

I bZU``Zi W h]b`? UggY`. `F UXZU\ fYf j Yf`Y hnhž`Dc`]nY]`gi W h`NYi [Yb

B UW`Y]bYa `I bZU``]b`? UggY``ZØW hYhY`XYf` : U\ fYf`Y]bYg
[fUi Yb`/ ei ch/7Ufg\Uf]b[/ ei ch!`?`Y]bk U[Ybg``8Yf
* (!Å\ f][Y`F UXZU\ fYf`k i fXY`j Yf`Y hnh`

⊕`? UggY``_Ua`Yg`Ua`j Yf[Ub[YbYb`8cbbYfghU[`ni`Y]bYa
VYXUi Yf`]W Yb`J cfZU``ž`VY]`XYa`Y]b`F UXZU\ fYf`j Yf`Y hnh`k i fXY``9g
\ UbXY`hY`g]W`i a`Y]bYb`* (!Å\ f][Yb`A Ubbž`XYf`]b`XYf
; cYh\YghfU» Y`i bhYfk Y[g`k Ufž`U`g`Yf`a`]hY]bYa` [fUi Yb
?`Y]bk U[Yb`_c``X]YfhYž`XYggYb` : U\ fYf`UbgW`]Y» YbX`i bYf_Ubbh
Zc\``8]YgYg`9fY][b]g`U h]b`XYf`GhUXh`VYfY]hg`ZØf`5i ZgY\Yb
[Ygcf[hž`i bX`X]Y`Dc`]nY]`]gh`U_h]j`U`i ZXYf`Gi W`Y`bUW`NYi [Yb`

8Yf`I bZU``YfY][bYhY`g]W` [Y[Yb`%*`"() `i \fž`k Å\ fYbX`XYf
F UXZU\ fYf`ghUXhY]bk Åfhg`Z` \f``@Ui h`XYb`5i ggU[Yb`XYf`Dc`]nY]
bÅ\YfhY`g]W`XYf`?`Y]bk U[Ybž`XYf`d`Öhn`]W`j ca`fYW`hYb
: U\ fVU\bfUbX`cgZ` \f`i bX`bUW```]b_g`Ui ggW`YfhY``8Yf`* (!Å\ f][Y
a`i gghY`Y]bY`J c``VfYa`gi b[`Xi fW`ZØ\ fYbž`k Ug`]b`ni` : U``VfUW`hY`
8UVY]`nc[`Yf`g]W`DfY``i b[Yb`i bX`GW`ØfZk`i bXYb`Ub`5fa`Yb`i bX
6Y]bYb`ni` ``8Yf`K U[Yb`Z` \f`c`bY`Ubni` \U`hYb`k Y]hYf`i bX`Vc[`]b
X]Y`<`i hYbghfU» Y`UV`

9fa]hh`i b[Yb`XYf`Dc`]nY]

8]Y`I bZU``Zi W h[fi ddY`XYf`Dc`]nY]`\Uh`bi b`X]Y`5i Z[UVYž`XYb
: U\ fYf`XYg`ZØW`hYbXYb` : U\ fnYi [g`ni`]XYbh]Z]n]YfYb``8f]b[YbX
[Ygi W`h`k YfXYb`NYi [Ybž`]bgVYgcbXYfY`Y]b`Å`hYfYg`9\YdUUfž`XUg
cZYbVUf`XUg`HY]`_YbbnY]W`Yb`<F!E`UV`YgYb`_cbbhY``8]Y`9\YfUi
cXYf`XYf`9\Ya`Ubb`\Uh`XYb`F UXZU\ fYf`bUW`XYa`I bZU``
Ub[YgdfcW`Yb`i bX`k`]W`h][Y`⊕Zcfa`Uh]cbYb`VYfY]h[YghY``hž`YXcW`

[UV`Yg`_Y]bY`A`Ò[`]W`_Y]h`ZØf`XYb` ; YgW`ÀX][hYbž`]\fY
?cbhU`hXUhYb`ni`bch]YfYb"

8]Y`Dc`nY]`Yfa`i`h][h`U`Yž`X]Y`XYb`J`cfZU`b`XYf` ; cYh`YghfU»Y
VYcVUW`hYh`UVYb`cXYf`bZcfa`Uh]cbYb`ØVYf`XYb`[fUi`Yb
?`Y]bk`U[Yb`a`]h`XYf`cfUb[YZUfVYbYb`5i`ZgW`f]Zh`7Ufg`Uf]b[
UVYbž`g]W`ni`a`Y`XYb`"9g`]gh`b]W`h`bi`f`j`cb`6YXYi`hi`b[ž`XYb
I`bZU`j`Yfi`fgUW`Yf`ni`f`F`YW`YbgW`UZh`ni`n]Y`Ybž`gcbXYfb`Ui`W`ž`i`a
g]W`Yfni`ghY`Ybž`XUgg`À`b`]W`Y`J`cfZ`Y`]b`XYf`Ni`_i`bZh]`Yfa`]YXYb
k`YfXYb`_`ÒbbYb"

8Yf` : U`ffUXZU`fYfž`XYf`Ui`Z`XYa`K`Y[`ni`f`bYbghUXh`k`Ufž`_`ÒbbhY
Xi`fW`XUg`gW`bY`YfY`<UbXYb`j`cb`5i`[YbnYi`[Yb`cXYf
J`Yf`_`Y`fghY]`bY`a`Yfb`k`Yb][Yf`gW`k`Yf`j`Yf`Yhnh`k`cfXYb`gY]b`"Δ`fY
5i`ggU[Yb`_`ÒbbhYb`Yb`hgW`Y]XYbX`XUZØf`gY]bž`XYb`J`cfZU`
j`c`gh`À`bX][`Ui`Zni`_`À`fYb"

8]Y` : fU[Yž`X]Y`V`Y]Vhž`]gh`K`Ufi`a`Z`ØW`hYh`Ya`UbX`bUW`Y]bYa
I`bZU`3`8Yf`GW`cW`_i`bX`X]Y`K`i`h`_`ÒbbYb`]a`X]fY`_`hYb`A`ca`Ybh
Y]bY`F`c`Y`gd]Y`Ybž`UVYf`X]Y`fYW`h]W`Yb`?`cbgYei`YbnYb`Y]bYf
I`bZU`Zi`W`h`_`ÒbbYb`gW`k`Yfk`]Y[YbX`gY]b`"b`gVYgcbXYfY`]b
8Yi`hgW`UbX`]gh`X]Y`GhfUZ`ZØf` : U`fYfZi`W`h`c`W`ž`i`bX`X]Y
; YgY`gW`UZh`g]Y`h`X]Y`g`U`g`Y]bYb`gW`k`YfYb`J`Yfghc»`Ub`"9g`]gh
k`]W`h][ž`J`YfUbhk`cfhi`b[`ni`ØVYfbY`a`Yb`i`bX`XYb` ; YgW`ÀX][hYb
]b`Y]bYf`gc`W`Yb`G]h`Uh]cb`b]W`h`U`Y]bY`ni`UggYb"

5i`Zfi`Z`ni`f`A`]h`]\`ZY

8]Y`Dc`nY]`B`cfX`Y`ggYb`h`X]Y`2`ZYbh]W`_Y]hi`a`A`]h`]\`ZY
[YVYhYb`"NYi`[Yb`k`YfXYb`Ui`Z[YZcfXYfhž`g]W`i`bhYf`XYf
HY`Y`Zcbbi`a`a`Yf`\$)`*`%`#`%`\$`ni`a`Y`XYbž`i`a`<]bk`Y]gY`ni`[YVYbž
X]Y`ni`Y]bYf`gW`bY`YfYb`5i`Z`_`Àfi`b[`XYg` : U`g`ZØ`fYb`_`ÒbbYb`"8`Ug
HY]`Yb`j`cb`bZcfa`Uh]cbYb`_`Ubb`b]W`h`bi`f`XUni`VY]hfU[Ybž`XYb
H`hYf`ni`Z]bXYbž`gcbXYfb`gW`Ønh`i`a`Ò[`]W`Yfk`Y]gY`Ui`W`UbXYfY
F`UXZU`fYf`i`bX`J`Yf`_`Y`fghY]`bY`a`Yf`]b`XYf`Ni`_i`bZh"

b`XYf`gW`bY`YV][Yb`K`Y`h`j`cb`Y`i`hY`]gh`Yg`Y]W`hž`k`]W`h][Y
8YhU]`g`ni`ØVYfgY`Ybž`VYgcbXYfg`bUW`Y]bYa`i`bYfk`UfhYhYb

J cfZU`"8YbbcW`g]bX`5i [YbnYi [YbVYf]W`hY`cZh`XYf`GW`ØggY`ni f
@Øgi b[`gc`W`Yf`i: Å`Y`"»XYf`<]bk Y]g`nÅ`h`i bX`[Ya`Y]bgUa`_Ubb
X]Y`; YgY`gW`UZh`g]W`YfYfY`GhfU»Yb`gW`UZZYb"

8Yf`J cfZU`]b`?UggY`nY][h`XYi h]W`ž`k]Y`k]W`h][`Yg`]ghž
Ui Za`Yf_gUa`i bX`j YfUbhk`cfhi b[gVYk`i`ggh]a`GhfU»Ybj`Yf_Y`f`ni
gY]b`"K`Ybb`YXYf`VYfY]h]ghž`VY]i bZ`Å`Yb`ni`_Y`ZYb`i bX
J YfUbhk`cfhi b[`ni`ØVYfbY`a`Ybž`_ØbbYb`k`]f`[Ya`Y]bgUa`XUni
VY]hfU[Ybž`X]Y`G]W`Yf`Y]h]a`GhfU»Ybj`Yf_Y`f`ni`Yf`_Ø`Yb`i bX
gc`W`Y`hfU[]gW`Yb`9fY][b]ggY`ni`j`Yf`]bXYfb"

8YhU]`g`ni`a`i`bZU`_`Yf[`Ub[

8Yf`i`bZU`]b`XYf`;`cYh`YghfU»Y`YfY][bYhY`g]W`i`bhYf`i`a`gh`Å`bXYbž
X]Y`VY]`J`Yf_Y`f`gi`bZ`Å`Yb`b]W`h`i`b[`Yk`_Ø`b`]W`g]bX`"9`g`gW`Y]bž
XUgg`XYf`i: U`fYf`XYg`[`fUi`Yb`?`Y]bk`U[`Ybg`XYb`5VghUbX`ni
UbXYfYb`J`Yf_Y`f`ghY]`bY`a`Yfb`b]W`h`f]W`h][`Y]bgW`Å`h`hYž`U`g`Yf
d`_Ø`h`]W`X]Y`i: U`fVU`b`k`YW`gY`hY`"»gVYgc`bXYfY`]b`gh`Å`h]gW`Yb
;`YV]YhYb`k`]Y`?`UggY`ž`k`c`j`]Y`Y`i: U`ffUXZU`fYf`i`bhYfk`Y[`g`g]bXž
a`ØggYb`5i`hcZU`fYf`VYgc`bXYfg`Ui`ZdUggYb`i`bX`F`ØW`g]W`h`bY`a`Yb`"

: U`ffUXZU`fYf`g]bX`]a`J`Yf_Y`f`c`Zh`VYgc`bXYfg`j`Yf`Y`h`V`U`f`ž`XU`g]Y
k`Yb][`Yf`GW`i`h`ni`[`Yb]Y»Yb`U`g`5i`hcZU`fYf`"8Yf`*(`!`Å`f][`Y
F`UXZU`fYf`ž`XYf`a`]h`gY]bYa`i: U`ffUX`i`bhYfk`Y[`g`k`Ufž`_U`h`Y`XUg
DYW`ž`XUgg`XYf`D`_k`X]fY`_h]c`f`]a`X]Y`i: U`fVU`b`k`YW`gY`hY`ž`k`Ug
]`b`ni`Y]bYf`J`c`V`fYa`gi`b[`nk`Ub[`"Gc`W`Y`G]h`i`U]cbYb`g]bX`Y]XYf
_Å`i`Z][`i`bX`c`Zh`a`]h`gW`k`YfYb`J`Yf`Y`h`i`b[`Yb`j`YfVi`bXYb"

J`Yf_Y`f`fgg]W`Yf`Y]hga`U»`bU`a`Yb

I`a`i`bZ`Å`Y`k`]Y`X]YgYb`ni`j`Yfa`Y]XYbž`gY`h`Yb`j`]Y`Y`Gh`Å`X`hY
A`U»`bU`a`Yb`ni`f`J`YfVYggYfi`b[`XYf`J`Yf_Y`f`fgg]W`Yf`Y]h`i`a`"8`Uni
nÅ`_Yb`i`bhYf`UbXYfYa`X]Y`»ghU`_U]cb`j`cb`i: U`ffUX`k`Y[`Ybž
;`YgW`k`]bX][`_Y]hg`_cb`hfc`_Yb`i`bX`5i`Z`_`Å`fi`b[`g`_Ua`dU[`bYb`ØVYf
g]W`YfYg`i: U`fYb`"»UggY`_U`h`Y`VYbZU`g]b`XYb`Y`h`hYb`»_Y`fYb`XUfUb
[`YUfVY]hYhž`X]Y`G]W`Yf`Y]h`ZØf`i`»[`Å`b[`Yf`i`bX`F`UXZU`fYf`ni
Yf`_Ø`Yb`"8`Ug`GhUXha`UbU[`Ya`Yb`h`j`c`b`?`UggY`_U`h`nU`fY]W`Y
»h]U]h]Yb`ni`f`i: ØfXYfi`b[`XYg`F`UXj`Yf_Y`f`gi`bX`ni`f`"

G Y b g] V]] g] Y f i b [' X Y f ' 5 i h c Z U \ f Y f '] b g ' @ Y V Y b ' [Y f i Z Y b "

N i X Y a ' k] f X ' U i Z X] Y ' 6 Y X Y i h i b [' j c b ' G W i ' i b [Y b ' i b X
J Y f _ Y \ f g Y f n] Y \ i b [' \] b [Y k] Y g Y b ž i a ' X U g ' 6 Y k i g g h g Y] b ' Z Ø f ' X] Y
J i ' b Y f U V]] h Ā h j c b ' F U X Z U \ f Y f b '] a ' G h f U » Y b j Y f _ Y \ f ' n i ' g W Ā f Z Y b "
G c ' W X Y ' A U » b U \ a Y b ' _ Ø b b h Y b ' \ Y ' Z Y b ž ' X] Y ' N U \ ' ' X Y f ' i b Z Ā ' ' Y ' n i
f Y X i n] Y f Y b ' i b X ' X U g ' G] W X Y f \ Y] h g [Y Z Ø \ ' ' X Y f ' F U X Z U \ f Y f ' n i ' Y f \ Ø \ Y b "

F Y ' Y j U b h Y ' G h U h] g h] _ Y b ' n i a ' H \ Y a U

J Y f _ Y \ f g i b Z Ā ' ' Y

8] Y ' 8 Y i h g W X Y ' J Y f _ Y \ f g k U W X h ' \ U h] b '] \ f Y a ' \ J \ f Y g V Y f] W X h i & \$ & '
\ Y f j c f [Y f i Z Y b ž ' X U g g ' X] Y ' N U \ ' ' X Y f ' J Y f _ Y \ f g i b Z Ā ' ' Y ' a] h
D Y f g c b Y b g W Ā X Y b '] a ' J Y f [' Y] W X ' n i a ' J c f ' U \ f ' U b g h] Y ["
= b g V Y g c b X Y f Y ' i b Z Ā ' ' Y ž ' U b ' X Y b Y b ' : U \ f f Ā X Y f ' V Y h Y]] [h i g] b X ž ' n Y]] [Y b
Y] b Y b ' V Y g c f [b] g Y f f Y [Y b X Y b ' H f Y b X " ' = a ' \ J \ f ' & \$ & & ' k i f X Y b '] b
8 Y i h g W X ' U b X ' Ø V Y f ' , \$ " \$ \$ \$ ' : U \ f f U X i b Z Ā ' ' Y ' f Y [] g h f] Y f h ž j c b ' X Y b Y b
Z U g h i &) " \$ \$ \$ ' a] h i D Y f g c b Y b g W Ā X Y b ' Y b X Y h Y b "

8] Y ' G h U h] g h] _ n Y] [h ž ' X U g g ' X] Y ' i b Z Ā ' ' Y ' \ Ā i Z] [' U i Z i b U i Z a Y f _ g U a Y
: U \ f k Y] g Y ' g c k c \ ' j c b ' 5 i h c Z U \ f Y f b ' U ' g ' U i W X ' j c b ' F U X Z U \ f Y f b
n i f Ø W _ n i Z Ø \ f Y b ' g] b X " ' 9] b Y ' Ā \ b '] W X Y ' G] h i U h] c b ' k] Y '] b ' ? U g g Y '
_ Ø b b h Y ' g] W X ' U i W X '] b ' U b X Y f Y b ' G h Ā X h Y b ' Y f Y] [b Y b ž ' k U g ' X] Y
B c h k Y b X] [_ Y] h j c b ' j Y f g h Ā f _ h Y b ' 5 i Z _ Ā f i b [g a U » b U \ a Y b
i b h Y f g h f Y] W X h " 8] Y ' 8 Y i h g W X Y ' J Y f _ Y \ f g k U W X h ' U f V Y] h Y h
_ c b h] b i] Y f '] W X ' U b ' G h f U h Y [] Y b ' n i f ' J Y f V Y g g Y f i b [' X Y f
J Y f _ Y \ f g g] W X Y f \ Y] h "

8 Y h U] ^ g

6 Y g i W X Y b ' G] Y ' i b g ' U i Z . ' X] Y ! b U W X f] W X h Y b " b Y h