

K UbXYfYf`Yb hXYW_h`GW`AXY`']a` < Ufn.
F`ÀhgY`\" UZhY` < Yf_i bZh`V`Y]Vh`i b`_`Uf

~a` < Ufn`ZUbX`Y]b`K UbXYfYf`Y]bYb`a` YbgW`]WYb`GW`AXY`"
I b[Y`_`Àfh`g]bX` < Yf_i bZh`i bX`J YfV`Y]Vž`k`À`fYbX`X]Y
I bhYfgi W`i b[`ghcW`_h"

9]b`gW`cW`_Y]fYbXYf` : i bX`]a` < Ufn`VYgW`ÀZh][h`gY`h`Y]b][Yb
A`cbUhYb`X]Y`6Y`\`ÖfXYb`"~a` A`U]`&\$&(`Yb hXYW`_hY`Y]b`K UbXYfYf`]b
XYf`B`À`Y`j`cb`7`U`i`gh`U`!`NY`YfZY`X`Y]bYb`a` YbgW`]WYb`GW`AXY`]b
Y]bYa`K`U`X[YV]Yh`"Hf`ch`X`Yg`NY]hfUi`a`gž`XYf`gY]hXYa`j`Yf[Ub[Yb
]ghž`[]Vh`Yg`bUW`k`]Y`j`cf`j`]Y`Y` ; Y`Y]a`b]ggY`i`a`X]YgYb
gW`Ui`f][Yb` : i bX`"9g`V`Y]Vh`i b`_`Ufž`i`a`k`YggYb` , VYffYghY`Yg`g]W`
\`UbXY`h`i`bX`i`bhYf`k`Y`W`Yb`I`a`gh`À`bXYb`XYf`GW`AXY`Xcfh
[Y`UbXYh]`gh"

9]b`i`b`Y]a` `]W`Yg`6]X`Z0f`YXYbž`XYf`X]Y`FY[]cb`VYfY]gh`9]b
a`YbgW`]WYf`GW`AXY`ž`XYf`i`bhYf`6`À`i`a`Yb`j`YfVcf[Yb`U[ž
i`bYbhXYW`_hV]g`ni`X]YgYa`gW`]W`gU`\" UZhYb`A`ca`Ybh`"8]Y
i`fgdf0b[`]W`Yb`9fa`]h`i`b[Yb`Yf[UVYb`_Y]bY`k`Y]hYfYb`?bcW`Yb
cXYf`d`Yfg0b`]W`Yb` ; Y[Ybgh`À`bXY`]b`XYf`B`À`Y`XYg` : i bXcfhgž`k`Ug
X]Y` : fU[Y`bUW`X`XYf` < Yf_i bZh`i bX`X`Yb`h]h`À`h`k`Y]hYf`_ca`d`n]Yfh`"8Yf
GdfYW`Yf`XYf`Dc`n]Y`]b` ; cg`Ufž`H`c`fghYb`9`Yfgž`VYgh`À`h][hYž`XUgg
V]g`Ub[`_Y]bY` ; YbYgY`XYf`I`a`gh`À`bXY`X]YgYg`hfU[]gW`Yb` : U`g
bUW`j`c`n]Y`VUf`]gh"

@Ub[gUa`Y` : c`f`hgW`f]hhY`VY]`XYf
I`bhYfgi`W`i`b[

B`UW`X`Ya` : i bX`k`i`fXY`XYf`GW`AXY`ni`f`[Yf]W`hga`YX]n]b]gW`Yb
I`bhYfgi`W`i`b[`Ub`X]Y`A`YX]n]b]gW`Y` < cW`gW`i`Y`]b` < Ubbcj`Yf
0VYf[YVYb`"9][Ybh]W`gc`hY`a`Ub`UbbY`a`Ybž`XUgg`X]Yg`ni

gVW bY`Yb`9f[YVb]ggYb`ZØ\ fhž`]bgVYgcbXYfY`]b`NY]hYbž`]b`XYbYb
: cfYbg]_`]b`?`f]a`]gYf]Yb`cZh`]b`K`]bXYgY`Y`Z`b`_h]cb]Yfh`DfcZYggcf
8f`A`]WUY`?`]bhgWUfž`@Y]hYf`XYg`bgh]hi`hg`ZØf`F`YW`hga`YX]n]bž
VY`Yi`W`hYh`YXcW`X]Y`FYU`]hÅh`K`]f`\UVYb`Y]XYf`Y]bY`gY\`f
Ub[YgdUbbhY`GhY`Ybg]hi`Uh]cbž`k`cXi`fW`U`Ub[Y
6YUfVY]hi`b[gnY]hYb`fYgi`h]YfYb`" `8]Yg`VYXYi`hYhž`XUgg`\Åi`Z[`: `À`Y
a`]h`k`Yb][Yf`c`ZYbg]W`h]W`Yf`8f]b[`]W`_Y]h`ni`fØW`[YghY`h`k`YfXYb
a`ØggYbž`k`Ug`]a`U`_hi`Y`Yb`: U`ni`f`j`YfnØ[YfhYb`5bU`mgY`[YZØ\ fh
\Uh`

K`Å`fYbX`X]Y`Dc`nY`\c`Zhž`]b`XYb`_ca`a`YbXYb`K`cW`Yb
9f[YVb]ggY`ni`Yf\U`hYbž`nY][h`XYf`: U`Ui`W`X]Y
<YfUi`gZcfXYfi`b[Yb`XYf`fYU`Yb`: cfYbg]_`]a` `; Y[YbgUhn`ni`]`\fYb
Z]_h]cbU`Yb`8UfghY`i`b[Yb`"J`]Y`Y`Ni`gW`Ui`Yf`[`Ui`VYbž`XUgg`X]Y
5bU`mgYb`k`]Y`8B5!HYghg`bU\Yni`Ui`[YbV`]W`_]W`j`cf`]Y[Yb`"8]Y
FYU`]hÅh]gh`YXcW`cZh`_ca`d`YI`Yf`i`bX`Xi`fW`dYfgcbY`Y`9b[dÅggY
YfgW`k`Yfh`

6]g`Y`hnh]g]bX`: fU[Yb`ni`f`; YgW`YW`hYfni`[Y\Øf][_Y]h`XYg
GW`ÅXY`gž`gY]bY`<Yf`_i`bZhž`XUg`5`hYf`XYf` , VYffYghY`i`bX`X]Y
I`a`ghÅbXY`gY]bYg`HcXYg`c`bY`5b`hk`cfh`"8]Y`9fa`]hh`Yf`ghY\Yb`j`cf
Y]bYa`F`ÅhgY`ž`XUg`K`cW`Yb`bUW`X`Ya` `: i`bX`]a`a`Yf`bcW`i`b[Y`Øgh
V`Y]Vh`"8Ug`: Y\`Yb`k`Y]hYfYf`6Yk`Y]ga`]hhY`a`UW`h`Yg`gW`k`]Yf][ž
Y]bY`H\Ycf]Y`ØVYf`X]Y`≠Yb]h]hÅh`XYg`J`Yfgc`fVYbYb`Ui`Zni`ghY`Yb`"

≠`XYf`FY`[]cb`i`bX`]b`XYb`gcn]U`Yb`A`YX]Yb`\Uh`X]YgY`; YgW`]W`hY
Y]b`[fc`»Yg`≠hYfYggY`[Yk`YW`_hž`XU`X]Y`A`YbgW`Yb`a`]h`9bhgYhnYb
ØVYf`XUg`a`mghYf]ØgY`GW`]W`_gU`XYg`I`bVY`Ub`bhYb`gdY`_i`]YfYb`"
5bk`c`bYf`i`bX`K`UbXYfYf`]b`XYf`B`Å\Y`XYg`7Ua`d]b[d`UhnYg`g]bX
ØVYf`XYb`: i`bX`Yb`hgY`hnhž`UVYf`Ui`W`bYi`[]Yf][`Ui`Z`X]Y
<]bhYf[fØbXY`X]YgYf`gW`cW`]YfYbXYb`9bhXYW`_i`b["

6YhfUW`hi`b[Yb`ni`f`6YXYi`hi`b[`XYg`: U`g`

8Yf`: i`bX`gY`Vgh`a`U[`i`b`Y]j`c`gY]bž`XcW`Yf`VY`Yi`W`hYh`Ui`W`X]Y
GW`k`]Yf][_Y]hYbž`j`cf`XYbYb`X]Y`ZcfYbg]gW`Y`K`]ggYbgW`UZ`hghY`h`"
8]YgY`I`a`ghÅbXY`a`UW`Yb`XYi`h]W`ž`k`]Y`k`]W`h][`UX`Åei`UhY
FYggci`fW`b`]b`XYf`9fa`]hh`i`b[gUfVY]h]g]bX`"8Yf`: U`Yf]bbYfhi`bg`

XUfUbžXUgg]bXYfFYU]hÅh'b]WÅh]a a Yf'gWÅbY`Y`@Øgi b[Yb
j YfZØ[VUf'g]bX'i bX'XUgg'VY]i b[Y`ØghYb': Å`Yb': YXi`X'i bX
<]b[UVY`YfZcfXYf`]WÅ'g]bXž'i a`@WÅh]bg'8i b_Y`ni`Vf]b[Yb""8]Y
@Ub[Yk Y]Y`XYf'6YUfVY]hi b[gnY]hYb`_ØbbhY`]b`Y]bYf'ghfYb[
Vi X[Yh]YfhYb`l a [YVi b[`k]Y`XYf`Yi h][Yb`b]WÅh'ØVYffUgWÅYbX
gY]bžXcW`g]Y`j YfghÅf`hXUg'6YXØfZb]g`bUWÅ`VYggYfYf
l bhYfghØhni b[`i bX`C f[Ub]gUh]cb`ZØf`ZcfYbg]gWÅY`9]bgÅhY`]a
[Ubnyb`@UbX"

8]Y`K Y]hYfYbhk]W`i b[`]b`X]YgYa` : U``_ØbbhY`b]WÅh`bi f`Y`ZYbž
X]Y`≠Ybh]hÅh`XYg`J Yfghc`fVYbYb`Ui Zni`_ÅfYbž`gcbXYfb`Ui WÅ`Y]bYb
8]U`c[`ØVYf`X]Y`Bchk YbX][`_Y]h]j cb`a Y`f`F Yggci`fWÅb`ZØf`X]Y
: cfYbg]_`Ubghc» Yb""B]Ya UbX`a`ØWÅhY`g]WÅ`a`]h`XYf`J`cfghY``i b[
UVZ]bXYbžXUgg`XYf`GWÅ`ÅXY`Y]bYg`i bVY`_UbbhYb`A YbgWÅYb
i bYbhXYW`h]b`Y]bYa`K U`X`V`Y]Vhž`k`Å`fYbX`X]Y`Ghi bXYb`i bX`HU[Y
]bY]bUbXYfZ]Y» Ybž`c`bY`XUgg`5bhk`cfhYb`Zc`[Yb"

8]Y`9bhXYW`i b[`j cb`a YbgWÅ`]WÅYb` , VYffYghYb`k]fZi`b]WÅh`bi f
: fU[Yb`ni f`≠Ybh]hÅh`i bX`XYb`l a ghÅbXYb`XYg`HcXYg`Ui Zž`gcbXYfb
ZØ`fh`Ui WÅ`ni`Y]bYf`VfY]hYfYb`8]g`_i gg]cb`ØVYf`ZcfYbg]gWÅY
K]ggYbgWÅUZhYb`i bX`XYfYb`< YfUi`gZcfXYfi b[Yb`]b`8Yi hgWÅ`UbX"
8]Y`9fZcfWÅi b[`gc`WÅYf': Å`Y`[YghU`hYhg]WÅ`cZi`_ca`d`Yl`i bX
`Ub[k]Yf][` "

⇒ `Ni`gUa`a Yb`Ub[`a`]h`XYa`U`_hi`Y`Yb` : U``]a`<`Ufn`]gh`Yg`k]WÅh][`ž
X]Y`GWÅ`k]Yf][`_Y]hYb`ni`VYhfUWÅ`hYbž`a`]h`XYbYb`F`YWÅ`hga`YX]n]bYf
_cb`Zfc`bh]Yfh]g]bX""DYfgcbY`Y`9b[`d`ÅggY`_ØbbYb`X]Y`l bhYfgi`WÅi b[
Yf`YV`]WÅ`j YfnØ[Yfbž`k Ug]b`XYf`ØZZYbh]WÅYb`K U`fbY`a`i b[`c`Zh
b]WÅh`VYfØW`g]WÅh][`h`k]fX""8]Y`K`]ggYbgWÅUZh`i bX`X]Y`ZcfYbg]gWÅY
A YX]n]b`Zi`b`_h]cb]YfYb`b]WÅh]b`XYf`[`Y]WÅYb`GWÅbY``][`_Y]h`i bX
9ZZ]n]Ybn`k]Y`]b`Z]_h]cb`U`Yb`A`YX]Yb"

F Y`Yj UbhY`ZcfYbg]gWÅY` : c f g W Å i b [`] b
8 Yi hgWÅ`UbX

⇒ `8Yi`hgWÅ`UbX`]gh`X]Y`ZcfYbg]gWÅY`K`]ggYbgWÅUZh`Y]b`g]WÅ`ghÅbX][
k]Y]hYfYbhk]W`_Y`bXYg': Y`X""6Y]gd]Y`gk`Y]gY`U`h`X]Y`A`YX]n]b]gWÅY
<c`WÅ`gWÅi`Y`<`Ubb`c`j`Yf`]b`XYb`Y`hnhYb`≠`Å`fYb`Ub`VYXYi`hYbXYb

: c f g W i b [g d f c Y _ h Y b [Y U f V Y] h Y h z X] Y ' g] W X ' a] h X Y f
K Y] h Y f Y b h k] W _ i b [' j c b ' 8 B 5 ! 5 b U ` m g Y b ' i b X ' X Y f ' J Y f V Y g g Y f i b [' X Y f
= X Y b h] Z] _ U h] c b ' j c b ' a Y b g W X `] W X Y b ' , V Y f f Y g h Y b ' V Y Z U g g Y b " ' 8] Y g Y
A Y h \ c X Y b ' g] b X ' Y b h g W X Y] X Y b X z i a ' : A ` Y ' k] Y ' X Y b ' U _ h i Y ` Y b ' g W X b Y ` `
n i ' _ ` A f Y b " G h i X] Y f Y b X Y ' i b X ' : U W X _ f A z h Y '] a ' 6 Y f Y] W X ' X Y f
F Y W X h g a Y X] n] b ' g h Y \ Y b ' Y X c W X ' j c f ' X Y a ' D f c V ' Y a ' z X U g g ' c Z h i b] W X h
[Y b Ø [Y b X ' F Y g g c i f W X b ' n i f ' J Y f Z Ø [i b [' g h Y \ Y b z i a ' Y] b Y ' n Ø [] [Y
6 Y U f V Y] h i b [' U ` Y f : A ` Y ' n i ' [Y k A \ f ' Y] g h Y b "

5 _ h i Y ` Y ' < Y f U i g Z c f X Y f i b [Y b '] b ' X Y f ' Z c f Y b g] g W X Y b A Y X] n] b

8] Y ' < Y f U i g Z c f X Y f i b [Y b '] b ' X Y f ' Z c f Y b g] g W X Y b ' A Y X] n] b '] b
8 Y i h g W X ` U b X ' g] b X ' j] Y ` Z A ` h [" ' 5 i Z [f i b X ' j c b ' D Y f g c b U ` a U b [Y ` i b X
Z] b U b n] Y ` Y b ' 9] b g W X f A b _ i b [Y b ' _ Ø b b Y b ' j] Y ` Y ' = b g h] h i h Y ' X] Y
U b g h Y \ Y b X Y b ' : A ` Y ' b] W X h '] b ' X Y f ' b Ø h] [Y b ' 8 f] b ['] W X _ Y] h ' V Y U f V Y] h Y b "
8] Y g ' Z Ø \ f h X U n i z X U g g ' X] Y ' 5 i Z _ A f i b [' j c b ' J Y f V f Y W X Y b z ' X] Y
a Ø ['] W X Y f k Y] g Y ' a] h ' a Y b g W X `] W X Y b ' , V Y f f Y g h Y b
n i g U a a Y b \ A b [Y b z ' g] W X ' Ø V Y f ' A c b U h Y ' c X Y f ' g c [U f ' X \ f Y
\] b U i g n Ø [Y f b ' _ U b b "

9] b ' 6 Y] g d] Y ` Z Ø f ' X] Y ' 6 Y ` U g h i b [Y b z ' a] h X Y b Y b ' Z c f Y b g] g W X Y ' = b g h] h i h Y
n i ' _ A a d Z Y b ' \ U V Y b z '] g h X] Y ' g h Y] [Y b X Y ' 5 b n U \ ` U b
= X Y b h] Z] n] Y f i b [g U i Z h f A [Y b z ' X] Y ' X i f W X ' Y] b Y ' k U W X g Y b X Y g ' = b h Y f Y g g Y
U b ' [Y b Y U ' c [] g W X Y b ' 8 B 5 ! 8 U h Y b V U b _ Y b ' f Y g i ' h] Y f h " K A \ f Y b X ' X] Y g Y
8 U h Y b V U b _ Y b ' k Y f h j c ` Y ' <] b k Y] g Y `] Y Z Y f b ' _ Ø b b Y b z ' g] b X ' g] Y ' c Z h ' a] h
Y] b Y f ' J] Y ` n U \ ` j c b ' Y h \] g W X Y b ' i b X ' f Y W X h '] W X Y b ' : f U [Y b ' j Y f V i b X Y b z
X] Y ' V V Y b Z U ` g ' V Y U b h k c f h Y h ' k Y f X Y b ' a Ø g g Y b "

2 Z Z Y b h `] W X Y ' K U \ f b Y \ a i b [' i b X ' A Y X] Y b

8] Y ' A Y X] Y b ' h f U [Y b ' n i f ' K U \ f b Y \ a i b [' X Y f : c f Y b g] _ ' V Y] " 8] Y
\ A i Z [g h Y b ' 8 U f g h Y ` i b [Y b '] b : Y f b g Y \ g Y f] Y b ' g i [[Y f] Y f Y b z ' X U g g
9 f [Y V b] g g Y _ i f n Z f] g h [' i b X ' a] h ' U V g c ' i h Y f ' G] W X Y f \ Y] h ' Y f n] Y ` h
k Y f X Y b ' _ Ø b b Y b " ' 8] Y g ' Z Ø \ f h ' n i ' Y] b Y a ' A] g g j Y f g h A b X b] g '] b ' X Y f
2 Z Z Y b h `] W X _ Y] h ' Ø V Y f ' X] Y ' h U h g A W X `] W X Y b ' < Y f U i g Z c f X Y f i b [Y b z ' X Y b Y b
g] W X : U W X _ f A z h Y ' [Y [Y b Ø V Y f g Y \ Y b " ' G c ` W X Y ' 8 U f g h Y ` i b [Y b ' _ Ø b b Y b
i b f Y U '] g h] g W X Y ' 9 f k U f h i b [Y b ' g W X Ø f Y b ' i b X ' X Y b ' 8 f i W _ U i Z

9fa]hhi b[gVY\ÒfXYb`Yf\Ò\Yb"

8]Y`Dc`nY]`i bX`X]Y`ZcfYbg]gWXYb`bgh]hi hY`g]bX`g]W`X]YgYf
8]g_fYdUbn`VYk i ggh`i bX`j Yfgi WXYbž`X]Y`² ZYbh`]W`_Y]h
Ui Zni `ÀfYbž`i a`Y]b`VYggYfYg`J Yfgh`ÀbXb]g`ZØf`X]Y`?ca`d`YI`]h`h
XYf`ZcfYbg]gWXYb`K`]ggYbgW`UZhYb`ni`ZØfXYfb`"9]bY`\`Ài`Z[`Y
FØW`a`Y`Xi`b[`Ub`X]Y`A`YX]Yb`]ghž`XUgg`X]Y`F`YU`]h`h`c`Zij`]Y`
`Ub[`gUa`Yf`]gh`i bX`j`cb`j`]Y`Yb`:`U`hc`fYb`UV`\`Àb[`hž`X]Y`Ui`»`Yf`U`V
XYg`9]bZi`ggVYfY]W`g`XYf`9fa`]h`Yf`Y[`Yb`"

8YhU]`g

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