

B Yi Yf': U''Ua '6cXYbgYY.'9fa]hhi b[Yb
i a 'a mghYf]ÒgY'HcXYgZÀ''Y

8]Y'N8: !?f)a]fY]\Y/ ei ch/8Yf'?ca a]ggUf'i bX'XYf
GYY/ ei ch/nY][h\Yi hY'X]Y': c`[Y/ ei ch/@]YVYk U\b/ ei ch"
B Yi Y'gdUbbYbXY'9fa]hhi b[Yb'i a 'F cVYfh'5bXYfg'Zc`[Yb']a
C_hcVYf°

8]Y'N8: !?f)a]fY]\Y' 8Yf'?ca a]ggUf'i bX'XYf'GYY 'YfZfYi h'g]W
[fc»Yf'6Y'YVh\Y]h'i bhYf'XYb'Ni gW U i Yfb" <Yi hY'k]fX'X]Y'9d]gcXY
@]YVYk U\b 'Ui g'XYa 'd\ f'&\$&&'YfbYi h'Ui g[YghfU\`h'`b'X]YgYf
dUW_YbXYb': c`[Y'_Y\fh'<Ui dh_ca a]ggUf'F cVYfh'5bXYfgž' [Ygd]Y`h
j cb`K U'hYf'G]hhYfž'bUW`gY]bYf'NY]h']b'GWk YXYb']b'gY]bY'<Y]a Uh
Ua '6cXYbgYY'ni fØW_'8]Y'; YgW]W hY'b]a a hY]bY'XfUa Uh]gWY
K YbXi b[ž'U'g'X]Y '@]WY'XYf'%) !`À\ f][Yb '@U'7cfXYg']a
6cXYbgYY'YbhXYW_h'k]fX" 'F cVYfh']gh'XYf`YhnhYž'XYf'XUg'A ÀXWYb
'VYbX' [YgY\Yb'\Uhž'i bX' [YfÀh'XUXi fW`]bg'J]g]Yf'XYf
9fa]hhi b[Yb"

8]YgYg'9fY][b]g'ZØ\fh'XUni ž'XUgg'5bb]_U'K U[bYfž'Y]bY'† b[Y
Dc`]nY]_ca a]ggUf]bž'X]Y'j cb'Bi f]h'<]fgW ZY'X'XUf[YghY`h'k]fXž']b
X]Y'9fa]hhi b[Yb']bj c'j]Yfh'k]fX" '8]Yg']gh'VYgcbXYfg'Vf]gUbhž'XU
5bb]_Ug'A i hhYfž'æ\UbbU'K U[bYfž'[Ygd]Y`h'j cb'?Uh\Uf]bU'6Ø\ a ž
F cVYfhg'YfghY' [fc»Y '@]YVY'k Uf" '8]Y' F ØW_ Y\ f']b'XUg' [Yk c\bhY
I a ZY'X'i bX'X]Y'9f]bbYfi b[Yb'Ub'j Yf[Ub[YbY'NY]hYb'Vf]b[Yb'X]Y
VY]XYb'<Ui dhZ][i fYb'bÀ\Yf'ni gUa a Yb" 'K À\ fYbXXYggYb' [YfÀh
8Ybb]g': Y'VYfž'XYf'9I !: fYi bX'j cb '@Už'i bhYf'A cfXj YfXUW'h"
F cVYfhg'B Yi []Yf'i bX'dYfgØb`]WY'A ch] Uh]cbž'XYb'k U\ fYb'HÀhYf
ni 'Z]bXYbž'ZØ\fh']\b'gW`]Y»`]W`Ui ZY]bY'i bYfk UfhYhY'Gdi f"

B Yi Yf': U''i bX'XfUa Uh]gWY'K YbXi b[Yb

8]Y`\\Yi h][Y`5i gghfU\\`i b[`X]YbhXYb` : Ubg`U`g`K]YXYf\\c`i b[ž
`YXcW`g]bX`g]Y`VYfY]hg`[YgdUbbh`Ui ZX]Y`_ca`a`YbXY`9d]gcXYž`X]Y
]a`C`_hcVYf`&\$&` `a`]h`XYa` `H]hY` ` B UffYbZfY]\\Y]h`DfYa`]YfY`ZY]Yfb
k]fX``8]Y`DfcXi`_h]cb`XYf`bYi`Yb` : c`[Yb`ZUbX`]b`i`bX`i`a` `@]bXUi
gck]Y`]b`<Ua`Vi`f[`ghUhh`K`À`\\fYbX`X]Y`YfghYb`VY]XYb` : c`[Yb
]a`a`Yf`]a`GYdhYa`VYf`[YnY][h`k`i`fXYbž`]gh`bcW`i`b`_Ufž`cV`X]Yg
Ui`W`Z0f`X]Y`b`ÀW`ghY`9d]gcXY`XYf` : U``gY]b`k`]fX"

⇒ VYggYfYb`?fY]gYb`]gh`XYf`H]hY` `XYf`b`ÀW`ghYb`GhUZZY`Zc`[Yž`X]Y
g]W`i`a` `X]Y`9bhXYW`_i`b[`Y]bYf`@Y]W`Y`Ua` `6cXYbgYY`XfY`\\h``9]b
[Y\\Y]a`b]gj`c`Yf` : U``YbhZU`hYh`g]W`ž`U`g`XYf`J`cf[YgYhnhY`XYf
HchYbž`XYf`fYbca`a`]YfhY`6]chYW`YI`dYfhY`i`bX`B`cVY`dfY]ghf`À[Yf
6YfbX`9gW`YbVUW`ž`YVYbZU`g`hc`h`]a` `K`UggYf`[Yž`bXYb`k`]fX`
[YZYggY`h`i`bX`Yfgh]W`_h``8]YgY`a`mgYf]0gYb`I`a`gh`ÀbXY`n]Y\\Yb`X]Y
Dc`]nY]cVYfa`Y]ghYf]b`5bb]_U`i`bX`]\\fYb`?c`Y[Yb`A`Ufh]b`?Y`Yf`]b
XUg` ; YgW`Y\\Ybž`k`À`\\fYbX`F`cVYfh`5bXYfg`dYfg0b`]W` `VYhfc`ZZYb`]ghž
XU`XUg`C`dZYf`Y]b`U`hYf`GW`i` `ZfYi`bX`k`Uf"

K`U`hYf`G]hhYf`gY`Vgh`\\U`h`k`Yb][`bcghU`[]gW`Y` ; YZ0`\\Y`Z0f`Y]bYb
<Y]a`Uhc`fh``9f`VYgW`fY]Vh`g]W` `U`g`Ya`UbXYbž`XYf`b]W`h`Ub`XYf
J`Yf[Ub[Yb\\Y]h`ZYgh`À`h``5bXYfg`U`g`gY]bY` :][i`fž`F`cVYfh`5bXYfgž
XYf`]b`XYb`9f]bbYfi`b[Yb`gY]bYf`?]bX`Y]h`YVhž`\\U`h`G]hhYf`_Y]b
Ni`\\Ui`gYž`XUg`]\\b`Ub`Y]bYb`VYgh]a`a`hYb`D`Uhn`V]bXYh`GY]bY` : fUi
\\U`h`XUni`Y]bYb`UbXYfYb`6Yni` [/`XYf`GW`k`Ufnk`U`X`]gh`]\\f
j`YfhfUi`hYf`F`0W`_ni` [gc`fh"

8]Y`<Ya`a`b]ggYž`X]Y`X]Y`?f]a`]gYf]Y` `8Yf`?ca`a`]ggUf`i`bX`XUg
A`YYf` `d`U[hYbž`Z0`\\fhYb`&\$&\$`ni` `i`\\fYf`9]bghY``i`b[``<c`\\Y
DfcXi`_h]cbg`_cghYbž`VYX]b[h`Xi`fW`X]Y`FY]gYb`Ui`ZX]Y
gW`k`YX]gW`Y`⇒bgY` ; ch`UbXž`a`UW`hYb`Y]bY` : cfhZ0`\\fi`b[
i`bk`]fhgW`UZh]W``8U`Yf`k`Uf`X]Y`5b`0bX][i`b[`]a` `C`_hcVYf`&\$&%
ni`f`K`]YXYfVY`YVi`b[`i`bhYf`XYa` `bYi`Yb`H]hY` `8Yf`?ca`a`]ggUf`i`bX
XYf`GYY` `Y]bY`dcg]h]j`Y`B`UW`f]W`h`Z0f`X]Y` : Ubg`XYf`GYf]Y"

?fYUh]j`Y`<YfUi`gZcfXYfi`b[Yb`i`bX`bYi`Y
⇒a`di`gY

8]Y`H`\\Ya`Uh]_`XYf`?f]a`]gYf]Y`fYZY`_h]Yfh`b]W`h`bi`f`gdUbbYbXY

?f]a]bU`ZÄ`Yž'gcbXYfb'gd]Y[Y`h'Ui W`X]Y`]bbYfYb'?cbZ]_hY']\fYf
7\UfU_hYfY`k]XYf"8]Y`J YfV]bXi b[`j cb`9fa]hhi b[Yb`i bX
dYfgÖb`]W`Yb`8fUa Yb`Vf]b[h`X]Y`7\UfU_hYfY`bÄ`Yfž`k Ä`fYbX`g]Y
[`Y]W`nY]h][`X]Y`<YfUi gZcfXYfi b[Yb`XYf`5i Z`Äfi b[`Y]bYg
J YfVfYW`Ybg`a Y]ghYfb" `Gc`W`Y`9bhk]W`_i b[Yb`Yfa Ö[`]W`Yb`Yg
XYb`Ni gW`Ui Yfbž`a]h`XYb`DfchU[cb]ghYb`a]hni ZØ`Yb`i bX`XYfYb
]bbYfY`GdUbbi b[Yb`bUW`ni j c`n]Y`Yb"8]Y`c`Y`E`i`U`]hÄh`XYf
GW`Ui gd]Y`Y]ghi b[Yb`i bX`X]Y`ZYggY`bXYb`<UbX`i b[ggfhÄb[Y
a UW`Yb`X]Y`GYf]Y`ni `Y]bYa`8Ui YfVfYbbYf`ja `XYi hgW`Yb
: YfbgY`Yb"

8]Y`; YgW`]W`hY`XYf`N8: !?f]a]fY]\Y` 8Yf`?ca`a]ggUf`i bX`XYf
GYY`_]gh`Yb[`j YfVi bXYb`a]h`XYf`HfUX]h]cb`XYi hgW`Yf
?f]a]bU`gYf]Yb"8Yf`: c`_i g`Ui ZY]b`Y]a]gW`Y`?i`]ggYb`i bX`c`U`Y
; YgW`]W`hYb`gd]Y[Y`h`g]W`b]W`h`bi`f`]b`XYf`bYi Yb`FY]\Y`k]XYfž
gcbXYfb`Ui W`]b`ZfØ`YfYb`: cfa UHYbž`X]Y`X]Y`Ni gW`Ui Yf`a]h
fY[]cbU`Yb`?f]a]bU`ZÄ`Yb`j YfhfUi h`a UW`hYb" `b`XYb`Y`h`hYb`Y`U`fYb
\UVYb`?f]a]gYf]Ybž`k]Y` HUhc`fh`i bX`K`]gVYf[ž[fc»Yb`5b`_Ub[
[YZ`bXYb`i bX`nY][Ybž`k]Y`XUg`; YbFY`]b`8Yi hgW`UbX`[Yk UW`gYb
]gh"

8Yf`?ca`a]ggUf`U`g`HY`]`XYf`XYi hgW`Yb
: YfbgY`\`UbXgW`UZh

8Yf`?ca`a]ggUf`i bX`XYf`GYY`_]gh`b]W`h`X]Y`YfghY`?f]a]gYf]Y`XYg
N8: ž`Y`XcW`hfÄ[h`g]Y`ni`f`J]Y`ZU`h`i bX`Dcdi`Uf]hÄh`XYg`?f]a] [Yb`fYg
]b`8Yi hgW`UbX`VY]"8]Y`GYf]Y`_ca`V]b]Yfh`9`Ya YbhY`j`cb
GdUbbi b[`i bX`Ya`ch]cbU`Yb`6Yn]Y`\i b[gXfUa Ybž`Y]b`?cbnYdhž
XUg`Ui W`]b`GYf]Yb`k]Y` 8Yf`6Yf[Xc`hcf`YfZc`[fY]W`]gh"8]Y` : Ub
XYf`?f]a]fY]\Y`\UVYb`Xi fW`X]Y`9]bV]bXi b[`Ui`hcV]c[fUd`\]gW`Yf
9`Ya YbhY`Ui g`XYa`@YVYb`XYf`<Ui`dhZ][i`fž[Ygd]Y`h`j`cb`K`U`hYf
G]h`hYfž`Y]bY`ghÄf`_YfY`J YfV]bXi b[`ni`f`; YgW`]W`hY`i bX`XYb
7\UfU_hYfYb"

8]Y`k]YXYf`_Y`fYbXY`H`Y`a`Uh]_`j`cb`: fYi bXgW`UZhž`J Yf`i`ghi bX`XYf
Gi W`Y`bUW`; YfYW`h][`_Y]h`a`UW`h`X]Y`; YgW`]W`hYb`i`a`F`c`VYfh
5bXYfg`VYgcbXYfg`bUW`j`c`n]Y`\VUf"8]Y`Ya`ch]cbU`Yb
J YfV]bXi b[Yb`]bbYf`U`V`XYf`<UbX`i b[`hfU[Yb`XUni`VY]ž`XUgg`X]Y

Ni gWUi Yf' b]W h' bi f' Ub' XYb' ? f]a]bU`Z`Yb']bhYfYgg]Yfh'g]bXž
gcbXYfb'Ui W' Ua' GW]W_gU`XYf':][i fYb"

Ni XYa' g]bX'X]Y'A i`h]_i`hi fU]hAh'XYf'FY[]cb'6cXYbgYY'i bX'X]Y
9]bVYn]Y\i b['\]ghcf]gWYfž`c_U] Yfk i fnY`hYf'9fnA\`i b[Yb']b'X]Y
<UbX'i b['fY`Yj UbhY'9`Ya YbhYž'X]Y'X]Y'?ca d`YI]hAh'i bX'X]Y
5bn]Y\i b[g_fUZh'XYf'GYf]Y`Yf\`0\Yb""8Yf'6cXYbgYY']gh'b]W h' bi f
Y]bY'a U`Yf]gWY`?i`]ggYž'gcbXYfb'Ui W' Y]b' Cfh'a]hY]bYf'fY]WYb
; YgW]W hYž'X]Y]b'XYb'9fnA\`ghfAb[Yb'XYf'GYf]Y'a]hgWk]b[h"
8]YgY`J YfUb_Yfi b[]b'XYf'fY[]cbU`Yb' ?i`hi f'i bX'; YgW]W hY
V]`XYh'Y]bY`gc`]XY`6Ug]g`Z0f'X]Y`9fnA\`i b["

8]Y`6YXYi hi b['j cb' ? f]a]gYf]Yb']b'XYf XYi hgW Yb' A YX]Yb`UbXgW UZh

⊖8Yi hgW`UbX'g]bX' ? f]a]gYf]Yb'Y]b']a a Yf'VYXYi hYbXYfYf
6YghUbXhY]`XYf'Ni gWUi Yfi bhYf\U`hi b["'GhUh]gh]_Yb'nY][Ybž'XUgg
? f]a]! : cfa UhY`ni`XYb'a Y]gh[YgY\YbYb'GYbXi b[Yb']a`XYi hgWYb
: YfbgY\Yb'nA\`Yb""9]bY`I a ZfU[Y`XYg'5`Yb gVUW! ⊖gh]hi h
Yf[UVž'XUgg`Yhk U`*) i`XYf'6YZfU[hYb'fY[Y'a A»][? f]a]bU`Z`a Y
i bX'!gYf]Yb' _cbgi a]YfYb""6YgcbXYfg]b'NY]hYb'j cb'I bg]WYf\Y]h
i bX'[YgY`gW UZh]WYa`K UbXY`bY][Yb'Ni gWUi Yf'XUni ž'g]W`j cb
? f]a]bU`gYf]Yb'UV`Yb_Yb'ni`UggYb'cXYf'X]Y'a cfU`]gWYb': fU[Ybž
X]Y']b'X]YgYb'; YgW]W hYb'Ui Z[Yk cfZYb'k YfXYbž'ni`fYZY_h]YfYb"

8]Y`9bhk]W`i b['j cb' ? f]a]gYf]Ybž'X]Y`fY[]cbU`Y`6YgcbXYf\Y]hYb
i bX'gcn]U`Y`H\Ya Yb'Ui Z[fY]ZYbž'k]fX'b]W h' bi f'j cb'XYb
: YfbgY\gYbXYfbž'gcbXYfb'Ui W' j cb'XYb'Ni gWUi Yfb'gY`Vgh
[YZcfXYfh"8]Y`Y]b[Y\YbXY`6YgW`Azh][i b['a]h[YgY`gW UZh]WYb
DfcV`Ya Yb']b' ? f]a]g`_Ubb'XUni`Z0fYbž'XUgg'X]YgY': fU[Yb'Ui W
]b'XYf'fYU`Yb'K Y`hi fYZY_h]Yfh'k YfXYb"" 8Yf'?ca a]ggUf'i bX'XYf
GYY`'bi hnh'X]YgY'; Y`Y[Yb\Y]hž'i a`U`hi Y`Y`H\Ya Yb'Ui Zni [fY]ZYbž
gcXUgg'X]Y`GYf]Y`b]W h' bi f'i bhYf\U`hYbX']ghž'gcbXYfb'Ui W' Y]bYb
6Y]hfU[`ni f'[YgY`gW UZh]WYb'8]g_i gg]cb`Y]ghYh"

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