

GWÅ bÀddWÅ Yb ^U[ X`]b`6Yf`]b. `Gc`fYhhYb`G]Y  
@YVYbga ]hhY` `i bX` ; Y`X`°

9]b`Gi dYfa Uf\_h`]b`6Yf`]b!: f]YXf]WÅ g\U]b`V]YhYh` \cWÅ k Yfh][ Y  
@YVYbga ]hhY` `ni `ghUf`\_fYXi n]YfhYb`DfY]gYb`Ub" `?i bXYb  
bi hnYb`X]Y`5dd`/ ei ch/Hcc` ; ccX`Hc` ; c/ ei ch/Ži a  
bUWÅ \U`h][ `ni `gdUfYb`i bX` , VYffUgWÅi b[ ghØhYb`ni  
YbhXYW\_Yb"

6Yf`]b!: f]YXf]WÅ g\U]b`ž`8Yi hgWÅ `UbX`!`B5; #B5; `F YXU\_h]cb` `

⊕`6Yf`]b!: f]YXf]WÅ g\U]b` [ ]Vh`Yg`Y]bYb`Gi dYfa Uf\_hž`XYf`X]Y`DfY]gY  
Ui ZY]b`A ]b]a i a `fYXi n]Yfhi bX`XUa ]h`X]Y`<YfnYb`XYf  
GWÅ bÀddWÅ Yb`Å[ Yf` \ Ò\Yf`gWÅ`U[ Yb` `Àggh` `<]Yf`k ]fX`b]WÅ h`bi f  
[ YgdUfhž`gcbXYfb`Ui WÅ`XUg`K Y[ k YfZYb`j cb`@YVYbga ]hhY`b  
j Yf\]bXYfh`F Yb`Å`<Y]XYbž`XYf`⊕\UVYfž`\Uh`a ]h`gY]bYa `?cbnYdh  
j cb`Hcc` ; ccX`Hc` ; c`Y]bY`k U\fy`F Yj c`i h]cb`ja  
@YVYbga ]hhY` \UbXY` [ YghUfhYh` GhUhh`ØVYfhYi YfhYf`DfY]gY`Yfk UfhYh  
X]Y`?i bXYb`Y]bY`Vi bhY` , VYffUgWÅi b[ ghØhYž` [ YZØ` `h`a ]h  
\cWÅ k Yfh][ Yb`@YVYbga ]hhY`b`ni `Y]bYa `6fi WÅ hY]`XYg`DfY]gYg`

8]Y`?i bXYb`ghf`Òa Yb`]b`XYb`@UXYbž`Ga Ufhd\cbY`]b`XYf`<UbXž  
VYfY]h`ZØf`XUg`b`ÅWÅ ghY`GWÅ bÀddWÅ Yb`" `8]Y`a`Y]ghYb`j`YffUhYb`g]WÅ  
Xi fWÅ`XUg`<UbXm`ž`gU[ h`<Y]XYb`"A ]h`Y]bYa ` \_i fnYb`6`]W`\_Ui Z`X]Y  
fYgYfj ]YfhY`HØhY`Yf`U`hYb`g]Y`Zf]gWÅ Y`DfcXi`\_hYž`X]Y`gcbgh]a` `A`Ø`  
`UbXYb`k`ØfXYb`"J cb`Zf]gWÅ Ya`C Vghi bX` ; Ya`ØgY`V]g` \]b`ni  
\_Ògh]WÅ Ya`6fch`j cb` NY]h`ZØf`6fch` `X]Y`5i gk U\` ]gh`j ]Y`Z`À`h][  
i bX` [ Øbgh][ " : Øf`bi f`XfY]`cXYf`j ]Yf`9i fc` [ ]Vh`Yg`HØhYbž`XYfYb  
⊕\U`h`Y]bYb`K Yfh`j cb`V]g`ni`gYWÅ g`9i fc` \Uh`9]b`YWÅ hYf`8 YU`

@YVYbga ]hhY` `k Y[ k YfZYb`3`5i g[ YgWÅ `cggYb`°

<Y]XYbž'Y]b'Y\Ya U`][ Yf' ð[ Yb]Yi fž'\Uh'5bZUb[ ' &\$&' 'XYb'GWf]hh  
]b'X]Y'GY'VghghÀbX][ \_Y]h[ Yk U[ hž'i a 'XYb'A YbgWYb']b'gY]bYa  
?]Yn'Y]bY'bUW\U'h][ Y'5'hYfbUh]j Y'ni 'V]YhYb"' ð'i bgYfYa '?'Yn'\Uh  
Y]b'; YgW\ÀZh[ YZY\`h ž'Yf\_`Àfh'Yf"'GY]b'@UXYbž'XYf'']b'Y]bYf'\_'Y]bYb  
GY]hYbghfU» Y'j YfghYW\_h`]Y[ hž'V]YhYh'b]W\h'bi f'Y]bY'fYXi n]YfhY  
5i gk U\ ž'gcbXYfb'Ui W\Y]b'Y]bn][ Ufh][ Yg'9]b\_Ui ZgYf'YVb]g"  
?i bXYb'\_ÒbbYb']\fY'Y][ YbYb'6Y\À'hYf'a ]hVf]b[ Yb'i bX'X]Y  
[ Yk ØbgW\hYb'A Yb[ Yb'gY'Vgh'UVZØ`Yb' 'Y]b'?cbnYdhž'XUg'XYb  
HfYbX'ni 'k Yb][ Yf'J YfdUW\_i b[ 'i bhYfghØhnh"

8]Y'5dd'Hcc'; ccX'Hc'; c'\Uh'g]W\U'g'<]h'Yfk ]YgYbž'XYbb'g]Y  
Yfa Ò[ `]W\h'Yg'XYb'?i bXYbž'@YVYbga ]hhY`j cf'XYf'A Ø`hcbY'ni  
fYhhYb'i bX'[ `Y]W\h'Y]h][ ; Y'X'ni 'gdUfYb"' ð'(-) 'DfcnYbh'XYf': À`Y  
g]bX'X]Y'GUWYb'XUbb'k Y[ ž'VYf]W\h'Yh'<Y]XYb'ghc`n"'8]Y'?i bXYb  
g]bX'VY[ Y]ghYfh'i bX'bi hnYb'X]Y'5ddž'i a '\_fYUh]j`]b'XYf'?ØWY'ni  
k YfXYb"' <]Yf'\_Ubb'a Ub'XUg'; i hY'a ]h'XYa 'BØh`]WYb  
j YfV]bXYb ž'gU[ h'Y]bY'ni Zf]YXYbY'?i bX]b"'9]b'6Ygi W\]b'X]YgYa  
VYgcbXYfYb'Gi dYfa Uf\_h]gh'b]W\h'bi f'Y]bY'A Ò[ `]W\Y]hž'; Y'X'ni  
gdUfYbž'gcbXYfb'Ui W\Y]b'GWf]h]b'F]W\hi b[ 'BUW\U'h][ \_Y]h'

8YhU]`g	
Cfh	6Yf`]b!: f]YXf]W\g\U]bž'8Yi hgW\`UbX

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