: U\fnYi [']a ' ? UbU`'j YfgYb_h. ' ? i f]cgYf
J cfZU``']b '5dYb

9]bY`* * ! Å\ f][Y': fUi 'Ui g'5dYb'dUf_hY'i b[YgW]W_hž']\f'5i hc
fc`hY']b'XYb'? UbU`''5VgW`YddX]Ybgh'g]WYfhY`X]Y'6Yf[i b["

⊕'5dYbž'[YbUi Yf[YgU[h]a 'CfhghY]'5i [i ghZY\bž'YfY][bYhY'g]W
Ua 'A]hk cWž'XYb'&%''5i [i ghž'Y]b'_i f]cgYf'J cfZU``ž'XYf'b]W'h'bi f
X]Y'5bk c\bYf'ØVYffUgW'h'\Uhž'gcbXYfb'Ui W`Y]b'k Yb]['ZØf
GWa i bnY'b'gcf[h''l a '\$- . \$ \$'l \f'dUf_hY'Y]bY`* * ! Å\ f][Y': fUi ']\f
5i g`]YZYfi b[gZU\fnYi ['Ui ZY]bYf'< cZY]bZU\fh'XYf'GhfU»Y' 5a
' UbU`''8cW`k Ug'U'g'Y]bZUWYf'DUf_j cf[Ub['UbZ]b[ž'Ybhk]W_Y'hY
g]W`fUgW`ni 'Y]bYa '_Y]bYb'8fUa Už'XYbb'XUg'5i hc'fc`hY
i b[YVfYa gh]b'XYb'bU\Y[Y`Y[ YbYb'? UbU`''

8]YgY'G]hi Uh]cb'i bhYfghfY]W'h'X]Y'K]W'h][_Y]h]j cb
G]WYf\Y]hgj cf_Y\fi b[Yb'VY]a 'DUf_Yb''8]Y'[i hY': fUi '\UhhY']\f
: U\fnYi ['b]W'h'Ui gfY]WYbX'[Y[Yb'XUg'K Y[fc`Yb'[Yg]WYfhž'k Ug
gW`Y]»`]W`ni 'XYa 'Nk]gWYbZU``ZØ\fhY''8Yf'K U[Yb'k Uf'ni a
NY]hdi b_h'XYg'l b['ØW_g'a]h'XYa ' <YW_`ni a ' ? UbU`'Ui g[Yf]W'hYhž
i bX'Y]b'A Ub[Y`Ub'G]WYfi b[ggmghYa Yb'ZØ\fhY'XUni ž'XUgg'XUg
5i hc'fØW_k Åfhg'fc`hY'i bX'gW`Y]»`]W`]a ' ? UbU`''UbXYhY''8]Y
: U\fyf]b'k Uf'nk Uf'j Yfnk Y]ZY'h'i bX'j Yfgi W'hY'ni bÅWghž']\f'5i hc
ni 'ghcddYbž'YXcW`c\bY'9fZc`['' ; 'ØW_]WYfk Y]gY'V`]YV'g]Y
i bj Yf'Yhhi bX'_cbbhY'g]WYf'j cb'XYf'GnYbY'k Y[[Y\Yb''

8]Y'6Yf[i b[gU_h]cb

8]Y'6Yf[i b['XYg': U\fnYi [g'YfZcfXYfhY'X]Y'l bhYfghØhni b['Y]bYg
5VgW`Yddi bhYfbY\ a Ybgž'XUg'gW`bY``ni '<]ZY'Y]'hY''8]Y
bchk YbX][Yb'5fVY]hYbž'i a 'XUg': U\fnYi ['Ui g'XYa 'K UggYf'ni
\VYbž'k i fXYb'i a [Y\YbX'Y]b[Y`Y]hYh''K Å\fybX'X]YgYf

6Yf[i b[gU_h]cb'a i gghY`X]Y`Ub`Y[ YbXY`GhU\`k Yf\_ghfU» Y`ZØf`W]fWU
' \$`A ]bi hYb`[YgdYffh`k YfXYb" `Gc`W`Y`A U» bU\`a Yb`g]bX
bchk YbX][ž`i`a`X]Y`G]W`Yf\`Y]h`U`Yf`6YhY`][hYb`ni`[Yk`À`f`Y]ghYb
i bX`i`a`Y]bYb`i`b[ Y\]bXYfhYb`Ni`[ Ub[ `ZØf`X]Y`F`Yhhi`b[g_f`À`Z`hY`ni
Yfa`Ò[ `]W`Yb"

8]Y`G]W`hVuf`\_Y]h`XYg`J`cfZU`g`i`bX`X]Y`gW`bY`Y`F`YU`_h]cb`XYf
9]bgUhm_f`À`Z`hY`nY][Ybž`k`Y`k`]W`h][ `Yg`]ghž`Ui`Z`dchYbn]Y`Y` ; YZU\`fYb
]a`GhfU» Ybj`Yf`\_Y\`f`ni`U`W`hYb" `8Yf`J`cfZU` ` \_`ØbbhY`U`g`@Y\`fghØW_
ZØf`UbXYfY`5i`hcZU\`fYf`X]YbYbž`X]Y`Yj`Ybhi`Y`U`i`W`bUW`À`Agg][ `a`]h
XYf`G]W`Yfi`b[ `]\`fYf` : U\`fnYi`[Y`i`a`[ Y\`Yb" `5V[ YgY\`Yb`j`cb`XYa
A`UhYf]U`gW`UXYb`]gh`X]Y` : fU[Y`XYf` : U\`fg]W`Yf\`Y]h`i`bX`XYf
J`YfUbhk`cfhi`b[ `Y`XYg` : U\`fYfg`Y]b`k`]W`h][ Yg`H\`Ya`Už`XUg`b]W`h
][bcf]Yfh`k`YfXYb`gc`hY"

K Ug`VYXYi hYh`X]YgYf`J`cfZU`3

C`V`k`c`\`gc`W`Y`Nk`]gW`YbZ`À`Y`]a`5`hU[ `b]W`h`U`ni` \`À`i`Z][
j`cf`_`ca`a`Ybž`k`YfZYb`g]Y`Y]b`@]W`h`Ui`Z`U`h`À[`]W`Y`ZU\`fYf]gW`Y
 : Y\`Yfž`X]Y`ZU`hU`Y` : c`[ Yb`\`UVYb`_`ØbbYb" `DUf`\_Yb`a`U[ `Ui`Z`XYb
YfghYb`6`]W`\_g]a`dY`YfgW`Y]bYbž`XcW`j`ca`f]W`h][ Yb`5VghY`Yb`XYg
 : U\`fnYi`[g`V]g`ni`f`?`cbhfc`Y`Ui`Z`a`Ò[`]W`Y` ; YZU\`fYb`5i`hcZU\`fYf
hfU[Yb`Y]bY`[fc» Y`J`YfUbhk`cfhi`b[" `8Ug`6Y]gd]Y`U`i`g`5dYb`nY][hž
XUgg`Y]b`A`ca`Yb`h`XYf`i`b`Ui`Z`a`Yf`\_`gUa`\_Y]h`b]W`h`bi`f`ni`Y]bYa
 : U\`fnYi`[j`Yf`i`gh`ZØ\`fYb`_`Ubbž`gcbXYfb`Ui`W`a`Ò[`]W`Y`fk`Y]gY
UbXYfY`[ YZ`À\`fXYb`_`ØbbhY" `i`b`_`cbhfc`Y]fh`fc`YbXY`5i`hcg`\_`ØbbYb
b]W`h`bi`f`g]W`gY`Vghž`gcbXYfb`Ui`W`UbXYfY`J`Yf`\_Y\`fghY]`bY\`a`Yf
]b`[ YZ`À\`f]W`Y`G]hi`Uh]cbYb`Vf]b[Yb"

6Y]`XYfUfh][ Yb`J`cfZ`À`Yb`]gh`Yg`Yb`hgW`Y]XYbXž`gW`bY`ni` \`UbXY`b
i`bX`X]Y`f]W`h][Yb`A`U» bU\`a`Yb`ni`Yf[fY]ZYb" `b`X]YgYa` : U`
_`ØbbhY`a`Ub`gU[Ybž`XUgg`X]Y`gW`bY`Y`F`YU`_h]cb`Ui`Z`X]Y
F`ØW`_fc`g]hi`Uh]cb`XUg`G`W`]a`a`ghY`j`Yf\]bXYfhYž`i`bX`Yg]gh
YfZYfi`]W`ni` \`ØfYbž`XUgg`X]Y` : U\`fYf]b`k`c`\`Ui`Z`V`]YV" `8]Y
 ; YgW`]W`hY`Yf]bbYfhi`bg`XUfUbž]a`5`hU[ `ghYhg`k`UW`gUa`ni`gY]b
i`bX`G]W`Yf\`Y]h`Ub`YfghY`GhY`Y`ni`gY`hnYb"

Ni`gUa`a`YbZUggYbX`À`Aggh`g]W`gU[ Ybž`XUgg`Yg]a`GhfU» Ybj`Yf`_Y\`f

i a `k Y]h'a Y\ f'[ Y\ h'U`g'bi f': U\ f_ØbghY"9g`VYXUfZ`Y]bYf
gh`ÅbX][ Yb`5W`hgUa`_Y]h`i]b`6Yni [`Ui Z`X]Y`G]W`Yf\`Y]h`i`gck`c\`
Y][YbY`U`g`Ui`W`X]Y`XYf`UbXYfYb"9]b`Y]bZUW`Yg`DUf`\_Yb`_Ubbž
k`Ybb`Yg`b]W`h`i[ Yk`]ggYb\`UZh`i[Ya`UW`h`k`]fXž`gW`bY``ni`Y]bYa
i`bYfZ`fYi`]W`Yb`9fY][ b]g`ZØ\`fYb"8Ua`]h`gc``hY`YXYf': U\ fYf`]a
<]bhYf`\_cdZVY\`U`hYbž`XUgg`X]Y`J`YfU`bhk`cfhi`b[`ZØf`X]Y`G]W`Yf\`Y]h
b]W`h`iYbXYhž`gcVU`X`XUg`5i`hc`UV[YghY``h]gh"

I fgUW`Yb`ZØf': U\ fnYi [i bZÅ``Y`]b`Å\`b`]W`Yb
G]hi`Uh]cbYb

I bZÅ``Y`k`]Y`XYf`]b`5dYb`g]bX`b]W`h`i]gc`]Yfhž`gcbXYfb`nY][Yb`Y]b
k`]YXYf`_Y\`fYbXYg`A`i`ghYfž`XUg`]b`j`YfgW`]YXYbYb`?`cbhYi`hYb
VYcVUW`hYh`k`YfXYb`_Ubb" `C`Zh]g]bX`a`Ub[Y`\`UZhY`G]W`Yfi`b[Yb
YbhgW`Y]XYbXž`X]Y`XUni`ZØ\`fYbž`XUgg': U\ fnYi [Y`i`b`_cbhfc``]Yfh
fc``Yb"8]Yg`\_Ubb`Ui`Zj`YfgW`]YXYbY': U`_hcfYb`ni`fØW`\_[ YZØ\`fh
k`YfXYbž`k`]Y`ni`a`6Y]gd]Y`i`bni`fY]W`YbXYg`DUf`_Yb`Ui`Z
UVgW`Øgg][ Yb':`ÅW`Yb`cXYf`X]Y`J`Yfk`YbXi`b[ `j`cb`b]W`h`icdh]a`U`Yb
DUf`\_hYW`b]_Yb"

8]Y`GhfU»`Ybj`Yf`_Y\`fgcfXbi`b[`g]Y\`h`VYgcbXYfY
J`cfg]W`hga`U»`bU\`a`Yb`j`cfž`]bgVYgcbXYfY`VY]a`DUf`_Yb`j`cb
: U\ fnYi [Yb`]b`XYf`BÅ\`Y`j`cb`;`Yk`ÅggYfb"i`ϕ`8Yi`hgW`\`UbX`g]bX
: U\ fYf`j`YfdZ]W`hYhž`VY]a`DUf`_Yb`Ui`Z[YbY][hYb`cXYf`i`bYVYbYb
: `ÅW`Yb`X]Y`<`UbXVfYa`gY`Ubni`n]Y\`Yb`i`bX`[Y[YVYbYbZU`g`XYb
;`Ub[ `Y]bni`Y[ Yb`cXYf`?`Ya`a`_Y]Y`ni`j`Yfk`YbXYb"

G]W`Yf\`Y]hga`U»`bU\`a`Yb`i`bX`DfÅ]Yb]cb

I a`XYfUfh][ Y`J`cfZÅ``Y`ni`j`Yf\]bXYfbž`[]Vh`Yg`nU\`fY]W`Y
G]W`Yf\`Y]hgj`cf`_Y\`fi`b[Ybž`X]Y`gck`c\`j`cb': U\ fnYi [ \`U`hYfb`U`g
Ui`W`j`cb`XYb`ni`gh`ÅbX][ Yb`6Y\`ØfXYb`VYUW`hYh`k`YfXYb`gc``hYb"
5i`hca`cV]Y`k`YfXYb`\`Yi`hni`hU[Y`a`]hj`YfgW`]YXYbYb`HYW`bc`c[]Yb
Ui`g[ YghUhhYhž`X]Y`XUg`K`Y[fc``Yb`j`Yf\]bXYfb`\_ØbbYbž`k`]Y`Yhk`U
Y`Y`_hfc]gW`Y`<`UbXVfYa`gYb`cXYf`DUf`\_Ugg]ghYb`hYb"

Ni`gÅhn`]W`k`]fX`Ya`dZc\`Ybž`gdYn]Y``Y': U\ fhfU]b]b[g`Ubni`V]YhYbž

X]Y`b]W h`bi f`Y]bYb`j YfUbhk cfhi b[gj c`Yb`l a [Ub[`a ]h`XYa
: U\fnYi [`Z`fXYfbž`gcbXYfb`Ui W`X]Y`6YXYi hi b[`g]WYfYf
Duf_hYWb]_Yb`VYhcbYb"6Y]`XYf`l bZU`Ui ZbU`a Y`gc`hY`]a a Yf
Ui W`Y]bY`6Yi fhY]i b[`XYg`Duf_j Yf\U`hYbg`ghUhhZ]bXYb"8]Yg`]gh
k]W`h][ ži a `a Ò[`]W`Y: Y`Yfei Y`Yb`ni `]XYbh]Z]n]YfYb`i bX
ni _ØbZh][Y`l bZ`Y`ni `j Yfa Y]XYb"

GhUh]gh]gW`Y`9f`YVi b[ Yb`ni `l bZ`Y`b`Xi fW`
K`Y[ fc`Yb

@Ui h`Y]bYf`Ghi X]Y`XYg`8Yi hgW`Yb`J Yf_Y`f`gg]W`Yf`Y]hgfUhg`fB`J`F`
YbhZU`Yb`A`f`]W`a Y`fYfY`HUi gYbX`l bZ`Y`Ui Z`J`cfZ`Y`ž`X]Y
Xi fW`i bni fY]W`YbXY`G]W`Yfi b[Yb`j cb: U\fnYi [ Yb`Yb`ghY`Yb"
8]YgY`l bZ`Y`Z`fYb`b]W`h`bi f`ni `DYfgcbYb!`i bX`GUW`gW`AXYbž
gcbXYfb`VY`UghYb`Ui W`X]Y`F`Yhi b[gX]YbghY`i bX`X]Y
_ca`a`i`bU`Yb`F`Yggci`fW`b"

⇒ a `X`f`&\$&&`fY[]ghf]YfhY`X]Y`8`J`F`ž`X`Ugg`Z`Ugh`+`i` `XYf
l bZU`a Y`Xi b[Yb`a ]h`a]ggVf`Ai W`]W` [ Yg]W`Yf`hYb`i: U\fnYi [Yb
cXYf`a ]h`k Y[fc`YbXYb`i: U\fnYi [Yb`ni gUa`a`Yb`\]b[Yb"8]YgY
NU\`Yb`j YfXYi h]W`Yb`X]Y`B`chk`YbX][ \_Y]h`XYg`VYk`i`gghYb
l a [Ub[`g`a]h`Duf\_hYWb]\_Yb`i bX`XUg`D`chYbn]U`XYf`ÖZYbh]W`Yb
5i Z`Àfi b[ `i bX`GW`i `i b[ Yb"8Yf`Ni gUa`a`Yb`\Ub[ `nk]gW`Yb
i bni fY]W`YbXYa`K` ]ggYb`ØVYf: U\fnYi [hYWb]_`i bX`XYf
Ni bU`a Y`gc`W`Yf`J`cfZ`Y`]gh`gca`]h`Yj ]XYbh"K`Y]hYfY
⇒ Zcfa`Uh]cbYb`_ØbbYb`Ui Z`XYf`K`YVgY]hY`XYg`8Yi`hgW`Yb
J`Yf`_Y`f`gg]W`Yf`Y]hgfUhg`bUW` [Y`YgYb`k`YfXYb"

8YhU]`g

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