

9b hXYW_Yb`G]Y`9VYfbg` \]ghc f]gW\ Y GW\ ÀhnY. `F Uh\ Ui gž`GmbU[c [Y`i bX`a Y\ f°

9f`YVYb`G]Y`Ua`8Yb_a U`!HU[`]b`< UggVYf[Y` \]ghc f]gW\ Y
: Ø\fi b[Ybž`?i bghi bX`gdUbbYbXY` ; YgW\]W\ hYb` `]XYU`ZØf
X]Y`[Ubny` : Ua`]]Y°

≠`9VYfbž`Y]bYf`GhUXh`j]b`XYf`FY[]cb`< UggVYf[Yž`k`]fX`Y]b
VYgcbXYfYg`9fY][b]g[YZY]Yfh`XYf`8Yb_a U`!HU[""8]YgYf`HU[`n]Y\h
b]W\ h`bi f` ; YgW\]W\ hg]bhYfYgg]YfhY`Ubž`gc bXYfb`V]YhYh`Y]bY
gdUbbYbXY`A Ò[`]W\ _Y]hž` \]ghc f]gW\ Y`Gh`hYb`ni`Yf`_i bXYb`i bX`X]Y
; YgW\]W\ hYbž`X]Y` \]bhYf` \]bYb`ghYW_Ybž`ni`YfZU`fYb`"5b`X]YgYa
HU[`ÒZbYb`j YfgW\]YXYbY` \]ghc f]gW\ Y` ; YV`Ai XY` \]fY`HØfYb`i bX
`UXYb`X]Y`6Ygi W\ Yf`Y]bž`a Y\ f`ØVYf`X]Y`5fW\]hY`_hi fž`X]Y
J Yf[Ub[Yb\Y]h`i bX`X]Y`A YbgW\ Ybž`X]Y`Xcfh`YVhYbž`ni`"YfbYb"

8 Ug`F Uh\ Ui g`]b`9VYfbž`VY`_Ubbh`ZØf`gY]bY`W\ UfU`_hYf]gh]gW\ Yb
6Ui gh]Yž`V]YhYh`j cb`%`"\$`\$`V]g`%&`"\$`\$`I` \ f`Y]bY` : Ø\fi b[`Ub`"
≠hYfYgg]YfhY`g]bX`Y]b[Y`UXYbž`g]W\ `VYfY]hg`i a` `%%`I` \ f`j`cf`XYa
F Uh\ Ui g`ni`j YfgUa` a`Y`b`"8]Y`?fY]g\Y]a UhdZY[Yf]b`7\ f]gh]UbY
HUb[Yfa`Ubb`i bX`6YfbX`9VYfh`j cb`XYf`Hci f]gh]bZcfa`Uh]cb`ghY`Yb
ni f`J YfZØ[i b[ž`i`a` : fU[Yb`ni`VYUbhk`cfhYb`"8]Yg`]gh`b]W\ h`bi f`ZØf
9fk UW\ gYbY`gdUbbYbX`/Ui W\ `?`]bXYf`g]bX` \]Yfn`]W\ `Y]b[Y`UXYbž`Ub
X]YgYa`]bZcfa`Uh]j Yb`9f`YVb]g`hY]`ni bY`a`Yb"

9f`_i bXi b[`XYf`ØX]gW\ Yb` ; YgW\]W\ hY

9]b`k`Y]hYfYf`VYXYi hYbXYf`C fhž`XYf`Ua`8Yb_a U`!HU[`[YÒZbYh`]ghž
]gh`X]Y`Y\Ya`U`][Y`GmbU[c [Y`]b` ; `Yi`gXcfZ`<]Yf`YfbYb`X]Y
6Ygi W\ Yf`b]W\ h`bi f`X]Y`c`_U`Yž`gc bXYfb`Ui W\ `X]Y`ØX]gW\ Y
; YgW\]W\ hY`XYf`FY[]cb`_YbbYb`"8 Ug`≠ZcnYbhfi a`ÒZbYh`gY]bY
HØfYb`j cb`%`"\$`\$`V]g`%+`"\$`\$`I` \ f`i bX`V]YhYh`Y]b

UVk YW\g'i b[gfY]W\Yg'6Y[`Y]hdfc[fUa a "9]bY`VYgcbXYfY
: Ø\fi b[žX]Y'i a `%" "\$\$`I \f'ghUfhYhž`VYgW\ÅZh][h'g]W\`a]h`XYa
Ni gUa a Yb`YVYb`j cb`7\f]ghYb`i bX`ž XYb`j]b` ; `Yi gXcfZ`8]Yg`]gh
Y]bY`k Yfhj c`Y` ; Y`Y[Yb\Y]hž`X]Y`j]Y`gW\]W\h][Yb` ; YgW\]W\hYb
X]YgYf` ; Ya Y]bgW\UZhYb`VYggYf`ni`j YfghY\Yb`"

8]Y`HY]`bY\`a Yf`_ØbbYb`ni XYa `VY]`Y]bYf`9f`_i bXi b[ghci f`a]h
Gi W\V]`XYfb`X]Y`j YfgW\]YXYbYb`Bi hni b[gYdcW\Yb`XYf`GmbU[c[Y
YbhXYW_Yb`8]YgY`U_hj] YfYbXY`A Yh\cXY`a UW\h` ; YgW\]W\hY
[fY]ZVUf`i bX`Yf`YVVUfž`k Ug`VYgcbXYfg`ZØf`?]bXYf`i bX` : Ua]`Yb
UbgdfYW\YbX`]gh`"

⇒ < U» ž fh`k]fX`X]Y`F]hYf`_UdY`Y`YVYbZU`g`]a `FU\`a Yb`XYg
8Yb`_a U!HU[Yg`dfÅgYbh]Yfh`G]Y`]gh`Y]b`k Y]hYfYg`\]ghcf]gW\Yg
<][\`][\hž`XUg`nk]gW\Yb`%\$`\$`i bX`% , "\$\$`I \f`ZØf`6Ygi W\Yf
[YØZbYh`]gh`"I a`% ("\$\$`I \f`[]Vh`Yg`Y]bY`[YZØ\fhY`Hci f`Xi fW\`X]Y
?UdY`Y`i bX`XUg`8c`_i a YbhUh]cbgnYbhfi a "`8Ug`\]ghcf]gW\Y
 ; YVÅi XY`nYi [hj cb`XYf`fY]W\Yb` ; YgW\]W\hY`i bX`XYb`j]Y`ZÅ`h][Yb
6Ui gh]`Yb`XYf`F Y []cb`"K Yf`Ub`X]YgYf`]bhYfYggUbhYb` : Ø\fi b[
hY]`b]a a hž`_Ubb`g]W\`Ui ZgdUbbYbXY`9]bV`]W_Y`]b`X]Y` ; YgW\]W\hY
i bX`5fW\]hY`_hi f`ZfYi Yb`"

? i `hi fY`Y`9]bV`]W_Y`]b`X]Y
⇒ bXi ghf]Y[YgW\]W\hY

8]Y`GmbU[c[Y`]b`A Ya a Y`gXcfZ`X]fY`_h`]b`XYf`ž XYb[UggY`*
[Y`Y[Ybž`V]YhYh`XYb`6Ygi W\Yfb`k Å\fybX`XYg`8Yb`_a U!HU[Yg`j cb
%\$`\$`V]g`%+"\$\$`I \f`X]Y`A Ø[`]W\`_Y]hž`X]Y`ZUgn]b]YfYbXY`K Y`h`XYf
6]b[!9]gYbVU\`bYb`ni `YbhXYW_Yb`"I bhYf`XYf`@Y]hi b[`j cb`8f`
A Ufh]b`6cgg`k]fX`Y]bY`\]ghcf]gW\Y`6`YW\!9]gYbVU\`b`Ui g[YghY`hž
X]Y`]b`BØfbVYf[žY]bYa `NYbhfi a `XYf`Gd]Y`nYi []bXi ghf]Y`k Å\fybX
XYf`]bXi ghf]Y`Yb`F Yj c`i h]cbž`\Yf[YghY`h`k i fXY`"8]YgY`[fc» Ufh][Y
9l dcg]h]cb`V]YhYh`b]W\h`bi f`Y]bYb`6`]W`_Ui Z`X]Y`hYW\]b]gW\Yb
9ffi b[YbgW\UZhYb`XYf`XUa U`][Yb`NY]hž`gcbXYfb`Ui W\`Ui Z`X]Y
@YVYbg[YgW\]W\hYb`XYf`ØX]gW\Yb`I bhYfbY\`a Yf`i bX`XYfYb
<YfUi gZcfXYfi b[Yb`]b`Y]bYf`NY]h`XYg`k UW\gYbXYb
5bh]gYa]h]ga i gi bX`XYf`J YfZc`[i b["

Jcb`%\$`V]g`%&`i` \f`gck`]Y`j` cb`%(` `V]g`%+`i` \f`ghY`h`8f`"6cgg`XYb`
6Ygi` WXYfb`ZØf` : fU[` Yb`ni` f`J`YfZØ[` i` b[` "8]YgY`]bhYfU`_h]j` Y`
?ca` dcbYbhY`j` YfV]bXYh`X]Y`J`Yf[` Ub[` Yb`Y]h`a`]h`XYf` ; Y[` Ybk` Ufh`
i` bX`Yfa` Ò[`]W`h`Yg`XYb`HY`]b`Y`a` Yfb`ž`Y]b`h]YZYfYg`J`Yfgh`Ab`Xb]g`ZØf`
X]Y`F`Y[`]cb`i` bX`XYfYb` ; YgW`]W`hY`ni` `Yb`hk`]W`_Y`b`"

8]Y`j` YfgW`]YXYbYb`J`YfUbghU`hi` b[` Yb`g]bX`b]W`h`bi` f`Y`ffY]W`ž`
gcbXYfb`ZØfXYfb`Ui` W`X`Ug`6Yk`i` gghgY]b`ZØf`X`Ug`_i` hi` fY`Y`9fVY`
i` bX`X]Y`J`]Y`ZU`h`XYf` ; YgW`]W`hY`]b`XYf`F`Y[`]cb`9VYfb`i` bX`
I`a` [` YVi` b[` "A`]h` : Ø`fi` b[` Yb`ž`5i` gghY`i` b[` Yb`i` bX`]bhYfU`_h]j` Yb`
Dfc[` fUa` a` Yb`k`]fX`XYf`8Yb`_a` U`!HU[` ni` `Y]bYa` `9f`YVb]gž`X`Ug`X]Y`
HfUX]h]cb`i` bX`X]Y` ; YgW`]W`hYb`XYf`J`Yf[` Ub[` Yb`Y]h`YVYbX][` `Ä`h`"

8]Y`6YXYi` hi` b[` `XYg`8Yb`_a` U`!HU[` g`

8Yf`8Yb`_a` U`!HU[` `]gh`a` Y`f`U`g`bi` f`Y]bY`Y]ba` U`][` Y`J`YfUbghU`hi` b[` "
9f`V]YhYh`Y]bY`D`U`h`Zc`fa` ž`i` a` ` `]ghc`f]gW`Yg`K`]ggYb`ni` `VYk` U`fYb`
i` bX`Y]bY`J`YfV]bXi` b[` ni` f`J`Yf[` Ub[` Yb`Y]h`Y`fni` ghY`Yb`" `b`NY]hYb`ž`
]b`XYbYb` ; YgW`]W`hY`c`Zi`]b`XYb`<]bhYf[` fi` bX`[` Yf`Ä`hž`Yf]bbYfh`X]YgYf`
HU[` i` bg`X`UfUb`ž`k`]Y`k`]W`h] [` `Yg`]ghž`X]Y`9fn`Ä`i` b[` Yb`i` bX`
9f]bbYfi` b[` Yb`XYf`A` YbgW`Yb`ni` `k` ØfX][` Yb`ž`X]Y`j` cf`i` bg`[` Y`YVh`
`UVYb`" `b`XYa` `k`]f`i` bg`a`]h`]\`fYf` ; YgW`]W`hY`Ui` gY]bUbXYfgYhnYb`ž`
hfU[` Yb`k`]f`X`Uni` `VY]ž`X`Ugg`]\`fY`6c`hgW`U`Z`hYb`b]W`h`j]b`
J`Yf[` YggYb`Y]h`[` YfU`hYb`"

8]YgY`J`YfUbghU`hi` b[` Yb`g]bX`NY]W`Yb`XUZØfž`X`Ugg`Ui` W` `Y]bY`
Gh`X`hY`k`]Y`9VYfb`]\`fYb`D`U`h`ni`]b`XYf` ; YgW`]W`hggW`fY]Vi` b[` `UVYb`
i` bX`Xi` fW`gc`W`Y`5b`ÄggY`X]Y` ; Ya` Y]bgW`U`Z`h`gh`Ä`_Yb`"Gc`]gh`XYf`
8Yb`_a` U`!HU[` `b]W`h`bi` f`Y]bY` ; Y`Y[` Yb`Y]hž` ; YV`Äi` XY`ni`
VYg]W`h][` Yb`ž`gcbXYfb`Ui` W`X]Y` ; YgW`]W`hYb`ž`X]Y`g]Y`Yfn`Ä`Yb`ž`ni`
k` ØfX][` Yb`i` bX`ni` `VYk` U`fYb`"

<]ghc`f]gW`Y`6YXYi` hi` b[` `XYf`F`Y[`]cb`

9VYfb`i` bX`X]Y`i` a` `]Y[` YbXYb` ; Ya` Y]bXYb`UVYb`Y]bY`fY]W`Y`i` bX`
j`]Y`Z`Ä`h][` Y` ; YgW`]W`hY`ž`X]Y`Yb[` `a`]h`XYf`9b`hk`]W`_i` b[` `XYf`F`Y[`]cb`
: fUb`_Yb`j` YfVi` bXYb`]gh`8]Y`GhUX`h`9VYfb`k`i` fXY`%&*(` `Yfgha` U`g`
i` f_i` bX`]W`Y`fk` Ä`b`hi` bX`U`h`gY]h`XYa` `Y]bY`k`]W`h][` Y`F`c`Y`U`g`

< UbXY`g!`i bX`< UbXk Yf_gnYbhfi a` [Ygd]Y`h" `Δf` \]ghcf]gWk Yg
F Uh\Ui g`]gh`Y]b`VYa Yf_Ybgk YfhYg`6Y]gd]Y`ZØf`X]Y` [ch]gWk Y
5fWk]hY`_hi f`XYf`FY []cb`i bX`gd]Y [Y`h`X]Y`k]fhgWk UZh]Wk Yb`i bX
dc`]h]gWk Yb`i a k`À`ni b [Yb`k]XYfž`X]Y`X]Y`GhUXh`]a` `A]hhY`U`hyf
Yf`YVhY`"

8 Ug`6Ui k Yf`_` \ Uh`b]Wk h`bi f`X]YbhY`XYf`J Yfk U`hi b [ž`gcbXYfb`Ui Wk
U`g`C fh`ZØf`A`Àf`_hY`i bX`J YfgUa a` `i b [Ybž`k Ug`Yg`ni a` gcn]U`Yb
NYbhfi a` `9VYfbg`a UWk hY`" < Yi hY`k]fX`XUg`F Uh\Ui g`Xi fWk
: Ø\fi b [Yb`i bX`J YfUbghU`hi b [Yb`ZØf`9]b` \ Y]a`]gWk Y`i bX`Hci f]ghYb
[`Y]Wk Yfa U» Yb` `YVYbX][` [Y` \ U`hYb`" 8 Yf`9f` \ U`h`gc`Wk ` \]ghcf]gWk Yf
C fhY`]gh`j cb`nYbhfU`Yf`6YXYi hi b [`ZØf`XUg`_i` `hi fY` `Y`9fVY`i bX`X]Y
=XYbh]h`h`XYf` ; Ya Y]bgWk UZh`"

>ØX]gWk Yg`9fVY`i bX`5fWk]hY`_hc b]gWk Y J]Y`ZU`h

8]Y`Y`Ya U`][Y`GmbU [c [Y`]b` ; `Yi gXcfZ`i bX`X]Y`GmbU [c [Y`]b
A Ya a Y`gXcfZ`ghY` `Yb`VYXYi hYbXY`NYi [b]ggY`XYg`ØX]gWk Yb
@YVYbg`]b`XYf`FY []cb`XUf`" J cf`XYa` `Nk Y]hYb`K Y`h`_f]Y [`Yi]gh]YfhY
Y]bY`V`Ø`YbXY`ØX]gWk Y` ; Ya Y]bgWk UZh`]b`j]Y`Yb`Gh`X`hYb`i bX
8 ØfZYfb` : f`Ab`_Ybg`" 8]YgY` ; chhYg` \ Ai gYf`k UfYb`b]Wk h`bi f`fY`][]ØgYž
gcbXYfb`Ui Wk`_i` `hi fY` `Y`NYbhfYb`"

8]Y`5i gghY`i b [Yb`i bX` : Ø\fi b [Ybž`X]Y`j cb`C f [Ub]gUh]cbYb`k]Y
XYa` `Hf`À [Yf!`i bX` : ØfXYfj YfY]b`GmbU [c [Y`A Ya a Y`gXcfZ
Ub [YVchYb`k YfXYbž`hfU [Yb`XUni` `VY]ž`XUg`6Yk`i gghgY]b`ZØf`X]YgY
VYXYi hYbXYb`5gdY`_hY`XYf`fY []cbU`Yb` ; YgWk]Wk hY`ni`gWk`ÀfZYb`"
8 i fWk `X]Y`9f`_i bXi b [`XYf`J Yf [Ub [Yb` \ Y]h`k]fX`b]Wk h`bi f`XUg
_i` `hi fY` `Y`9fVY` [Yk ØfX][hž`gcbXYfb`Ui Wk`X]Y`6YXYi hi b [`j cb
Hc`YfUbn`i bX`J Yfgh`AbXb]g`nk]gWk Yb`XYb`j YfgWk]YXYbYb
; Ya Y]bgWk UZhYb` `Yfj cf [Y` \ cVYb`"

GhUh]gh]gWk Y`F Y`Yj Ubn`i bX`6Ygi Wk gnU` `Yb

5`_hi Y` `Y`GhUh]gh]_Yb`ni`6Ygi Wk YfnU` `Yb`i bX`XYf`_i` `hi fY` `Yb
HY`]bU`a Y`nY][Ybž`XUgg` \]ghcf]gWk Y`GY`Yb`gk ØfX][_Y]hYb`]b`XYf

F Y[]cb'ghUf_`ZfYei Ybh]Yfh'k YfXYb"@Ui h'Y]bYf'9f\YVi b[`XYg
6UmYf]gWXYb`GhUUhga]b]ghYf]i a g`Z0f`K]ggYbgWUZh'i bX`?i bgh
VYgi W`hYb`ja `j\`f`&\$&&0VYf`&`A]`]cbYb`A YbgWXYb`X]Y`A i gYYb
i bX`; YXYb_gh`hhYb`]b`6UmYfbž`XUfi bhYf`Ui W`j]Y`Y`Gh`hhYb`]b`XYf
F Y[]cb`9VYfb"

8]YgY`NU\`Yb`i bhYfghfY]WXYb`X]Y`6YXYi hi b[`gc`WXYf`\]ghcf]gWXYb
CfhY`b]W`h`bi f`Z0f`X]Y`c`_U`Y`K]fhgWUZhž`gcbXYfb`Ui W`Z0f`X]Y
6]`Xi b[`i bX`XUg`_i `hi fY`Y`K]ggYb`XYf`6Ygi WXYf"8]Y`HY]`bU\`a Y
Ub`: 0\fi b[Yb`i bX`X]Y`9fgW`Y»i b[`j cb`fY[]cbU`Yb`; YgW]W`hY
hfU[Yb`g][b]Z]_Ubh`ni f`: 0fXYfi b[`XYg`]bhYf`_i `hi fY`Yb`8]U`c[g
gck]Y`ni f`Gh`f`_i b[`XYg`; Ya Y]bgWUZhg[YZ0\`g`VY]"

8i fW`_cbh]bi]Yf`]WXY`Dfc[fUa a Y`i bX`J YfUbghU`hi b[Ybž`X]Y`Ui Z
Y]b`VfY]hYg`Di V`]i a `UVn]Y`Ybž`k]fX`Ub[YghfYVhž`XUg`b`hYfYggY`Ub
X]YgYb`_i `hi fY`Yb`GW`h`hYb`k Y]hYf`ni `Yf\0\Ybž`k Ug`Ub[Zf]gh][
ni f`: 0fXYfi b[`XYf`9f\U`hi b[`i bX`DZY[Y`X]YgYf`\]ghcf]gWXYb
Gh`hhYb`VY]hf`h`

8YhU]`g

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