

J UbXU`]ga i g`]b`7fU]`g\Y]a .`?]bXYfb`k]fX
: fYi XY`Ua `F UXZU\ fYb`[YfUi Vh

⇒ `@UbX_fY]g`GWk AV]gW`<U``k i fXYb`?]bXYfZU\ ffAXYf
VYgW`AX][hž`J Yf_Y\ fgi bZ`Y`YfY][bYhYb`g]W`ž`i bX`Y]b`D_k
[Yf]Yh]b`6fUbX"

5U`Yb`fbhgk` `?Øfn`W`k i fXYb`j YfgW]YXYbY`J cfZ`Y`]a `@UbX_fY]g
GWk AV]gW`<U``[Ya Y`XYhž`X]Y`j cb`GUW`gW`AXYb`V]g`\]b`ni
J Yf_Y\ fgi bZ`Y`b`fY]W`Yb`"8]YgY`9fY][b]ggY`k YfZYb`Y]b`@]W`h`Ui Z
X]Y`U_hi Y``Yb`<YfUi gZcfXYfi b[Yb`]a `GhfU» Ybj Yf_Y\ f`i bX`X]Y
G]W`Yf\Y]hj cb`9][Ybhi a `]b`XYf`FY[]cb"

⇒ `7fU]`g\Y]a `k i fXYb`a Y\ fYfY`?]bXYfZU\ ffAXYf`]b`Y]bYf
H]YZ[UfU[Y`VYgW`AX][h`5bk c\ bYf`]b`XYf`; c`XVUW`Yf`GhfU» Y
ghY`hYb`Ua `A]hk cW`ZYghž`XUgg`i bVY`UbbhY`Ub`XYb
: U\ ffUXfU\ a Yb`j cb`ZØbZ`6]_Yg`[YgÅ[h`\ UhYb`"8]Yg`a]bXYfh`b]W`h
bi f`XYb`K Yfh`XYf`VYgW`AX][hYb`: U\ ffAXYf`ž`gcbXYfb`Ui W`XUg
G]W`Yf\Y]hg[YZØ\`X`Yf`5bk c\ bYf`"8]Y`Dc`]nY]`7fU]`g\Y]a `V]hYh
XUfi a ž`XUgg`NYi [Ybž`X]Y`a Ò[`]W`Yfk Y]gY`6YcVUW`hi b[Yb
[Ya UW`h`\ UVYbž`g]W`i bhYf`XYf`HY`YZcbbi a a Yf`\$+-) %(`, \$\$
a Y`XYb"

J Yf_Y\ fgi bZ`Y`Y`]b`≡g\cZYb`i bX`; U]`XcfZ

J Yf_Y\ fgi bZ`Y`Y`g]bX`Ub`XYf`HU[YgcfXbi b[ž`i bX`nk Y]`Øb[ghY
Nk]gW`YbZ`Y`]b`≡g\cZYb`i bX`; U]`XcfZ] YfXYi h]W`Yb`X]Yg`"5a
8cbbYfghU[`i a`%%(`) `i \f`_Ua`Yg`]a `?fYi ni b[gVYfY]W`j cb
GW`a YfUW`Ui Y`ni f`GhUi ZYfghfU» Y`ni `Y]bYa `Ni gUa`a Ybghc»
nk Y]Yf`J K !: U\ fnYi [Y`"9]bY`) *!`Å\ f][Y`: U\ fYf]b`a]ggUW`hYhY`XUg
FYW`hg!j cf!@]b_g!; YVchž`k Ug`ni `Y]bYa `?c`]g]cb`a]hY]bYf
&(!`Å\ f][Yb`: U\ fYf]b`ZØ\ fhY`"8Yf`GUW`gW`UXYb`VY`Ài Zh]g]W`Ui Z

fi bX '%&"\$\$\$'9i fcži bX'Y]b') +! Å\ f][Yf'6Y]ZU\ fYf'a i gghY
Ui Z[fi bX''Y]W\ hYf'J Yf'Yhni b[Yb'VY\ UbXY'h'k YfXYb"'Gc'WXY
I bZÅ''Y'nY][Ybž'k]Y'k]W\ h]['Yg']ghž'X]Y'J Yf_Y\ fgfY[Y'b
Y]bni \U'hYbž'i a 'X]Y'G]W\ Yf\Y]h'U''Yf'J Yf_Y\ fghY]'bY\ a Yf'ni
[Yk Å\ f'Y]ghYb"

9]b'k Y]hYfYf'J cfZU''YfY][bYhY'g]W\ 'Ua '8cbbYfghU[UVYbX'Ui Z'XYf
6&- , 'Ub'XYf'9]ba ØbXi b['@%\$*''9]b'*(!Å\ f][Yf'J K !: U\ fYf
ØVYfgU\ 'Y]bY'j cf']\ a '\U'hYbXY') - !Å\ f][Y'6A K !: U\ fYf]b'i bX
Z \f'Ui Z]\f': U\ fnYi ['Ui Z'8UVY]k i fXY'Y]b', !Å\ f][Yf'6Y]ZU\ fYf
'Y]W\ h'j Yf'Yhnh'i bX'j]bg'?fUb_Yb\Ui g[YVfUW\ h''8Yf'GUW\ gW\ UXYb
k]fX'Ui Z'Yhk U'+ "\$\$\$\$'9i fc' [YgW\ Åhnh"'Gc'W\ Y'9fY][b]ggY'gW\ 'Y» Yb
]a a Yf'Ui W\ 'I bVYhY']][hY'Y]b'i bX'ZØ\ fYb'ni 'i bbØh][Ya '@Y]X'i bX
Z]bUbn]Y''Yb'J Yf'i ghYb"

6fUbX'Y]bYg'D_k 'j]b'I bhYfa Øb_\Y]a

5a '['Y]W\ Yb'8cbbYfghU['_Ua 'Yg'i a '%\$.() 'I \f']b
I bhYfa Øb_\Y]a 'ni 'Y]bYa 'D_k!6fUbX''9]b'6A K 'ghUbX'j]b'Y]bYf
DUf_Vi W\ h'Ua '5i hcVU\ bni Vf]b[Yf'XYf'6%- 'ni f'5*'j]b': 'Ua a Yb"
8]Y': Yi Yfk Y\ f'I bhYfa Øb_\Y]a ž'VYghY\YbX'Ui g'(%
9]bgUm_fÅžhYb'i bX'XfY]: U\ fnYi [Ybž[Y'Ub['Ygž'XYb'6fUbX
gW\ bY''ni ''ØgW\ Yb''8Yf'[YbUi Y'GUW\ gW\ UXYb']gh'bcW\
i bVY_Ubbhž'i bX'X]Y'6fUbXi fgUW\ Y'V'Y]Vh'ni fnY]h'i b[Y_`Åfh"
: U\ fnYi [VfÅbXY' _ØbbYb'YXYfnY]h'i bX'ØVYfU''YbhghY\Yb'i bX
YfZcfXYfb'gW\ bY''Yg'< UbXY'b'XYf': Yi Yfk Y\ fž'i a '[fØ» YfY
GW\ ÅXYb'ni 'j Yf\]bXYfb"

8]Y'?ca V]bUh]cb'j cb'J UbXU'j]ga i gž'J Yf_Y\ fgi bZÅ''Yb'i bX
: U\ fnYi [VfÅbXYb'nY][hž'XUgg'Yg]b'XYf'F Y[]cb'GW\ k ÅV]gW\ '<U''
]a a Yf'k]YXYf'ni 'i bYfk UfhYhYb'i bX'dchYbn]Y''[YZÅ\ f']W\ Yb
G]h' Uh]cbYb'_ca a h''H\]g'i bXYfgW'cfYg'h\Y'bYYX'Zcf'W'cbghUbh
j][]'UbW'Zfca 'Vch\ 'fYg]XYbhg'UbX'Ui h\cf]h]Yg"

F ØW_ZfU[Yb'V]hY'Ub.

Dc`nY]dfÅg]X]i a '5U'Yb'6Ø\ a Yfk U'XghfU» Y'&\$+'+' (' %'5U'Yb
HY'YZcb.' \$+' *%#), \$%\$('9!A U]. '5U'Yb"dd"ghg"cy4 dc`nY]"Vk ''XY

C f][]bU!7cbhYbhj cb. 'Dc`nY]dfÅg]X]i a '5U`Ybž'ØVYfa]hhY`h`Xi fWk
bYk g`U_hi Y`

8]Y`U_hi Y`Y`b`J cfZÅ`Y`g]bX`Y]b`_`UfYf`<]bk Y]g`Ui Z`X]Y
<YfUi gZcfXYfi b[Ybž'a]h`XYbYb`X]Y`Dc`nY]i bX`X]Y`; Ya Y]bgWk UZh
]b`GwK ÅV]gWk`<U``_cbZfcbh]Yfhg]bX"8]Y`6Øf[Yf`k YfXYb`XUni
Yfa i h][hž`Ui Za Yf_gUa`ni`gY]b`i bX`J YfXÅWk h][Y`5_h]j]hÅhYb`ni
a Y`XYbž`i a`X]Y`G]Wk Yf\Y]h`i bX`XUg; Ya Y]bgWk UZhg[YZØ`ni
ZØfXYfb"9g]gh`k]Wk h][ž`XUgg`U`Y`ni gUa a YbUfVY]hYbž`i a`Y]b
g]Wk YfYg`i a ZY`X`ni` [Yk Å`f`Y]ghYb"

<]bhYf[fi bX]bZcfa Uh]cbYb`ni f
J Yf_Y`f`gg]Wk Yf\Y]h

8]Y`J Yf_Y`f`gg]Wk Yf\Y]h]gh`Y]b`nYbhfU`Yg`H\Ya U`]b`8Yi hgWk`UbXž
XU`Yg`_cbh]bi]Yf`Wk`i a`X]Y`J Yff]b[Yfi b[`j cb`i bZÅ`Yb`i bX`XYfYb
: c[Yb`[Y`h" `a` `š\`f`&\$&&j YfnY]Wk bYhY`X]Y`6i bXYgUbghU`h`ZØf
GhfU» Ybk YgYb`f`b5Gh`ØVYf`&ž(`A`j`cbYb`i bZÅ`Yž`k Ug`Y]bY
g][b]Z]UbhY`NU\`XUfghY`h"8]Y`a Y]ghYb`i bZÅ`Y`YfY][bYb`g]Wk`]b
ghÅXh]gWk Yb`; YV]YhYbž`k cVY]`Åi Z][Y`i fgUWk Yb`5`_c`c`ž
ØVYf\Ø`hY`; YgWk]bX][_Y]h`i bX`A]ggUWk hi b[`j cb`J Yf_Y`f`gfY[Y`b
g]bX"8]Y`9]bZØ\fi b[`j cb`A U» bU`a Yb`k]Y
; YgWk]bX][_Y]hg_cbhfc`Yb`i bX
J Yf_Y`f`gfYfn]Y`i b[gdfc[fUa a Yb`n]Y`h`XUfUi Z`UVž`XUg
6Yk i gghgY]b`XYf: U`fYf`ni`gWk ÅfZYb`i bX`XUg`i bZU`f]g]_c`ni
a]b]a]YfYb"@Ui h`XYa`ghUh]gh]gWk Yb`6i bXYgUa h]gh`X]Y`NU\`XYf
J Yf_Y`f`ghc`hYb`]b`XYb`Y`hnhYb`š\`fYb`XUb`_`X]YgYf`6Ya Ø`i b[Yb
[Ygi b_Ybž`Y`XcWk`V`Y]Vh`X]Y`J Yf_Y`f`gg]Wk Yf\Y]hY]bY
<YfUi gZcfXYfi b[ž`]bgVYgcbXYfY`]b`6Ui [YV]YhYb`i bX`Ub
?fYi ni b[Yb"

5_hi Y`Y`GhUh]gh]_Yb`ni`J Yf_Y`f`gi bZÅ`Yb

9]bY`i a ZUggYbXY`5bU`mgY`XYf`GhUh]gh]_Yb`ni`J Yf_Y`f`gi bZÅ`Yb
nY][hž`XUgg`Y]b][Y`J Yf_Y`f`gg]hi Uh]cbYb`VYgcbXYfg[YZÅ`f`]Wk`g]bX"
@Ui h`XYb`U_hi Y`Y`b`6Yf]Wk hYb`XYf`65Gh`ghY`h`XYf`J Yf[`Y]Wk
nk]gWk Yb`XYb`YfghYb`gYWk`g`A cbUhYb`Y`XYg`š\`fYg`Y]bY

]bHyfYggUbhY'9bhk]W_i b['XUf'"&\$&' 'k i fXYb']b'XYb'YfghYb'gYWg
A cbUHYb'U''Y]b'ØVYf'%"%\$'\$'J Yf_Y\fgi bZÀ''Y'a]h'DYfgcbYbgW UXYb
fY[]ghf]Yfhž'Y]b'5bgh]Y['i a ') i 'ja 'J Yf['Y]W'ni a 'J cf'U\f"'5i W
X]Y'5bnU\''XYf'J Yf'YhnhYb'gh]Y['Ui Z'ØVYf'&) "\$\$\$ž'k cVY]
F ØW_g]W hg'cg][_Y]h'ja 'GhfU» Ybj Yf_Y\f'U'g'Y]bYf'XYf'< Ui dh[fØbXY
]XYbh]Z]n]Yfh'k i fXY"'8]Yg'nY][hž'k]Y'k]W'h]['Yg']ghž'X]Y
J Yf_Y\fgg]W Yf\Y]h'Yfbgh'ni 'bY\ a Yb'i bX'dfÅj Ybh]j Y'A U» bU\ a Yb
k Y]hYf'Ui gni VUi Yb"

? c``]g]c b gghUh]gh]_ 'i bX']\ fY'6YXYi hi b[

8]Y'J Yf_Y\fgi bZÀ''Yž'k]Y'g]Y'ja '5fh]_Y''VYgWf]YVYb'g]bXž
fYZY_h]YfYb'Y]bY'VfY]hY'DU'YhhY'Ub'DfcV'Ya Ybž'X]Y']b'i fVUbYb
i bX'j cfghÅXh]gW Yb'; YV]YhYb'\Ài Z]['Ui ZhfYhYb"'6YgcbXYfg'Ub
?fYi ni b[Ybž'k]Y'ja 'i: U''XYf'?c``]g]cb']b'≡g\cZYbž']gh'X]Y'; YZU\ f
j cb'i bZÀ''Yb'Xi fW'A]ggUW hi b['XYf'J Yf_Y\fgfY[Y'b'i bX'XUg
F YW hg!j cf!@]b_g !Df]bn]d' [Y[YVYb"'C Zh'nY][Yb'ghUh]gh]gW Y
9f\YVi b[Ybž'XUgg'Yhk U'' \$i 'XYf'J Yf_Y\fgi bZÀ''Y'Ub'?fYi ni b[Yb
i bX'9]ba ØbXi b[Yb'[YgW Y\Yb"'8YfUfh][Y'i bZÀ''Y'ZØ\ fYb'b]W h
bi f'ni 'GUW gW ÅXYbž'gcbXYfb'Ui W'ni 'J Yf'Yhni b[Ybž'k Ug'X]Y
Bchk YbX][_Y]hi bhYfghfY]W hž'X]Y'J Yf_Y\fgUi gV]'Xi b['i bX'XUg
6Yk i gghgY]b'XYf'5i hcZU\ fYf'ni 'j]bhYbg]j]YfYb"

8YhU]`g

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