

5 XfYbU`]b`i bX`GdU» .`8]Y`Ui ZfY[YbXghYb
: U\ f[YgW\ ÀZhY`]a` : fY]nY]h`Ub X
; Y]gY`k]b X

9bhXYW_Yb`G]Y`X]Y`ZØbZ`Ui ZfY[YbXghYb` : U\ f[YgW\ ÀZhY`]a
: fY]nY]h`Ub X` ; Y]gY`k]bXž`X]Y`YW\ hYb`B Yfj Yb_]hnY`
j YfgdfYW\ Yb`°

⇒ a` : fY]nY]h`Ub X` ; Y]gY`k]b X` [Yb]Y» Yb`nU\`fY]W\ Y`6Ygi W\ Yf`X]Y
J]Y`ZU`h`XYf`Ub [YVchYbYb` : U\ f[YgW\ ÀZhY`"8]Y`6Ygi W\ Yf]bbYb`i bX
6Ygi W\ Yf`g]bX` [Ub`n`i bhYfgW\]YX`]W\ Y`5W\ hYfVU\`b!9bh`i g]UghYbž
X]Y`j cb`B Yfj Yb_]hnY`i bX`GdU» `Ub`XYb`5hhfU_h]cbYb`Ub [Ync [Yb
k YfXYb`"DUf`_Y]hYf`A Uhh`]Ug`A Ò`hYf`ghY`h`ZYghž`XUgg`X]Y`5bgdfØW\ Y
XYf`; ÀghY`b]W\ h`bi f`ghY][Ybž`gcbXYfb`Ui W\`j]Y`_fYUh]j Yf`k YfXYb`"
6YgcbXYfg`X]Y`ž [YbX`]W\ Yb`\UVYb`Y]bY`J cf`]YVY`ZØf`5W]cb`"5VYf
Ui W\`?]bXYf`a ÒW\ hYb`]a a Yf`ÒZhYf`X]Y`Ui ZfY[YbXYb
: U\ f[YgW\ ÀZhY`Ui gdfcV]YfYbž`k À\ fYbX`9`hYfb`cZha U`g`VYfY]hk`j`][
ni gY\Yb`i bX` : chc`g`ZØf`]\fY`gc`n]U`Yb`A YX]Yb`a UW\ Yb`"

⇒ g[YgUa h`V]YhYh`XUg` : fY]nY]h`Ub X` ; Y]gY`k]b X`fi bX`%\$\$
5hhfU_h]cbYbž`XUfi bhYf`Yhk U`) \$` : U\ f[YgW\ ÀZhY`"8 UVY]` []Vh`Yg`ZØf
YXYb` ; YgW\ a UW`_Yhk Ugž`cV`Yg`bi b`X]Y`fi \][Yb` : U\ fhYb`ZØf`X]Y
: Ua`j]Yb`g]bX`cXYf`X]Y`UXfYbU`]b [Y`UXYbYb`5hhfU_h]cbYb`ZØf`X]Y
A i h][Yb`"⇒ X]YgYa`5fh]_Y`k YfZYb`k]f`Y]bYb`6`]W`_Ui Z`X]Y`ZØbZ
Ui ZfY[YbXghYb` : U\ f[YgW\ ÀZhY`žVY]`XYbYb`X]Y` : U\ f[ÀghY
[UfUbh]Yfh`]bg`GhUi bYb`[YfUhYb`i bX`"Ui h`gW\ fY]Yb`k YfXYb`"

8]Y`Ui ZfY[YbXghYb`5hhfU_h]cbYb`ZØf
5 XfYbU`]b`i b [f][Y

Ni`6Y []bb`XYf`@ghY`ghY`h`X]Y`K`j`Xk UggYfVU\`b`D]fUhYbZi ggž`X]Y
X]Y` : U\ f[ÀghY`]b`Y]bYa`K U [[cb`Ui ggY\YbXYb`6Ui a ghJa`a`Ui Z

Y]bY'gdf]hn][Y'FY]gY'a]hb]a a h'<]Yf[Y\h'Yg'Xi fW\Yb[Y'?i fj Yb
i bX'ØVYf'XfY]'UVYbhYi Yf]'WY'GW\i ggZU\fhYbžX]Y'V]g'ni 'nk ÒZ
A YhYf'\cW'g]bX''8]YgY'5hfhU_h]cb'gcf[h'ZØf'Y]bY'dYfZY_hY'?ca V]
Ui g'GdU»'i bX'5i ZFY[i b[žVYgcbXYfg'k Ybb'XUg'Gdf]hmk UggYf'X]Y
GW\Ui 'i gh][Yb'YffY]W'h''6Y[Y]ghYfh'Ài »Yfb'g]W\Ui W'X]Y': Ua]]Yb
<Yb]['i bX'F]Yg.' 8 Ug'a UW\h'YW\h'GdU» "A Ub'k]fX'Y]b'V]ggW\Yb
bUgg' 'UVYf'XUg']gh'Yg'k Yfh'

5i ZXYa 'j]YfhYb'D'Uhn'Z]bXYh'g]W\XYf'7cVfU'7cUghYf''8]YgY
5W\hYfVU\b'a]h]\fYf'\c\Yb': 'Y\ _fUZh'Vf]b[h'VY]'XYb': U\ f[ÀghYb
Y]b'i bj Yf[Ygg]'W\Yg'; YZØ\''j cb'; YgW\k]bX][_Y]h'i bX
BYfj Yb_]hnY''NY\b': U\ f[ÀghY'g]hnYb']b'Y]bYa 'K U[[cbž'XYf'g]Y
Xi fW\Yb[Y'?i fj Yb'i bX'ØVYf'fUgUbhY'5VZU\fhYb'n]Y\h''8Yf
VYgcbXYfY'BYfj Yb_]hnY''_ca a h'Xi fW\XUg' G]XYk]bXYf!
9'Ya Ybh žXUg'XYb'K U[[cb']b'Y]bY'Ui ZFY[YbXY'GW\fUi VY
j Yfk UbXY'h"A UfY[_Y'i bX']\f'Gc\b'œ'č'k UfYb'gc'VYY]bXfi W_hž
XUgg'g]Y'Yg'gcZcfh'bcW\Y]ba U''Yf'YVYb'k c''hYb"

D'Uhn'XfY]'Ui ZXYf'@]ghY'[Y\Øfh'XYa '?UhUdi 'h'A Yf]b''GhY''Yb'G]Y
g]W\ 'j cfž'a Ub'k]fX']b'Y]bYf'GhY]bgW\Yi XYf'gYb_fYW\h]b'X]Y'< Ò\Y
_UhUdi 'h]Yfh''; YbUi 'XUg'dUgg]Yfh'XYb'nk Y]': U\ f[ÀghYb']b'X]YgYa
: U\ f[YgW\ÀZž'XUg'a]h'Y]bYf'?cbghfi _h]cb'Ui g'Gdfi b[ZYXYfb
Ui g[YghUhhYh]gh''5a '\ØW\ghYb'Di b_h'gW\k Yb_h'XYf'G]hn'Y]ba U'
i a 'X]Y'Y][YbY'5W\gYž'VYj cf'Yf'k]YXYf']b'ZFY]Ya ': U''bUW\ 'i bhYb
gW\by''h''9a]]U'i bX'ž'bb]ZYf'K Y\bYf'\UVYb'XUg'5VYbhYi Yf
[Yk U[h'i bX'ZUbXYb'X]Y'5i gg]W\h'j cb'XYf'< Ò\Y '[fc» Ufh][ž'V]g'g]Y
k]YXYf'Ui ZXYa '6cXYb'k UfYb"

8 Ug'5XfYbU`]b'ghY][h'a]h'XYa ': fY]ZU`hi fa

8Yf': fY]ZU`hi fa 'Jc`WUbc`]gh'XYf'nk Y]hY'D'Uhn'Ui ZXYf'@]ghY'i bX
V]YhYh'XYb': U\ f[ÀghYb'Y]b'Ui ZFY[YbXYg'9f'YVb]g''8Yf' <i gg
G\chb'8fcd 'gcf[h'ZØf'Y]bYb'_cbhfc''YfhYb': U''[YdUUfh'a]h
i bYfk UfhYhYb'; YgW\k]bX][_Y]hgk YW\gY'b''K À\fybX'X]Y
: U\ f[ÀghY'g]W\Xi fW\XUg'd'Øhn']W\Y'<cW\gW\by''Yb'i bX'XYb
XUfUi Z'Zc'[YbXYb': U''gW\cW_]Yfh'ZØ\Ybž'V'Y]Vh'_Ui a 'NY]h'ni f
Fi \Y' 'X]Y'GW\fy]Y'\U''Yb'Xi fW\X]Y'@ Zh''A cb]_U'i bX'A Uf]Y'g]bX
g]W\Y]b][. '9g'_f]VVY'h'X]Y'[UbhY'NY]h]a '6Ui W''9bhk YXYf'\À'h

a Ub`X]Y`@ Zh`Ub` `cXYf`a Ub`a i gg`gW`fY]Yb`"

5b`XYf`Gd]mY`XYf`5i ZFY[i b[`ghY`h`i bVYghfY]hVUf`XYf` : `i W`X`Y`g
?fU`_`Yb` "8]YgY`5W`hYfVU`b`n]Y`h`6Ygi W`X`Y`f`X`i fW`X`Y`f`Y`
VYY]bXfi W`_`YbXY`<O`Y`j`cb`" , `A`Y`hYfb`i`b`X`Y`f`Y`f`UgUbhY`
; YgW`k`]bX][`_`Y]h`j`cb`V]g`ni`+`)`?`]`ca`Y`hYfb`d`f`c`G`h`i`b`X`Y`f`]b`Y`f`Y`b`
6Ubb`"8]Y`nk`Y`]: U`f`hYb`z`Y]bY`b`UW`X`Y`f`U`b`X`Y`f`Y`b`z`g`c`f`[`Y`b`Z`O`f`
5XfYbU`]b`di`f`z`X`Y`b`b`b`UW`X`Y`a` `Y`f`g`h`Y`b`@`c`d]b[`Y`h`Y`g`f`O`W`_`k`A`f`h`g`
k`]Y`X`Y`f`X`]Y`F`U`a`d`Y`h`]b`U`i`Z`G`Y]b`Y`b`B`Y`f`j`Y`b`_]h`n`Y`i`b`X`G`d`U`»`a`]h`
Y]b`Y`a`k`Y]h`Y`f`Y`b`5i`Z`h`f]h`h`ni`V`Y`g`W`X`Y`f]V`Y`b`z`]g`h`Z`O`f`6`Y`b`i`b`X`g`Y]b`Y`
A`i`h`Y`f`B`U`h`U`g`W`U`_`Y]b`D`f`c`V`Y`a` .`9`g`k`U`f`g`U`i`W`c`c`k`]f`h`U`V`Y`b`j`c`
[`Y`g`W`X`f]Y`b`°`

I`h]a`U`h]j`Y`B`Y`f`j`Y`b`_]h`n`Y`i]a` :`f`Y]n`Y]h`U`b`X`
;`Y]g`Y`k`]b`X`

8]Y`g`h`Y][`Y`b`X`Y`b`5b`Z`c`f`X`Y`f`i`b[`Y`b`U`b` :`U`f[`Y`g`W`X`A`Z`h`Y`i]a` :`f`Y]n`Y]h`U`b`X`
;`Y]g`Y`k`]b`X`n`Y][`Y`b`z`k`]Y`k`]W`X`h][`X`U`g`9`f`Y`V`b]g`Z`O`f`X]Y`6`Y`gi`W`X`Y`f`
[`Y`k`c`f`X`Y`b`]g`h`>`X`Y`5`h`h`f`U`_`h]c`b`V]Y`h`Y`h`]h`Y`Y][`Y`b`Y`5`f`h`j`c`b`
B`Y`f`j`Y`b`_]h`n`Y`i`b`X`n`U`i`V`Y`f`h`X`Y`b` :`U`f[`A`g`h`Y`b`Y]b`@`A`W`X`Y`b`]b`g`
;`Y`g]W`X`h`"8]Y`g`Y`9`b`h`k`]W`_`i`b[`Y`b`j`Y`f`X`Y`i`h]W`X`Y`b`b]W`X`h`b`i`f`X`Y`b`H`f`Y`b`X`
n`i`]a`a`Y`f`U`i`Z`FY[`Y`b`X`Y`f`Y`b`J`Y`f[`b`O[`i`b[`Y`b`z`g`c`b`X`Y`f`b`U`i`W`X`z`X`U`g`g`X]Y`
;`f`Y`b`n`Y`b`X`Y`g`A`O[`]W`X`Y`b`g`h`A`b`X][`b`Y`i`X`Y`Z]b]Y`f`h`k`Y`f`X`Y`b`":`O`f`j`]Y`Y`
V`Y]V`h`Y`g`Y]b`U`i`Z`FY[`Y`b`X`Y`g`9`f`Y`V`b]g`z`g]W`X`Y`f`Y`b`Y`b[`g`h`Y`b`n`i`g`h`Y`Y`b`
i`b`X`X`Y`b`G`W`X`Y`f`W`_`Y`b`]b`g`W`X`U`Y`b`X`Y`g`@`U`W`X`Y`b`i`a`n`i`k`U`b`X`Y`b`"

8]Y`9`b`h`k`]W`_`i`b[`j`c`b` :`f`Y]n`Y]h`d`U`f`_`g`]b`
8`Y`i`h`g`W`X`U`b`X`

:`f`Y]n`Y]h`d`U`f`_`g`h`U`V`Y`b`]b`8`Y`i`h`g`W`X`U`b`X`Y]b`Y`U`b[`Y` :`Y`g`W`X`]W`X`h`Y`z`X]Y`
V]g`]b`X]Y`%-`)`\$`Y`f`h`U`h`Y`n`i`f`O`W`_`f`Y]W`X`h`"8`Y`f`Y`f`g`h`Y`f]W`X`h][`Y`
 :`f`Y]n`Y]h`d`U`f`_`z`X`Y`f`g]W`X`U`i`Z`]b`X]j`]X`i`Y`Y`5`h`h`f`U`_`h]c`b`Y`b`i`b`X`
 :`U`a`j`]Y`b`Y`f`Y`V`b]g`g`Y`_`c`b`n`Y`b`h`f]Y`f`h`Y`z`k`U`f`X`Y`f`K`i`b`X`Y`f`U`b`X`?`U`_`U`f`z`
X`Y`f`%-`+`-`Y`f`O`Z`z`b`Y`h`k`i`f`X`Y`"G`Y]h`X`Y`a` `h`U`V`Y`b`g]W`X`]b`8`Y`i`h`g`W`X`U`b`X`
n`U`h`f`Y]W`X`Y` :`f`Y]n`Y]h`d`U`f`_`g`Y`b`h`k`]W`_`Y`h`z`X]Y`U`h`Y`H`f`U`X]h]c`b`Y`b`a`]h`
a`c`X`Y`f`b`Y`b`5`h`h`f`U`_`h]c`b`Y`b`_`c`a`V]b]Y`f`Y`b`"8]Y`g`Y`9`b`h`k`]W`_`i`b[`]g`h`b]W`X`h`
b`i`f`U`i`Z`X]Y`g`h`Y][`Y`b`X`Y`B`U`W`X`Z`f`U[`Y`b`U`W`X`9`f`Y`V`b]g`g`Y`b`]b`X`Y`f`

6Yj Ö`_Yfi b[`ni fØW_ni ZØ\ fYbž'gcbXYfb`Ui W`Ui Z`k]fhgWÅ UZh`]WÅ Y
: U_hc fYb`k]Y`XYb`Hci f]ga i gž'XYf`Y]bY`VYXYi hYbXY`F c`Y`VY]`XYf
9fZc`[g[YgWÅ]WÅ hY`X]YgYf`DUF_g`gd]Y`h"

8]Y`5hhfU_h]cbYb`]b`DUF_g`k]Y`XYa` : fY]nY]h`UbX` ; Y]gY`k]bX
fYZY_h]YfYb`X]Y`ni bY`a` YbXYb`5bgdfØWÅ Y`XYf`6Ygi WÅ Yf`8]Y
`Yi h][Yb` : fY]nY]hdUf_g`V]YhYb`b]WÅ h`bi f` : U`f[YgWÅ`ÅZhYž'gcbXYfb
Ui W`G`lck gž'[Ughfc bca]gWÅ Y`5b[YVchY`i bX`9f`YVb]gk Y`hYb`Ubž
X]Y`Ui Z`X]Y`6YXØfZb]ggY`XYf`j YfgWÅ]YXYbYb`5`hYfg[fi ddYb
Y]b[Y`Yb`8]Y`DUF_g`a ØggYb`_cbh]bi]Yf`WÅ`]bbcj Uh]j`gY]bž`i a`]a
K YhhVYk YfV`ni`VYghY`Yb`i bX`X]Y` ; ÅghY`]a a Yf`k]YXYf
Ubnin]Y`Yb"

6Ygi WÅ YfnU`Yb`i bX`k]fhgWÅ UZh`]WÅ Y 6YXYi hi b[

æi`>U`f`&\$%-`j YfnY]WÅ bYhYb`X]Y`[fc» Yb` : fY]nY]hdUf_g`]b
8Yi hgWÅ`UbX`ØVYf`() `A`j`]cbYb`6Ygi WÅ Yf`8]YgY`NU`U`U`h`Y]bYb
Yf`YV`]WÅ Yb`9]bZi gg`Ui Z`X]Y`c`_U`Y`K]fhgWÅ UZh`]bgVYgcbXYfY`]b
XYb`6YfY]WÅ Yb` ; Ughfc bca]Yž`9]bnY`UbXY`i bX`Hci f]ga i g`DUF_g
gWÅ UZYb`5fVY]hgd`ÅhnYž`ghY][Yfb`XYb`fY[]cbU`Yb`l a gUhm`i bX
hfU[Yb`ni f`9btk]W`i b[]j cb`æZfUghfi`_hi f`VY]"

8]Y`7CJ`8!%-`!DUbXYa`]Y`U`h`X]Y`6fUbWÅ Y`ghUf`_ [Yhfc ZYbž`YXcWÅ
Yf`c`hYb`g]WÅ`j]Y`Y`DUF_g`gWÅ bY`ž`bUWÅ XYa`X]Y`9]bgWÅ f`Åb`_i b[Yb
[Y`c`W`_Yfh`k i fXYb`9]b`5bgh]Y[`XYf`6Ygi WÅ YfnU`Yb`nY][Yb`XUg
[fc» Y`æhYfYggY`Ub`Ci hXccf!9f`YVb]ggYb`i bX`XYf`K i bgWÅ`bUWÅ
5VYbhYi Yfbž`k Ug` : fY]nY]hdUf_g`k]Y` ; Y]gY`k]bX`]bhYfbUh]cbU`Yg
æhYfYggY`g]WÅ Yfh`@Ui h`XYa`]YfVUbX`8Yi hgWÅ Yf` : fY]nY]hdUf_g`i bX
: fY]nY]hi bhYfbY`a Yb`Y`J`"fJ`8 : l`U`UVYb`j]Y`Y`DUF_g`bYi Y
G]WÅ Yf`Y]hg!`i bX`<m[]YbY`_cbnYdhY`]a d`Ya Ybh]Yfhž`i a`Y]b
g]WÅ YfYg`9f`YVb]g`ni`[Yk`Å`f`Y]ghYb"

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