HfUX]h]cb`]b` ; YZU\ f. 'GUUfVfØW_Yf
I bhYfbY\ a Yb`a Y`XYh`-bgc`j Ybn`Ub

9]b`hfUX]h]cbgfY]WYg`I bhYfbY\ a Yb`Ui g`XYa`GUUf`UbX
a Y`XYh`bUW`" &&`ž\ fYb`-bgc`j Ybn`Ub" `8]Y`Ni`_i bZh`XYf
: Ua` ]`YbhfUX]h]cb`ghY\ h`Ui Z`XYf`?]ddY`"A Y\ f`YfZU\ fYb`"

⇒ a`GUUf`UbXž`Y]bYf`F Y[]cb`8Yi hgW\`UbXgž`X]Y`ZØf`]\ fY
hfUX]h]cbgfY]WYb`I bhYfbY\ a Yb`VY`Ub bh`]ghž`nY]WYbYh`g]WY`Y]b
VYgcf[b]gYffY[YbXYf`HfYbX`UV. `8]Y`-bgc`j Ybn`Y]bYf`ØVYf`" \$\$
ž\ fY`U`hYb`: ]fa`U`\Uh`X]Y`c`_U`Y` ; Ya`Y]bgW`UZh`i bX`X]Y
k]fhgW`UZh`]WY`@UbXgW`UZh`ghUf`_`[ Yhfc`ZYb`" `8 Ug`VYhfc`ZYbY
I bhYfbY\ a Yb`Ui g`GUUfVfØW_Yb`\Uh`_Øfn`]WY`XYb`gW`k]Yf][Yb
GW`f]h`ni f`6YUbhfU[ i b[ `XYf`-bgc`j Ybn`i bhYfbca`a Yb`" `8]Yg`]gh
b]W`h`bi f`Y]b`F`ØW`gW`U[ `ZØf`X]Y`VYhfc`ZYbY` : Ua` ]`Yž`gcb`XYfb
Ui W`Y]b`VYXYi hYbXYg`NY]WYb`ZØf`X]Y`k]fhgW`UZh`]WY`G]h`Uh]cb`]b
XYf`F Y[ ]cb`"

K]fhgW`UZh`]WY` < YfUi gZcfXYfi b[ Yb`]a
GUUf`UbX

8]Y`K ]fhgW`UZh`]a`GUUf`UbX`VY]Z]bXYh`g]WY`]b`Y]bYf`Ub[YgdUb bhYb
@U[Y`" -b`XYb`YfghYb`A cbUhYb`XYg`ž\ fYg`&\$\$( `]gh`X]Y`NU\`XYf
I bhYfbY\ a Ybg]bgc`j YbnYb`ghUf`\_`Ub[Ygh]Y[Yb`" `8]Yg`ZØ\ fh`ni
ni bY\ a YbXYb`Gcf[ Yb`i bhYf`XYb`I bhYfbY\ a Yfb`i bX`]bbYf`U`V
XYf`6Y`Y[gW`UZhYb`" `8]Y`VYhfc`ZYbY` :]fa`U`ghY\ h`ghY`j YfhfYhYbX`ZØf
j]Y`Y`_`Y]bY`i bX`a ]hY`gh`AbX]gWY`6Yhf]YVYž`X]Y`]a`U`hi Y`Yb
k]fhgW`UZh`]WYb`I a ZY`X`\_`Aa dZYb`a ØggYb`" `8]Y` ; fØbXY`ZØf`X]YgY
GW`k ]Yf][ \_Y]hYb`g]bX`j ]Y`Z`h`[ž`i a ZUggYb`YXcW`cZi: U`hc`fYb`k]Y
ghY][YbXY`6Yhf]YVg`cghYb`i bX`[Yg`Ah] [ hY`A`Åf`_hY`"

8]Y`5i gk ]f`_i b[`Ui Z`X]Y` ; Ya`Y]bgW`UZh

8]Y'⊕gc'j Ybn'Y]bYg'HfUX]h]cbgi bhYfbY\ a Ybg`Uhb]W`h'bi f
5i gk]f_i b[Yb'Ui Z'X]Y'6YgW`ÅZh][ hYbž'gcbXYfb'n]Y\h'Ui W`[fÒ» YfY
[YgY`gW`UZh]W`Y'?cbgYei YbnYb'bUW`g]W`"@\_U`Y'; YgW`ÅZhY'i bX
Ni`Y]ZYfYf'gdØfYb'X]Y': c`[Ybž'k Ybb'Y]b`[fc» Yf'5fVY]h[YVYf
k Y[Z`h`': Ua`]YbVYhf]YVYž'X]Y'ØVYf'; YbYfUh]cbYb'\]bk Y[
Zcf]YfhYbž'gY\Yb'g]W`'a`]h'XYf'A Ò[`]W`_Y]h`\_cbZfcbh]Yfhž'XUgg`]\fY
Y][YbY'Yi]ghYbn]Y`Y'; fi bX`U[Y`]b': fU[ Y`[YghY`h'k]fX"8]Y
ZcfhgW`fY]hYbXY'GW`Y`Y»i b[ `gc`W`Yf'I bhYfbY\ a Yb`\_ØbbhY`XUg
[YgY`gW`UZh]W`Y`B`Ymk Yf\_]b`XYf'F Y[]cb`XYghUV`]g]YfYb"

8 Yf`K UbXY`]b`XYf`I bhYfbY\ a Ybg`UbXgW`UZh

8]Y`<YfUi gZcfXYfi b[ Yb`ZØf`XUg'HfUX]h]cbgi bhYfbY\ a Yb
fYZY_h]YfYb'Y]bYb'VfY]hYfYb'HfYbX`]b`8Yi hgW`UbXž'k c`j]Y`Y
U'hY]b[YgYggYbY':]fa Yb`[ Y[ Yb'X]Y'i bYfV]hh]W`Yb'; Y[YVYb\Y]hYb
XYf'a cXYfbYb'K]fhgW`UZh\_Åa`dZb'a ØggYb"8]YgYf`K UbXY`
YfZcfXYfh]j cb'hfUX]h]cbY`Yb': ]fa Ybž'g]W`bYi`ni`YfZ]bXYb'i bX
g]W`ghÅf`Yf`Ui Z'X][ ]hU`Y`HYW`bc`c[ ]Yb`i bX`bYi Y`A`Åf`hY`ni
_cbnYbhf]YfYb"»XcW`k YfXYb`j]Y`Y`X]YgYf':]fa Yb`j cb`Å`hYfYb
; YbYfUh]cbYb`[ YZØ\fhž'X]Y'a Ò[ `]W`Yfk Y]gY'i bX`Ui Z[fi bX
ZY\`YbXYf'F Yggci fW`b`b]W`h`]b`XYf`@U[ Y`g]bXž'gW`bY`][Ybi [`ni
fYU[]YfYb"

5i gV`]W`_`Ui Z'X]Y`Ni`_i bZh

8]Y`b`ÅW`ghYb`GW`f]hhY`ZØf`XUg`VYhf`cZZYbY`I bhYfbY\ a Yb`k YfXYb
YbhgW`Y]XYbX`gY]b"8]Y': cfhZØ\fi b[`XYf': Ua`]YbhfUX]h]cb`_ØbbhY
a Ò[`]W`Yfk Y]gY`bcW`[YfYhhYh'k YfXYbž'k Ybb'Yg`[ Y`]b[hž
⊕j YghcYfYb`cXYf'I bhYfghØhnYf`ni`Z]bXYb"⊕`YXYa`': U`k]fX`X]YgY
G]hi Uh]cb`U`g`k ]W`h][Yf`K YW`fi Z`ZØf`X]Y`5bZØ\YfY`XYf'F Y[]cb
X]YbYb'a ØggYbž'i a`Ub[ Ya`YggYbY`GhfUhY[ ]Yb`ni`Yb`hk]W`\_Y`bž'X]Y
X]Y`k ]fhgW`UZh]W`Y`GhUV`]h`h`i bX`XUg`, VYf`YVYb`hfUX]h]cbY`Yf
I bhYfbY\ a Yb`g]W`Yfb`_ØbbYb"

8U\Yf`V`Y]Vh`UVni`k UfhYbž'k]Y`g]W`X]Y`G]hi Uh]cb`k Y]hYfYb`hk ]W`_Y`b
k]fXž'i bX`k Y`W`Y`A U» bU\ a Yb`Yf[ f]ZZYb`k YfXYbž'i a`X]Y
; YgW`]W`hY`X]YgYg`ØVYf'` \$`\$`»\fY`U`hYb`I bhYfbY\ a Ybg`ni

VYk U\ fYb`i bX`Y]bYb`dcg]hj Yb`9]bZi gg`Ui Z`X]Y` ; Ya`Y]bgW\UZh`i bX`
X]Y`k`]fhgW\UZh`]W\Y`GhUV`]`hA`h`]a` `GUUf`UbX`ni` `Yf\U`hYb`"

` `B 5;

8 YhU]`g

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