`]W\ °

⇒ a `@UbX_fY]g`@YYf`Yf\U`hYb` : fUi Yb`&\$&` `bi f`* , &`9i fc
F YbhY`"8]Y`Ghi X]Y`VY`Yi W`hYh`XYb` ; YbXYf`DYbg]cb` ; Ud`]b
B]YXYfgUW`gYb`"



@UbX_fY]g`@YYf`ž`8 Yi hgW\`UbX`!`⇒ a `@UbX_fY]g`@YYf`ghY\`Yb`X]Y
: fUi Yb`VY]`]\fYf`F YbhY`[Ubn`gW`Öb`]a `GW`UhhYb`"A]h`Y]bYa
8 i fW`gW`b]hghVYhfU`[`]cb`YX][`]W`* , &`9i fc `a cbUh`]W`ž`\UVYb`g]Y
) *`9i fc`k Yb][Yf`U`g`XYf`@UbXYgXi fW`gW`b]hjh`cb` , ' , `9i fc`
8]YgY`VYgcf`[b]gYffY`[YbXYb`NU`\`Yb`ghUa` a Yb`Ui`g`Y]bYf`U`hi`Y`Yb
Ghi X]Y`XYg` ; YgUa` hj`YfVUbXg`XYf`8 Yi hgW`Yb
J Yfg]W`Yfi`b`[gk`]fhgW`UZh`fi` 8 J`Ł`i`bX`XYg
K`]fhgW`UZh`Zc`fgW`i`b`[g]bgh]hi`hg`Dfc`[bcgž`X]Y`XYb` ; YbXYf`DYbg]cb
; Ud`VYgcbXYfg`XYi`h`]W``a`UW`h`"8cW`k`]Y`g]Y\`h`X]Y`G]hi`Uh]cb`XYf
: fUi Yb`]b`B]YXYfgUW`gYb`]a`J`Yf`[`Y]W`ni` `]\fYb`a`Äbb`]W`Yb
?c`Y`[Yb`Ui`g`3`**B 8 F**`VYf]W`hYhž`XUgg`A`ÄbbYf`]a`@UbX_fY]g`@YYf
XcddY`h`gc`j`]Y`F YbhY`Yf\U`hYb`k`]Y` : fUi Yb`"

l a `Y]b`VYggYfYg`J Yfgh`AbXb]g`X]YgYf`DfcV`Ya Uh]_`ni`Yf\U`hYbž
nY][`h'g]W`ž`XUgg`X]Y`i`bhYfgW`]YXY`]b`XYb`9fk`YfVgV]c[`fUZ]Yb`Y]bY
nYbhfU`Y`F`c`Y`gd]Y`Yb":`fUi`Yb`g]bX`\`Ai`Z][`]b`HY]`nY]h`VYgW`ÅZh][`hž
\UVYb`\`Ai`Z][`Yf`9fk`YfVgi`bhYfVfYW`i`b[`Yb`cXYf`UfVY]hYb`]b
6Yfi`ZYbž`X]Y`gW`YW`hYf`VYnU`\`h`k`YfXYb"5`X]YgY`:`U`hc`fYb
XfØW`_Yb`X]Y`F`Yb`hYb`UbgdfØW`Y`Yf\YV`]W`b`UW`i`bhYb":`8J`\`YVh
\Yfj`cfž`XUgg]`a`'š`f`&\$&'`:`fUi`Yb`]a`'6i`bXYgXi`fW`gW`b]hh`-'`*
9i`fc`a`cbUh]W`Yf\]Y`hYbž`k`Å`fYbX`A`ÅbbYf`a`]h`%"`(&+`9i`fc`)`\$
DfcnYb`h`a`Y`f`VY`_Ua`Yb"

8]Y`9b`hk`]W`_`i`b[`ØVYf`Y]b`šU`fnY`b`h

6Y]Y]bYa`'6`]W`_`Ui`Z`X]Y`9b`hk`]W`_`i`b[`XYf`F`Yb`hYb`nY][`h'g]W`Y]b
[`Yk`]ggYf`@]W`hV`]W`_`Nk`]gW`Yb`&\$%`i`bX`&\$&'`gh]Y[`Yb`X]Y`F`Yb`hY
XYf`:`fUi`Yb`]b`B]YXYfgUW`gYb`i`a`VYY]bXfi`W`_YbXY`*`+`DfcnYb`h`'`a
J`Yf[`\Y]W`X`Uni`VY`hfi`[`XYf`5bgh]Y[`\VY]`XYb`A`ÅbbYfb`bi`f`'\$
DfcnYb`h`'8]Yg`VYXYi`hY`h`Y`XcW`b]W`hž`XUgg`X]Y`F`Yb`hYb`ØW`_Y
[`YgW`c`ggYb`]ghž`XYbb`U`bXYgk`Y]h]`YfX]YbYb`:`fUi`Yb`k`Y]hYf\]b`%%
DfcnYb`h`k`Yb][`Yf`U`g`XYf`6i`bXYgXi`fW`gW`b]hh`@YX][`]W`]b`XYf
FY[`]cb`<`Ubbcj`Yf`Yf\U`hYb`:`fUi`Yb`a`]h`-`(\$`9i`fc`a`Y`f`F`Yb`hY`U`g
XYf`Xi`fW`gW`b]hh]W`Y`K`Yfh"

8]Y`ghfi`_`hi`fY`Yb`i`fgUW`Yb`ZØf`XYb`:`YbXYf`DYbg]cb`:`Ud`g]bX
Y`XcW`\`Uf`hb`ÅW`][`"@Ui`h`8Y`ghU]g`g]bX`X]Y`[`Yf]b[`YfYb
5`hYfgY]b`_`ca`a`Yb`XUg`9f[`YVb]g`XYf`i`bhYfgW`]YX`]W`Yb
9fk`YfVgj`Yf`Åi`ZY`j`cb`A`ÅbbYfb`i`bX`:`fUi`Yb`"Gc`Yf\U`hYb`:`fUi`Yb
b]W`h`bi`f`k`Yb][`Yf`[`YgYhn`]W`Y`F`Yb`hY`ž`gcbXYfb`Ui`W`\`fY
VYhf]YV`]W`Y`i`bX`df]j`UhY`5`hYfgj`c`fgcf[`Y`]gh`VY`hfc`ZYb"

8Yf`6`]W`_`Ui`Z`X]Y`Ni`_`i`bZh

āa`]hYb`X]YgYf`VYgc`f[`b]gYffY[`YbXYb`NU`\`Yb`k`]fX`_`Ufž`XUgg
<`UbX`i`b[`gVYXUfZ`VYghY`\`h`9]bY`F`YZ`cfa`]gh`b`c`h`k`YbX][`ž`i`a`X]Y
5`hYfgj`c`fgcf[`Y`j`cb`:`fUi`Yb`ni`j`YfVYggYfb"8]Y`Ghi`X]Y`gW`Å[`h`ZØbZ
k`YgYbh]W`Y`ā`di`gY`j`cfž`i`a`\`Yf`[`Y[`YbghYi`Yfb`ni`_`ØbbYb.
Ni`b`ÅW`gh`gc`hY`X]Y`9fk`YfVgVYhY][`i`b[`j`cb`:`fUi`Yb`Yf\`Ø`h
k`YfXYbž`i`a`XUg`F`Yb`hY`b`gmghY`a`ni`Yb`h`UghYb"5i`W`Y]bY`VYggYfY
J`YfY]bVUf`_Y]h]j`cb`9fk`YfVgUfVY]h`i`bX`?`]bXYfVYhfYi`i`b[`gd]Y`hY]bY

nYbhfU`Y`F c`Y`"9]b`dUfhbYfgW\UZh`i)W\Yg`J c fgc f[Yj YfghÅbXb]g`]b
<Ui`g\U`hYb`i`bX`UhfU_hj`YfY`6Yhf]YVgfYbHYb`_ÒbbhYb`YVYbZU`g
ni`f`J YfVYggYfi`b[`VY]hfU[Yb`"Ni`i`[i`hYf`@Yhnh`gc`hY`ZfØ\nY]h][`ZØf
\Ø\YfY`F YbHYb`[YgdUfh`k YfXYb"

5b[Yg]W\hg`XYf`i: U_hcf]g]Yfi`b[`i`bX`XYb`5V\Åb[][_Y]hYb`]a
F YbHYbgmghYa`i`[]Vh`Yg`_`UfY`5bnY]W\Yb`XUZØfž`XUgg`X]Y`@ØW_Y
b]W\h`bi`f`Y]b`ZYa`]b]bYg`H\Ya`U`]ghž`gcbXYfb`XYf`[YgUa`hY
; YgY`gW\UZh`ni`[i`hY`_ca`a`hž`k`Ybb`X]Y`G]hi`Uh]cb`j`YfVYggYfh`k`]fX"
N]Y`gc`hY`Yg`gY]bž`XUgg`X]Y`5`hYfgj`c fgc f[Y`ZØf`U`Y`; YgW\`YW\hYf
ZU]f`i`bX`i`[YfYW\h`k`]fXž`XUa`]h`b]Ya`UbX`]a`i`5`hYf`]b`Z]bUbn]Y`Y
GW\k`]Yf][_Y]hYb`i`[YfÅh`i`

8YhU]`g	
C fh	@UbX_fY]g`@YYfž`8Yi`hgW\`UbX
E i`Y`Yb	<ul style="list-style-type: none">• k k k "bXf"XY• k k k "[Xj "XY• k k k "XYghUh]g"XY

6Ygi`W\Yb`G]Y`i`bg`Ui`Z`X]Y!bUW\`f]W\hYb`"Wċ`a