

# Jc``gdYffi b[ 'Ui Z'XYf'5%. JYf\_Y\fgg]hi Uh]cb 'bUWX 'I bZU`` 'YbhgdUbbh g]WX

5i Z'XYf'5%'F]W\hi b[ 'Hf]Yf'gcf[ h'Y]bY'Jc``gdYffi b[ 'bUW\ Y]bYa 'I bZU```ZØf'GhUi g"'I a ZU\fYb'G]Y'XYb'VYhfcZZYbYb 6YfY]W\^

5i Z'XYf'5i hcVU\b'5%']b': U\fhf]W\hi b['Hf]Yf'\_Ua 'Yg'\Yi hY'ni Yf\YV']W\Yb'J Yf\_Y\fgVY\]bXYfi b[Ybž'VYX]b[h'Xi fW\'Y]bYb JYf\_Y\fgi bZU``"8]Y'GhfU» Y'k i fXY'j cfØVYf[Y\YbX'j c``ghÀbX][ [YgdYffhž'k Ug'ni 'Y]bYa 'VYfY]hg'VYghY\YbXYb'GhUi 'ZØ\fhY" 5i hcZU\fYfž'X]Y']b'X]YgY'F]W\hi b['i bhYfk Y[g'k UfYbž'a i gghYb g]W\'Ui Z'`Àb[YfY'K UfhYnY]hYb'Y]bghY``Yb'i bX'gc``hYb'XYb'6YfY]W\\bUW\'A Ò[`]W\\_Y]h'k Y]hfÀi a ]['i a ZU\fYb"

?cb\_fYhY'8YhU]`g'XYg'I bZU``g'g]bX'V]g\Yf'b]W\hij YfÒZZYbh`]W\h k cfXYbž'YXcW\']gh'X]Y'GdYffi b[ 'nk ]gW\Yb'XYb'5bgW\`i ggghY``YbGU`a hU``i bX'GW\k Y]W\'Y]b'XYi h`]W\Yg'NY]W\Yb'ZØf'X]Y'GW\k YfYXYg'J cfZU``g"'6Y]'gc`W\Yb'G]hi Uh]cbYb'\_Ubb'Yg'gck c\``ni JYf`YhnhYb'U`g'Ui W\'ni 'Yf\YV`]W\Yb'GUW\gW\ÀXYb'\_ca a Ybž k Yg\U`V'X]Y'6Y\ÒfXYb'gW\bY``\UbXY`b'a i gghYbži a 'X]YG]W\Yf\Y]h'U``Yf'JYf\_Y\fghY]`bY\a Yf'ni '[ Yk À\f`Y]ghYb"

#### JYf\_Y\fgg]hi Uh]cb i bX 9a dZY\ i b[Yb

 Ui Z'a Y\fYfYb'?]`ca YhYfbž'k Ugʻni 'Y]bYf'fY[Y`fYW\hYb ?YhhYbfYU\_h]cb'ZØ\fhY"'

I a 'XYb'GhUi 'ni 'i a [Y\Ybž'\_ÒbbYb'5i hcZU\fYf'U`hYfbUh]j Y'F ci hYb k À\`Yb"'9]bY'YbhgdfYW\YbXY'I a `Y]hi b['k]fX'Ya dZc\`Ybž'i a b]W\h'i bbÒh]['NY]h']a 'GhUi 'ni 'j Yf`]YfYb"'8]Y'JYf\_Y\fg`Y]hnYbhfU`Y\Uh'XUni 'VYfY]hg'<]bk Y]gY'Ub'X]Y': U\fYf'Ui g[Y[YVYb"'K Yf'g]W\b]W\h'g]W\Yf']ghž'gc``hY'U\_hi Y``Y'JYf\_Y\fgbUW\f]W\h'b'j YfZc`[Ybžia 'Ui Z'XYa '@Ui ZYbXYb'ni 'V`Y]VYb"

8 Ugʻ5i Z\YVYbʻXYfʻJc``gdYffi b[ˈk i fXYˈa ]hh`Yfk Y]`YʻVY\_Ubbh [Y[YVYbži bXʻXYfʻJYf\_Y\fʻVY[]bbh'U``a À\`]W\k]YXYfʻni 'Z]Y» Yb" 9gʻV`Y]VhʻYXcW\k]W\h][žʻUi ZʻX]Yʻ; YgW\k]bX][\_Y]hini 'UW\hYb'i bX ]a 'k Y]hYfYbʻJYf`Ui ZʻXYfʻ: U\fhfci hYʻJcfg]W\h`k U`hYbʻni '`UggYbž'XU Ygʻa Ò[`]W\Yfk Y]gYʻ]a a YfʻbcW\ni 'JYfnÒ[Yfi b[Ybʻ\_ca a Yb\_Ubb"

8]Y'G]hi Uh]cb'nY][h'XYi h`]W\ž'k]Y'gW\bY```g]W\'XYf'JYf\_Y\f'Xi fW\i bj cf\Yf[YgY\YbY'9fY][b]ggY'j YfÀbXYfb'\_Ubb"'5i hcZU\fYf'g]bX
[i h'VYfUhYbž'ghYhg'Ui Za Yf\_gUa 'ni 'gY]b'i bX'g]W\'Ui Z'a Ò[`]W\Y\'YbXYfi b[Yb'k À\fYbX'XYf': U\fh'Y]bni ghY``Yb"'

#### $8]Y 6YXYi hi b[XYfJYf_Y\fgg]WXYfY]h$

±0.5 b V Y h f U W h 'X Y f '\ c \ Y b 'N U \ ``U b ': U \ f n Y i [ Y b ž 'X] Y 'h À [ `] W 'U i Z 'X Y b 5 i h c V U \ b Y b 'i b h Y f k Y [ g 'g] b X ž '] g h 'X] Y 'd f À j Y b h J j Y 'G] W Y f \ Y J h j c b \ Ò W g h Y f `6 Y X Y i h i b [ "'J Y f \_Y \ f g i b Z À ``Y '\_O b b Y b 'j Y f \ Y Y f Y b X Y : c `[ Y b '\ U V Y b 'i b X 'X] Y 'J Y f \_Y \ f g h Y] `b Y \ a Y f ž g c k ] Y 'B c h Z U ``X] Y b g h Y ž j c f '[ f c » Y ' < Y f U i g Z c f X Y f i b [ Y b 'g h Y ``Y b "' ≯ X Y f 'I b Z U ```] g h Y ] b '5 i Z h f U [ n i f 'J Y f V Y g g Y f i b [ 'X Y f 'J Y f \_Y \ f g g] W Y f \ Y ] h 'i b X 'n Y ] [ h ž X U g g 'g c k c \ ` : U \ f Y f 'U `g 'U i W 'J Y f \_Y \ f g] b Z f U g h f i \_h i f Y b 'c d h ] a ] Y f h 'k Y f X Y b a Ø g g Y b "

Ni gàhn`]W\ ni `XYb`U``hà[`]W\Yb`< YfUi gZcfXYfi b[Yb`gc``hYb
JYf\_Y\fghY]`bY\a Yf`ghYhg`ØVYf`X]Y`bYi YghYb`9bhk]W\_`i b[Yb`i bX
G]W\Yf\Y]hgf]W\h`]b]Yb`]bZcfa ]Yfh`gY]b"`8 Ug`9f[fY]ZYb`j cb
J cfg]W\hga U» bU\a Ybž'k]Y`XUg`9]b\U`hYb`j cb`5Vgh\hXYb`i bX`XUg
6YUW\hYb`j cb`JYf\_Y\fggW\]`XYfbž`\_ObbhY`XUni `VY]hfU[Ybž'X]Y

5bnU\``j cb`l bZÀ``Yb`ni 'gYb\_Yb`i bX`X]Y`G]W\Yf\Y]h'Ui Z`XYb GhfU» Yb`ni 'Yf\Ò\Yb"

±0 'XYf'\Yi h][ Yb 'NY]hž']b 'XYf'A cV]`]hÀh'Y]bYb 'nYbhfU`Yb 'D`Uhn']b i bgYfYa '@YVYb'Y]bb]a a hž']gh'Y]b'\_i fnYg'±bY\U`hYb'i bX FYZY\_h]YfYb'ØVYf'XUg'Y][ YbY': U\fj Yf\U`hYb'j cb'YggYbh]Y``Yf 6YXYi hi b["'≯XYf'\_Ubb'Y]bYb'6Y]hfU[ 'ni 'g]W\YfYfYb'GhfU» Yb `Y]ghYbž'gY]'Yg'Xi fW\j YfUbhk cfhi b[ gVYk i gghYg': U\fYb'cXYf Xi fW\XUg'A Y`XYb'[ YZÀ\f`]W\Yf'G]hi Uh]cbYb"

 $8 ]Y'JYf_Y \setminus fgg]hi Uh]cb'Ui Z'XYf'5\%']gh'b]Wkh'bi f'Y]bY'k Y]h \\ j YfVfY]hYhY'DfcV'Ya Uh]_ž'gcbXYfb'gd]Y[Y'h'Ui Wk'[fÒ» YfY \\ < YfUi gZcfXYfi b[Yb']a 'XYi hgWkYb'JYf_Y \setminus fgbYhn'k]XYf''8Yf'5\%']gh \\ Y]bY'XYf'< Ui dhj Yf_Y \setminus fgUWkgYb'8Yi hgWk`UbXg'i bX'j YfV]bXYh \\ bÒfX`]WkY'i bX'gØX`]WkY'FY[]cbYb'XYg'@UbXYg'''=\ fY'6YXYi hi b[nY][h'g]Wk'VYgcbXYfg']b'Ghc>nY]hYbž'k c'I bZÀ``Y'i bX'6Ui ghY``Yb gWkbY``ni 'a Ugg]j Yb'JYf_Y \fgVY\]bXYfi b[Yb'ZØ\fYb'_ObbYb''' \]$ 

± XYb ``YhnhYb '\*J\fYb '\Uh'g]W\ 'X]Y 'J Yf\_Y\fgX]W\hY 'Ui Z'XYb
5i hc VU\bYb 'XYi h`]W\ 'Yf\O\hž'k Ug'X]Y 'B chk YbX][ \_Y]h 'ZØf'a Y\f
J Yf\_Y\fgg]W\Yf\Y]h i bX '# ZfUghfi \_hi f]bj Ygh]h]cbYb i bhYfghfY]W\h"
GhUh]gh]\_Yb 'VY`Y[ Ybž'XUgg'X]Y 'NU\`'XYf'J Yf\_Y\fgi bZÀ``Y'Ui Z
XYi hgW\Yb '5i hc VU\bYb ']b 'XYb ``YhnhYb '\*J\fYb 'nk Uf']bg[ YgUa h
[ Ygi b\_Yb ']ghž'I bZÀ``Y'Xi fW\GhUi g'i bX`UVfi dhYg'6fYa gYb 'YXcW\\Ài Z][ 'ni 'gW\k YfYfYb': c`[ Yb'ZØ\fYb'\_ObbYb"'

## < ]bhYf[ fi bX]bZcfa Uh]cbYb ni J Yf\_Y\fgi bZÀ``Yb</pre>

A ]h'XYa '5bgh]Y[ 'XYg'J Yf\_Y\fgUi Z\_ca a Ybg'g]bX'Ui W\'X]Y

< YfUi gZcfXYfi b[ Yb'\]bg]W\h`]W\'XYf'J Yf\_Y\fgg]W\Yf\Y]h

[ Ygh]Y[ Yb"'\*bgVYgcbXYfY']b'XYf': Yf]YbnY]h'cXYf'Ub': Y]YfhU[ Yb
\_ca a h'Yg'\Ài Z][ 'ni 'Y]bYa 'Yf\Ò\hYb'F]g]\_c'j cb

J Yf\_Y\fgi bZÀ``Yb"'@Ui h'Y]bYf'GhUh]ghU!I a ZfU[ Y'Ui g'XYa '\*\J\f
&\$&' [ YVYb'\* + i 'XYf'6YZfU[ hYb'Ubž'XUgg'g]Y'g]W\']b'ghUf\_

VYZU\fYbYb'6YfY]W\Yb'VYgcbXYfg'i bg]W\Yf'ZØ\`Yb"'

 $9g`]gh`VYa\ Yf\_Ybgk\ Yfhž`XUgg`hfchn`XYf`:\ cfhgWkf]hhY`]b`XYf$ 

: U\fnYi [ hYWkbc`c [ ]Yž'k ]Y`n"6"`XYf`9]bZØ\fi b[ 'j cb 5gg]ghYbngmghYa Ybž'a YbgWk`]WkYg'JYfgU[ Yb'bUWk'k ]Y'j cf'Y]bY XYf'\Ài Z][ ghYb'l bZU``i fgUWkYb'XUfghY``h", VYfa À» ][ Y ; YgWkk ]bX][ \_Y]hž'5V`Yb\_i b[ 'Xi fWk'Ga Ufhd\cbYg'i bX'A ØX][ \_Y]h g]bX'bi f'Y]b][ Y'XYf': U\_hcfYbž'X]Y'\Ài Z][ 'ni 'JYf\_Y\fgi bZÀ``Yb ZØ\fYb"

### $5_hi Y^Y GhUh]gh]_Yb ni f'J Yf_Y fgg]WX YfY]h$

∜l\f	5bnU\`XYf JYf_Y\fgibZÀ`` Y	Hc hY	JYf`YhnhY
&\$&\$	&"* - \$"\$\$\$	&"+%-	' , +"\$\$\$
&\$&%	&"*\$\$"\$\$\$	&"* \$\$	' +\$"\$\$\$
&\$&&	&", \$\$"\$\$\$	&") \$\$	(\$\$"\$\$\$

8]YgY`NU\`Yb`VY`Y[Yb`XYb`\_cbh]bi]Yf`]W\Yb`8fi W\_ž`X]Y

J Yf\_Y\fgg]W\Yf\Y]h`]b`8Yi hgW\`UbX`ni 'j YfVYggYfb"'8]Y

6i bXYgfY[]Yfi b[`\Uh`A U» bU\a Yb`Yf[f]ZZYbži a `X]Y

J Yf\_Y\fgg]W\Yf\Y]h`ni 'ZÒfXYfbž`XUfi bhYf`X]Y`9f\Ò\i b['j cb
; YgW\k]bX][\_Y]hg\_cbhfc``Yb`i bX`XYb`9]bgUhn'j cb

J Yf\_Y\fgYfn]Y\i b["

9]b'k Y]hYfYg'nYbhfU`Yg'H\Ya U']gh'X]Y'Bchk YbX][\_Y]hž'XUg
GhfU» YbbYhn'ni 'a cXYfb]g]YfYb'i bX'ni 'Yfk Y]hYfbži a 'a ]h'XYa
k UW\gYbXYb'JYf\_Y\fgUi Z\_ca a Yb'GW\f]hh'ni '\U`hYb"'9]bY

\[
\dip j Ygh]h]cb']b']bhY``][YbhY'JYf\_Y\fggmghYa Y'\_\ObbhY'X]Y'G]hi Uh]cb
ni \_i bZhgg]W\Yf'[YghU`hYb'i bX'gck c\``X]Y'G]W\Yf\Y]h'XYf
JYf\_Y\fghY]`bY\a Yf'Yf\O\Yb'U`g'Ui W\X]Y'9ZZ]n]Ybn'XYg
JYf\_Y\fgZi ggYg'j YfVYggYfb"

8 YhU]`a