

: 7A 'hY]'`h'g]W\`X]Y`Di b_hY`a]h'ga Ub]b[`
GU]gcb`Y]ghi b[`YbhhAi gW\ h

: 7A 'i bX'ga Ub]b[`hfYbbhYb`g]W\`Ua`&%"\$, "&\$&(`hcf`cg"
HfU]bYf'; ØbYg`Ai » Yfh'g]W\`ni f`gW\k UW\Yb`@Y]ghi b[`gY]bYf`
A UbbgW\UZh"

B UW\XYa`XYf': 7`A Ya`a]b[Yb`]b`Y]bYf`VYY]bXfi`W_YbXYb`GYf]Y
j`cb`j]Yf`G]Y[Yb`]b`: c`[Y`[`ÀbnhYž`UhhYb`g]Y`ja`<Y]a`gd]Y`[Y[Yb
XYb`: 7`ga Ub]b[`Yf`YV`W\Y`GW\k]Yf][`_Y]hYb`"5a`&%"5i [i gh
&\$&(`YbXYh`X]Y`DUfh]Y`a]h`Y]bYa`hcf`cgYb`l`bYbHgW\]YXYbž`k Ug
ZØf`X]Y`A Ya`a]b[Yf': Ubg`Y]bY`V]hhYfY`9bhhAi`gW\i`b[`XUfghY`h"
HfU]bYf`A Uhh`Ug'; ØbYg`Ai » Yfh`g]W\`bUW\`XYa`Gd]Y`VYgcf[h`i`bX
VYnY]W\`bYh`X]Y`J`cfghY`i`b[`gY]bYf`A UbbgW\UZh`U`g`X]Y
gW\k`ÀW\ghY`XYf`Ui`ZYbXYb`GU]gcb"

CVk`c`X`Ug`A`UhW\`Ub`ZUb[`g`j`]Y`j`YfgdfYW\YbX`VY[`Ubb`i`bX`VY]XY
HYUa`g`Ui`ZY]bYa`gc`]XYb`6UmYfb`][`Ub]j`YUi`gd]Y`hYbž`k`Uf`Yg`VU`X
XYf': 7`ga Ub]b[ž`XYf`a`Y`f`?`cbhfc`Y`ØVYf`XUg`Gd]Y`[`Yk`Ubb"
A`Ya`a]b[Yb`Vch`XYa`i`;`Y[`bYf`ni`j`]Y`F`Ui`a`ja`Gd]Y`Ui`ZVUi`ž`k`Ug
XYa`HYUa`Ui`g`XYf`A`ØbW\`bYf`J`cfghUXh`nk`Y]`_`UfY`HcfW\`UbW\`b
Y]bVfUW\`hYž`VYj`cf`XYf`GW\]YXgf]W\`hYf`ni`f`<`U`VnY]h`d`Z]Z`'8`Yf`↑`b[`Y
Hcfk`Ufh`8`U`G]j`U!DØh]b[`Yfž`XYf`_i`fnZf]gh][`ZØf`XYb`j`Yf`YhnhYb
8`ca`]b[_`8`Yk`Y]b`Y]bgdf]b[`Yb`a`i`gghYž`nY][`hY`k`À`fYb`X`X]YgYf
_f]h]gW\Yb`G]hi`Uh]cbYb`Y]bY`ghUf`_Y`@Y]ghi`b[`"A`h`Y]bYf
VYY]bXfi`W_YbXYb`: i » UVk`Y`f`]b`XYf`(`("A`]bi`hY`h`Y`h`Yf
A`Ya`a]b[Yb`]a`Gd]Y`"

Gd]Y`j`Yf`Ui`Z`i`bX`9b`hgW\Y]Xi`b[`Yb

⇒`XYf`nk`Y]hYb`<`U`VnY]h`VY[`Ubb`XYf`8`fi`W`XYg': 7`ga Ub]b[`ni
gW\k]bXYb`"8`]Y';`ÀghY`k`UfYb`j`cf`Yf`ja`Gd]Y`Ui`ZVUi`Y`ZZY`_h]j`Yf

[Yk YgYb'i bX'dfÅgYbhYf']b'XYb'8i Y''Yb'i a 'X]Y'nk Y]hYb'6Å''Y"
8cW'Ui W'XYf': 7A '\UhhY'GWk]Yf][_Y]hYbž'XUg'Gd]Y''gY'Vgh'ni
_cbhfc''YfYb''8]Y'6Y[Y[bi b['VYk Y[hY'g]W']b'Y]bYf' [Ya Å»][hYb
HYa dc'i bX'k Uf'ghYhg'Ui g[Y[']W'Ybž'c\ bY'XUgg'Yg'Ui Z'VY]XYb
GY]hYb' bYbbYbgk YfhY' Hcf[Y'Y[Yb\Y]hYb' [UV''9]b' < Ò\Ydi b_h'XYg
Gd]Y'g'k Uf'YXcW'X]Y'fchY' ? UfhY'ZØf'A]\U^cj]W]b'XYf'- \$''A]bi hYž
X]Y'XUg':]bU'Y'XYf'6Y[Y[bi b['bcW'Y]ba U'Ui Za]gW'hYž'YXcW
c\ bY'k Y]hYfY' ? cbgYei YbnYb'ZØf'XYb'Gd]Y'Ui g[Ub["

8]YgY'9bhÅi gW'i b['\Uh'b]W'h'bi f'5i gk]f_i b[Yb'Ui ZX]Y'A cfU'
XYg'HYUa gž'gcbXYfb'Ui W'Ui ZX]Y'HUVY''Y. 'A]h'X]YgYa
I bYbhgW]YXYb'a i gg'XYf': 7A 'X]Y'HUVY''YbZØ\fi b['UV[YVYb"
Di b_h['Y]W'a]h'XYa 'HGJ '%, * \$'A ØbW'Ybž'XYf'Ui Z[fi bX'XYf
VYggYfYb'HcfX]ZYfYbn'bi b'Ui ZX]Ya 'YfghYb'D'Uhn'ghY\hžg]bX'X]Y
A Ya a]b[Yf'bi b'Ui ZX]Ya 'nk Y]hYb'F Ub['[Y'UbXYh"

K Ufi a 'XUg'9f[YVb]g'VYXYi hYbX']gh

8 Ug'i bYbhgW]YXYb' [Y[Yb'ga Ub]b[']gh'b]W'h'bi f'Y]b'F ØW_gW'\U[
ZØf'X]Y'5a V]h]cbYb'XYg': 7A ž'gcbXYfb'nY][h'Ui W'ž'XUgg'a Ub']b
XYf'6UmYfb!F Y[]cbU''[U'YXYfnY]h'a]h' < YfUi gZcfXYfi b[Yb
fYW'bYb'a i gg''8 Ug'A UHW '\Uh'Y]ba U'a Y\ f'VYk]YgYbž'k]Y
YbhgW]YXYbX'Yg']ghž'Ui W' [Y[Yb'j Yfa Y]bh']W'gW'k ÅWYfY
; Y[bYf'_cbghUbh' [i hY '@Y]ghi b[Yb'ni 'nY][Yb''8 Yf'bÅWghY
; Y[bYfž'X]Y'BUW'k i W'ga UbbgW'UZh'XYg'HGJ '%, * \$'A ØbW'Ybž'k]fX
Y]bY'YbhgW]YXYbXY' < YfUi gZcfXYfi b['ZØf'X]Y'ni fØW_[Y_Y\fhYb
A Ya a]b[Yf'Gd]Y'Yf'XUfghY''Yb''9g'V'Y]Vh'ni '\c ZYbž'XUgg'g]Y'X]Y
@\fYb'Ui g'X]YgYa 'Gd]Y'n]Y\Yb'i bX'g]W'ZØf'X]Y'_ca a YbXYb
A UHW'Yg'VYggYf'j cfVYfY]hYb'_ØbbYb"

: Ubg'i bX'9I dYfhYb'g]bX'VYfY]hg' [YgdUbbhž'cV'XYf': 7'A Ya a]b[Yb
]b'XYf'bÅWghYb'DUfh]Y' [Y[Yb'XYb'HGJ '%, * \$'A ØbW'Yb'XYb
GW'U'hYf'i a 'Y[Yb'_Ubb''8]Y'_ca a YbXY' < YfUi gZcfXYfi b['k]fX
ZØf'X]Y'A UbbgW'UZh'Ybcfa 'k]W'h] ['gY]bž'k Ybb'g]Y'X]Y
HUVY''YbZØ\fi b['ni fØW_YfcVYfb'a ÒW'hY"

: Øf'k Y]hYfY'BUW'f]W'hYb'fi bX'i a 'XYb': 7'A Ya a]b[Yb'i bX'X]Y
F Y[]cb'6UmYfbž'Zc` [Yb'G]Y'XYa 'A Ya a]b[Yf'?I F ⇒F 'Ui Z

: UWVcc_i bX`V`Y]VYb`G]Y`ghYhg`Ui Z`XYa`@Ui ZYbXYb"

≠`XYf`6UmYfb`][U`nY][h`g]W`XUg`GdUbbi b[gZY`X`nk]gWYb
5i Zgh]Y[gUa`V]h]cbYb`i bX`XYb`<YfUi gZcfXYfi b[Yb`]a
Gd]Y`VYhf]YV"8]Y`@[Uk YhhVYk YfVY`g]bX`b]W`h`bi f`Y]bY`D`UhhZcfa
ZØf`hU`Ybh]YfhY`Gd]Y`Yfž`gcbXYfb`Ui W`Y]b`VYXYi hYbXYf`HY]`XYf
fY[]cbU`Yb`≠Ybh]h`h"8Yf`7A`ghY`h`XUVY]`ZØf`X]Y`<cZZbi b[`XYf
: Ubg`Ui ZY]bY`FØW`_Y`f`]b`\\Ø`YfY`Gd]Y`_`UggYbž`k Ug
Ni gWUi Yfa Yb[Yb`i bX`Z]bUbn]Y`Y`I bhYfghØhni b[`j cb`GdcbgcfYb
VYY]bZi ggh"9]b`k]f_i b[gj c`Yf`Ni gUa`a Yb`U`h`XYg`I a ZY`Xg
gck]Y`X]Y`9fnYi [i b[`Y]bYg`ghUf`_Yb`; Ya Y]bgW`UZhg[YZØ`g`g]bX
ZØf`XYb`Ub[Zf]gh][Yb`9fZc`[`YbhgW`Y]XYbX"

8]Y`U`_hi Y`Y`GU]gcb`nY][hž`XUgg`X]Y`@Y]ghi b[gX]W`hY`]b`XYf
6UmYfb`][U`c`W`]gh`HYUa`g`k]Y`≠ga`Ub]b[ž`X]Y`]b`XYf
JYf[Ub[Yb`Y]h`i bhYf`Y[Yb`gW]YbYbž`_ØbbYb`ØVYffUgW`YbXY
9f[YVb]ggY`Yfn]Y`Yb`Gc`W`Y`6Y[Y[bi b[Yb`j Yf`Ub[Yb`j cb`XYb
Gd]Y`Yfb`b]W`h`bi f`]bX]j]Xi Y`Y`?`UggYž`gcbXYfb`Ui W`Y]bY
YZZ`_hj Y`HYUa`XmbUa`_]`≠`X]YgYa`?`cbhYI`h`k]fX`XYi`h`]W`ž`XUgg
Ui W`Y]b`I bYbhgW]YXYb`5b`Ugg`ni f`FYZYI]cb`i bX`ghfUhY[]gW`Yb
5bdUggi b[`V]YhYb`_Ubb"

8]Y`F`c`Y`XYf`B`UW`k`i`W`ghY`Ua`g

9]b`a`Uf`_UbhYg`A`Yf`_a`U`XYf`6UmYfb`][U`]gh`X]Y`9]bVYn]Y`I`b[`j cb
B`UW`k`i`W`ghY`Ua`gž`k]Y`ni`a`6Y]gd]Y`X]Y`I`!A`UbbgW`UZhYb`j`cb
DfcZ]j`YfY]bYb"8]YgY`HYUa`g`Vf]b[Yb`Zf]gW`Y`HU`YbhY`i`bX`Yf`Ø`Yb
XYb`K`YhhVYk`YfV`Ui`Z`XYa`D`Uhn"8Yf`B`UW`k`i`W`g`XYg`HGJ`%`*`\$
A`ØbW`Ybž`XYf`bi`b`XYf`b`W`ghY`; Y[bYf`XYg`7A`]ghž`U`h`g]W`U`g
Yfbgmi`bY`a`YbXYf`; Y[bYf`YhUV]Yfh`i`bX`]gh]b`XYf`@U[Yž`XYb
YhUV]YfhYb`HYUa`g`DUfc`]ni`V]YhYb"8Ug`<]bni`ZØ[Yb`gc`W`Yf
A`UbbgW`UZhYb`ni`f`@[U`_Ubb`gck`c`X]Y`E`i`U`]h`h`XYf`Gd]Y`Y`U`g
Ui`W`X]Y`A`Uf`_hUhhfU`_hj]h`h`ghY][Yfb"

8]Y`9b`hk`]W`_i`b[`†`b[Yf`Gd]Y`Yf`]b`Y]bYa`k`YhhVYk`YfVgcf]Ybh]YfhYb
I`a`ZY`X`]gh`YVYbZU`g`YbhgW`Y]XYbX`ZØf`]fY`?`Uff]YfY"6]h`i`Uh]cbYb
k]Y`XUg`Gd]Y`XYg`7A`[Y[Yb`≠ga`Ub]b[ž`]b`XYa`†`b[Y`HU`YbhY
k]Y`8U`G]j`U!DØm]b[Yf`ni`[`ÀbnYb`k]ggYbž`V]YhYb`k]W`h][Y`@Yfb!

i bX`9bhk]W`i b[ga Ò[`]W_X]hYb"9]b`ghUf_Yg`B Yhmk Yf_]bbYf\U`V
XYg`J YfY]bg`i bX`Y]bY`YZ]n]YbhY` : ÒfXYfi b[` _ÒbbYb`HØfYb`ZØf
Gd]Y`Yf`ni ` \Ò\YfYb`@[Yb`ÒZbYb`i bX`XYb`J YfY]b`ni [`Y]W_X
Z]bUb]Y`i bhYfghØhYb"

8Yf`9]bgUhn`j cb`B UWk i W_Xgd]Y`Yfb`_Ubb`XYa` J YfY]b`_Ub[Zf]gh][
GhUV]`]h`h`j Yf`Y]\Yb"9g`]gh`YXcW_X`Y]bY`<YfUi gZcfXYfi b[ž`X]Y
a YbhU`Y`i bX`_ÒfdYf`]W_X`6Y`Ughi b[`YXYf`K cW_X`ni `VYk`À`h][Ybž
]bgVYgcbXYfY`]b`Y]bYa`@[Ui a Z`Xž`XUg`j cb`\c\Ya`8fi W_
[YdfÀ[h`]gh`8]Y`6U`UbW`nk]gW_XYb`9fZU\fi b[`i bX`^ [YbX`]W_XYf
I bVY_Øa a Yfh\Y]h`a i gg`ghYhg`[Yk U\fh`V`Y]VYb"

: U_hc fYb`ZØf`XYb`9fZc`[`]b`XYf`6UmYfb`][U

J YfgW_X]YXYbY` : U_hc fYb`VYY]bZi ggYb`XYb`9fZc`[`Y]bYg`HYUa`g`]b
XYf`6UmYfb`][U`8Uni` [Y\ÒfYb`X]Y`Z]bUb]Y`Y`G]hi Uh]cb`XYg
J YfY]bgž`X]Y`E i U`]h`h`X]Yg`HfU]bYfhYUa`gž`X]Y` :]hbYgg`i bX`X]Y
hYW_X]gW_X` : À\ [_Y]h`XYf`Gd]Y`Yf`GhUh]gh]_Yb`nY][Ybž`XUgg`HYUa`g
a]h`Y]bYa`gc`]XYb`@]nYbn]Yfi b[ga cXY`ž`XUg`X]Y`bZfUghfi _hi f`i bX
Gd]Y`YfYb`hk]W`i b[`df]cf]g]Yfhž`\Ài Z][`VYggYf`UVgW_XbY]XYb"
Ni XYa`gd]Y`h`X]Y`i bhYfghØhni b[`Xi fW_X]Y` : UbVUg]g`i bX`c_U`Y
Gdcbgc fYb`Y]bY`VYXYi hYbXY`F c`Y"9]b`Yb[U[]YfhYg`Di V`]i a
gc f[h`b]W_Xh`bi f`ZØf`Y]bY`YVYbX][Y`5ha`cgd\ÀfYž`gcbXYfb`Ui W_X`ZØf
ni g`h`n`]W_X`9]bbU\`a Yb`Xi fW_X`H]W_Yhj Yf`_Ài ZY`i bX`A YfW_XUbX]g]b["

þ`XYb`YhnhYb`X\YfYb`]gh`Y]bY`ghY][YbXY`DfcZYgg]cbU`]h`h`h
]bbYf\U`V`XYf`@[U`ni`VYcVUW_XhYb"8]Y`8UhYb`XYf`Gd]Y`UbU`mgYb
nY][Yb`Y]bY`g][b]Z]_UbhY`J YfVYggYfi b[`XYf`Gd]Y`hU_h]_Yb`gck]Y
Y]bY`j Yfgh`f`_hY`d\mg]gW_X` :]hbYgg`XYf`Gd]Y`Yf`VY]XYg
YbhgW_X]XYbX`ZØf`X]Y`K YhVYk YfVgZÀ\][_Y]h`Y]bYg`HYUa`g"
K YhVYk YfVgVYf]W_XhY`i bX`F ØW_a`Y`Xi b[Yb`Ui g`XYf`@[U`VY`Y[Ybž
XUgg`HYUa`gž`X]Y`Y]bY`dfcU_h]j Y`Gd]Y`YfYb`hk]W`i b[`i bX
hU`Yb]YfhY`ž [YbXZØfXYfi b[`_ca`V]b]YfYbž`gh`f`_YfY`F Ygi`hUHY
Yfn]Y`Yb`_ÒbbYb"8]Y`Gd]Y`YfnU\`Yb`Ui g`XYb`YhnhYb`GU]gcbg
nY][Ybž`XUgg`A`UbbgW_XUZhYbž`X]Y`]b`gdcfh]W_X`þ`ZfUghfi _hi f`
]bj Ygh]YfYbž`Y]bY`\Ò\YfY`9fZc`[gei chY`Ui Zk Y]gYb"

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