

Gc`UbU. '8]Y '? fmdhc k Å\fi b[ž`X]Y`X]Y GWk ÅWY`j cb`9h\YfYi a `VY\YVh

Gc`UbU`]gh`Y]b`Dfchc_c`ž`XUg`Y]b`5bk ÅfhYf`Ui ZX]Y`Ni `i bZh
]gh`GC@`]gh`XYf`bUh]j Y`Hc`Yb`a `]h`Y]bYf`A Uf`h`Ud]hU`]g]Yfi b[
j cb`ØVYf`(+`A`])UfXYb`I G!8c`Uf`8Yf`Hc`Yb`Ui ZX]Ya
g]YVhYb`D`Uhn`]b`XYb`Hcd`- - ž`i `XYf`5b`U[Y`UggY`GC@`U`h
k Å\fybX`XYf`?c`ffY`_hi f`XYf`YhnhYb`K cW`Y`j]Y`VYggYf
UV[YgW`b]hhYb`U`g`6]hW`]b`i bX`9h\YfYi a `6fYbbYbXY`Hc`Yb
cXYf`bYi Y`Ga Ufh!7cbhfUW!`i b_h]cbYb`UVYb`XYb`K Yfhj cb
GC@[Y\cVYb`8Yf`<UbXY`a `]h`cXYf`X]Y`þj Ygh]h]cb`]b
?fmdhc k Å\fi b[Yb`_Ubb`gc`gY]bž`U`g`k ØfXY`a Ub`Ui ZY]bYa
dgmW`ch]gW`Yb`DZYfX`Xi fW`Y]bY`J YfVfYbbi b[`fY]hYb`"
; YfUXY`U`g`i bX`VYfY]h`ni `gY]b`gW`Y]bYbž`X]Y`5`nY]h\cW`g
j cb`A U]i bX`ž`b`YfUi gni ZcfXYfbž`[]b[`Y`Ua`d`Y`d`/

- Gc`UbU`]gh`Y]b`Dfchc_c`ž`XUg`Y]b`5bk ÅfhYf`Ui ZX]Y`Ni `i bZh
]gh
- GC@`]gh`XYf`bUh]j Y`Hc`Yb`a `]h`Y]bYf`A Uf`h`Ud]hU`]g]Yfi b[
j cb`ØVYf`(+`A`])UfXYb`I G!8c`Uf`
- 8Yf`Hc`Yb`Ui ZX]Ya `g]YVhYb`D`Uhn`]b`XYb`Hcd`- - ž`i `XYf`
5b`U[Y`UggY`
- GC@`U`h`k Å\fybX`XYf`?c`ffY`_hi f`XYf`YhnhYb`K cW`Y`j]Y`
VYggYf`UV[YgW`b]hhYb`U`g`6]hW`]b`i bX`9h\YfYi a
- 6fYbbYbXY`Hc`Yb`cXYf`bYi Y`Ga Ufh!7cbhfUW!`i b_h]cbYb`
UVYb`XYb`K Yfhj cb`GC@[Y\cVYb

8Yf`<UbXY`a `]h`cXYf`X]Y`þj Ygh]h]cb`]b`?fmdhc k Å\fi b[Yb`_Ubb`gc
gY]bž`U`g`k ØfXY`a Ub`Ui ZY]bYa `dgmW`ch]gW`Yb`DZYfX`Xi fW`Y]bY`
J YfVfYbbi b[`fY]hYb`"; YfUXY`U`g`i bX`VYfY]h`ni `gY]b`gW`Y]bYbž`X]Y`
5`nY]h\cW`g]j cb`A U]i bX`ž`b`YfUi gni ZcfXYfbž`[]b[`XYb`DfY]gYb

Ua '+'GYdhYa VYf'X]Y'5i Zk Āfhg_fUZh'Ui gi bX'g]Y'[UVYb' bUWk "
9h\YfYi a 'j Yf'cf'a Y\ f'U'g'6]hWc]bžUVYf'6]hWc]b'nY][hY'Ua
8]YbghU[ž'XYb '+'GYdhYa VYfž'Y]b'fØW_`Āi Z][Yg'GWk'ØggY'i a _Y\ f!
<UbXY`ga i ghYf'Ui Z'gY]bYa 'hĀ[`]WYb': i hi fYg!7\Ufh"8]Y'VY]XYb
ZØ\ fYbXYb' ? fmdhc'g'ghY\Yb'bi b'j cf'b]YXf][YfYb' < ØW ghghĀbXYbž
k Ug'_Y]b'n]bgVi ``]gWYg'hYWk]gWYg'NY]WYb'ZØf'X]Y'5b'U[Y'_UggY
]gh"

I bhYfXYggYb'_ØbbhY'X]Y'Ui » Yf[Yk Ø\ b`]WY'DfY]gj Uf]Ub'n'X]Y
DfY]gU_h]cb'XYf''YhnhYb'K cWY''Y]W'hini 'Y]bYf'9]bhU[gZ]Y[Y'Ui Z
XYa 'K Y['ni 'bYi Yb' < ØW ghghĀbXYb'a UWYb''6i ``Yb'VYhfUWk hYb
X]Y'6Yk Y[i b['U'g'7\UbWž'k Ā\ fYbX'6ĀfYb'Ya]hh]YfYbž`]Wk '\UVY
⇒bYb'X]Yg:[Yk Ufbh"

Gc`UbU`]gh'Y]bY'XYf'Ui ZghfYVYbXYb' ? fmdhc'k Ā\ fi b[Ybž'X]Y'_Øfn`]Wk
j cf'8c[YWc]b'fĒ[Ygd fi b[Yb']gh"K Ā\ fYbX'XYf'Øb[ghYb' ? cffY_hi f
ØVYfhfUZyb'GC @Hc_Yb'6]hWc]b'i bX'9h\YfYi a ž'XU']\ f'DfcZ]'k Y]hYf
Ubgh]Y["

Gc`UbU`]gh'Y]b'Dfc hc_c`ž'XUg'Y]b'5bk ĀfhYf Ui Z'X]Y'Ni _i bZh]gh

⇒XYf'K Y'h'XYf'? fmdhc'k Ā\ fi b[Yb'g]bX'; YgWk]bX][_Y]hi bX
9Z]n]Ybn'Y]b'YbhgWY]XYbXYf'9fZc`[gZU_hc f" Gc`UbU'VY\Ui dhYhž'X]Y
gWk bY`ghY'6'cW_WU]b'XYf'K Y'h'i bX'XUg'Ua 'gWk bY`ghYb
k UWgYbXY'^2 _cgmghYa 'ja '6YfY]W' ? fmdhc'ni 'gY]bž'a]h'ØVYf
j]Yf\i bXYfh'Dfc'Y_hYbž'X]Y'8Y:]žB: Hgž'K YV' 'i bX'UbXYfY
i a ZUggYb"

5i ZXYf'K YVg]hY'j cb'Gc`UbU'\Y]» h'Yg.' @Y]ghi b[gghUf'_ZØf
9bhk]W_Yf"GWk bY``ZØf'U''Y"

5a '+'GYdhYa VYf'Z]Y'Yb'6]hWc]bž'9h\YfYi a 'i bX'j]Y'Y'UbXYfY
' ? fmdhc'k Ā\ fi b[Yb'ghUf'_`Gc`UbU'ØVYfhfUZ'XYb'FYgh'XYg': Y'XYg"' ⇒
Y]bYa '5fh]_Y`j cb'7c]bhY'Y[fUd\ 'j ca ' - "GYdhYa VYf'\Y]» Ygž'XUgg
Y]b'GC@N]Y`j cb') \$\$'i G8' _cbgYfj Uh]j 'gY]b'_ØbbhY"' A]h'a Y\ f
U'g'nk Y]j YfgWk]YXYbYb'B: H!Dfc'Y_hghUfhg'i bX'DfĀ[i b[Yb']a
^2 _cgmghYa 'dfc'HU['VYghY\h'Y]bY'YbX'cgY'B UWk ZFU[Y'bUWk'GC @

j cb'9]bnY`UbXY`g_Ài ZYfb" `bZc`[YXYggYb`UhYg'XYb'DfY]g'X]YgY
K cW\Y'hfchn`Y]bYg'a Uf_hk Y]hYb'7fUg\g'i a 'a Y\f'U'g') \$'i
[Y\U`hYb"

GC @]gh'XYf`bUh]j Y`Hc_Yb`a]h`Y]bYf
A Uf_h_Ud]hU`]g]Yfi b['j cb'ØVYf`(+`A]``]UfXYb
I G!8c``Uf

5a`%("GYdhYa VYf`U[Yb`X]Y`GC@Hc_Yb`Ui ZXYa`B]j YUi`j cb
) , ž \$'i G8`a]h`Y]bYf`A Uf_h_Ud]hU`]g]Yfi b['j cb`(+ž`)*`A]``]UfXYb
I G8"

E i Y`Y.`7c]bA Uf_Yh7Ud

8Yf'7\Ufh`Ui g'XYa`5df]`&\$&\$`nY][h'XYb'5bgh]Y['j cb`i bhYf`*\$
7Ybh`Ui Z`Y]b`<cW`j cb`%- %ž\$(`~`Ua`+"GYdhYa VYf"5a`%("GYdhYa VYf`k`i fXY`GC@VY]`%), ž \$`~`[Y\UbXY`hž`%*ž`i`i bhYf`
XYa`Øb[ghYb`<ØW`ghghUbX"

8Yf`Hc_Yb`Ui Z`XYa`g]YVhYb`D`Uhn`]b`XYb`Hc d

- - ž- 'i 'XYf'5b`U[Y_`UggY

5a '%("GYdhYa VYf'gWk YVhYb`]bg[YgUa h'%%", +)
?fmdhc k Å\fi b[g!Hc_Yb`]a `7mVYfgdUWf`Yfi a "'GC @žX]Y
g]YVhZØ\fybXY`?fmdhc k Å\fi b[ž\UhhY`Y]bY`Ø\YfY
A Uf_h_Ud]hU`]g]Yfi b['U`g'- - ž- (i `gY]bYf`?cb_i ffYbhYb"'GC @`U[`]b
XYf`A Uf_h_Ud]hU`]g]Yfi b[g\]YfUfWk]Y`Y]bYb`D`Uhn`i bhYf`i bX`Y]bYb
ØVYf`Dc`_UXch`f`"

A]h'(+ž) *`A]`]UfXYb`i G!8c`Uf`Ybhgd]Wk`hX]Y
A Uf_h_Ud]hU`]g]Yfi b[`j cb`GC @`&ž&) `i `XYf
; YgUa ha Uf_h_Ud]hU`]g]Yfi b[`XYf'5b`U[Y_`UggY"'Gc`UbU`gh]Y[`Ua
+"GYdhYa VYf`&\$&%Ui ZY]b`bYi Yg`FY_cfX\cWk`ž`k Å\fybX`6]hWk]bž
9h\YfYi a `i bX`j]Y`Y`UbXYfY`Hc_Yb`b]YXf][YfY`< ØWk ghghÅbXY
YffY]Wk`hYb`"

GC @`U`h`k Å\fybX`XYf`?c ffY`_hi f`XYf`Y`hnhYb
K cWk`Y`j]Y`VYggYf`UV[YgWk`b]hhYb`U`g`6]hWk]b
i bX`9h\YfYi a

8Yf`FØW_[Ub[`j ca `<cWk`j ca `+"GYdhYa VYf`VfUWk`hY`6]hWk]b!
: i hi fYg`Ua `%' "GYdhYa VYf`Ui ZXUg`Øb[ghY`H]YZj cb`(' "' %\$`ž
Y]b`FØW_[Ub[`j cb`%, ž) i "'8Yf`ZØ\fybXY`?fmdhc`Z]Y`YXcWk`i a
' `ž- i `i bhYf`gY]bYb`FY_cfX\cWk`j ca `%'("5df)`&\$&%"

9h\YfYi a !: i hi fYg`Z]Y`Yb`j cb`("\$) *ž&) `Ua ` "'GYdhYa VYf`Ui Z
XUg`Øb[ghY`H]YZj cb`" "%\$`ž`Ua `%' "GYdhYa VYf`cXYf`&' ž` i "'8Ug
FY_cfX\cWk`j cb`9h\YfYi a `5bZUb[`A U]`U[`VY]`("(\$*ž)`\$`i G8"
6Y]a `Øb[ghYb`H]YZj ca `%' "GYdhYa VYf`k Uf`X]Y`nk`Y]hZØ\fybXY
?fmdhc`i a `&- ž(i `[YZU`Yb`"

Gc`UbU`fGC @`U`h`6]hWk]b`i bX`9h\YfYi a `gY]h`XYb`Øb[ghYb
<ØWk ghghÅbXYb`]b`X]YgYa `A cbUhi bX`]fYb`FY_cfX\cWk`g`]a `5df)`
i bX`A U]`ØVYfhfc`ZYb`"

6fYbbYbXY`Hc`_Yb`cXYf`bYi Y`Ga Ufh!7cbhfUWk!

: i b_h]cbYb '\ UVYb 'XYb 'K Yfh'j cb 'GC @

[Y\cVYb

Gc`UbU`gW`cgg`XUg`>\f`&\$&\$`a]h`%ž (&%`I G8`dfc`Hc_Yb`UV``GC @
Hc_Yb`g]bX`]b`X]Y`<`Ò\Y`[YgW`cggYb`i bX`VchYb`ZUbhUgh]gW`Y
FYbX]hYb`Ui ZXYa`'Øb[ghYb`<cW`j cb`ØVYf`%), `I G8`dfc`Hc_Yb
Ua`%(`"GYdhYa`VYf`"K`À\fybX`XYf`7\Ufh`Ui Z`7c]bVUgY`fB5G85E`.t
XUg`FY`_cfX\cW`VY]`%-`%ž\$(`I G8`a`Uf_]YfhY`ž`gU[hY`A`YggUf]ž`XUgg
XYf`<`ÒW`ghk`Yfh`VY]`&%(`ž`*`I G8`"U["`9g`]gh`gW`k`Yfž`a`]h`XYf
gW`bY`"YV][Yb`5b`U[Y`_`UggY`GW`f]h`h`ni`"U`hYb`ž`XU`j`YfgW`]YXYbY
D`Uhž`cfa`Yb`i`bhYfgW`]YX`]W`Y`DfY]gXUhYb`a`Y`XYb`"5a`%(`"
GYdhYa`VYf`"ghYhY`7c]bVUgY`GC@U`g`g]YVhZØ`fYbXYg`Hc_Yb`Ui`ž
UVYf`A`YggUf]`U`hY`Yg`j`cf`L`DF`Ui`Z`XYa`g`YW`ghYb`D`Uhn`"

5V[YgY\Yb`j`cb`Gc`UbUg`;`YgW`k`]bX][`_Y]hž`9ZZ]n]Ybn`i`bX`Y]bYf
J]Y`nU\`j`cb`Dfc`Y`_hYb`\Uh`Yg`Ga`Ufh`7`cb`hfUW`hg`df]cf]g]Yfhž`VY]
XYbYb`Yg`g]W`i`a`]b`XYf`6`c`W`W`U]b`[YgdY]W`YfhY`Dfc`[fUa`a`Y
\UbXY`hž`X]Y`Ui`g[YZØ`f`h`k`YfXYbž`k`Ybb`j`cfVYgh]a`a`hY
6YX]b[i`b[Yb`YfZØ`h`g]bXž`i`bX`J`YfY]bVUfi`b[Yb`Ui`hca`Uh]g]YfYbž
X]Y`9f[YVb]gg]W`Yf\Y]h`V]YhYb`"8`UfØVYf`\]bUi`g`gdY`i`]YfhY`XYf
A`Uf`_hž`XUgg`Gc`UbU`Hc_Yb`j`YfVfYbbYbž`j`YfZØ[VUfY`A`ØbnYb`Ui`g
XYb`J`c`ff`À`hYb`Yb`hZYfbYbž`X]Y`?`bUdd\Y]h`Yf\`Ò\Yb`i`bX`XYb`K`Yfh
Yf\`Ò\Yb`_`ØbbhY`"

8Ug`J`YfVfYbbYb`j`cb`Hc_Yb`]gh`X]Y`[Y[YbhY`]][Y`A`U»`bU\`a`Yž`X]Y
FY[]Yfi`b[Yb`Yf[fY]ZYbž`k`Ybb`g]Y`X]Y`;`Y`Xa`Yb[Y`Yf\`Ò\Yb`"

Gc`UbU`]gh`Y]bY`6`c`W`W`U]bž`X]Y`Y]b][Y`XYf`GW`k`ÀW`Yb`j`cb
9h\YfYi`a`]b`6Yni`[`Ui`Z`G`U`]YfVUf`_Y]h`i`bX`\c\Y
HfUbgU`_h]cbg`_cghYb`VY\YVYb`_ØbbhY`"GC@ž`8`CH`i`bX`7`UfXUbc`f`
g]bX`Y]bY`;`fi`ddY`j`cb`?`fmdhc`gž`X]Y`Y]b][Y`5bU`mghYb`9h\YfYi`a`!
?]`Yf`bYbbYb`"

8]Y`Øb[ghY`DfY]gU`_h]cb`VY]`GC@]gh`Y]bY`k`Y]hYfY`?`fmdhc`!
9fZc`[g[YgW]W`hYž`X]Y`GdY`_i`_UbhYb`k`Y]hYf\]b`Ui`Z`XYf`Gi`W`Y`b`UW
XYa`b`ÀW`ghYb`Yi`d`c`g]j`Yb`Hc_Yb`Ui`Z`XYb`A`Uf`_h`hfY]VYb`k`]fX`"
K`Ybb`G]Y`g]W`Y]bYf`?`fmdhc`k`À\fi`b[`j`ca`_`_Y]bghYb
Ui`ZghfYVYbXYb`Hc_Yb`V]g`\]b`ni`6]hWc]b`b`À\Yfbž]bj`Ygh]YfYb`G]Y

bi f? Ud]hU`žXYggYb`J Yf`i gh`G]Y`g]W`Y]ghYb`_ÖbbYb``8]Y`c`Y`
Jc`Uh]`hÄhi bX`l bg]W`Yf`Y]h`XYf`5b`U[Y`UggY`]gh`Y]b`dYfZY`_hYg
6Y]gd]Y`XUZØfž`k]Y`XUg`9fhfU[gdchYbn]U`XYa`c`Yb`F]g]_c
Ub[Ya YggYb`]gh"

°Zi bWh]cbfZVžYž žbžžgŁo]ZfZ`ZVeŁfYhi fb/b1 Z`ZVe1 Zi bWh]cbfŁ
ob"WU`A Yh`cX3
b"WU`A Yh`cX"Udd`mfbbžUf[i a YbhgŁ.b"ei Yi Y"di g`fUf[i a YbhgŁq/
]Zf`Z`SZVeŁZ`SZVe1 b/b"di g`l b/b"UXYX1 °\$/b"j Yfg]cb1 f&"\$f/
b"ei Yi Y1 Qh1 V"WfYUhY9`Ya YbhfYŁ/h"UgmbW1 °\$/
h`gfW j /g1 V"[Yh9`Ya Ybhg6mHU[BUa YfYŁQ\$Q
g"dUfYbhBcXY"]bgYfh6YZcfYfhžgŁqfk]bXck ž`XcW a YbhžfgW]dhfž
f`hhdg.##McbbYWh"ZUWVcc_"bYh#YbSI G#Z/Yj Ybhg"gfŁ/ZVeff]b]hfž
fi+) %%%\$, , %* (' &) , fŁ/ZVeffmfUW_fž`fDU[YJ]Yk fŁ`

8YhU]`g

6Ygi W`Yb`G]Y`i bg`Ui Z.`_fmdhc!bYk g"Uh