

B Yi Y'< U`hYghY``Yb']a '?fY]g. GWXbY``Vi g`]b]Yb'j YfVYggYfb'5bV]bXi b[°

8]Y'F9J; !GW\bY``Vi ggY'Yfk Y]hYfb'UV'a cf[Yb']\fY'Fci hYb i a 'gYW\g'<U`hYghY``Yb']b'6fØ\`ž'?YfdYbž'9fZhghUXh'i bX 9`gXcfZ'

Ni gÀhn`]WXY'JYfV]bXi b[Yb'ZØf'Y]bY'VYggYfY 5bV]bXi b[

9]b'k Y]hYfYf'k]W\h][Yf'5gdY_h'XYf'bYi Yb'Fci hYb \mathbb{Z} \fi b[']gh'X]Y 5bV]bXi b['XYg'?fUb_Yb\Ui gYg']b'9f\text{ZhghUXh''8i fW\'X]Y < U`hYghY``Yb' @\V`UfYf'GYY 'i bX' @\V`Uf': fUi Ybh\U` 'k]fX'bi b'Y]b

X]fY_hYf`Ni [Ub['ni a '; Ygi bX\Y]hgnYbhfi a '[Yk À\f`Y]ghYhž'k Ug ZØf`5bk c\bYf'j cb'nYbhfU`Yf`6YXYi hi b[']gh"'\dangle Y]bYf`NY]hž']b`XYf XYf`6YXUfZ'Ub'a YX]n]b]gW\Yb'8]Ybgh`Y]ghi b[Yb'ghY][hž']gh'YXY JYfVYggYfi b[']b`X]YgYa '6YfY]W\'j cb'[fc» Ya 'Bi hnYb"

 $9fZhghUXh!; ma b]WX k]fX YVYbZU``g`b]WXh'j Yf[YggYbž'XU'X]Y \\ GWXbY``Vi g`]b]Y'-&\#' '__ØbZh]['Ui WX'XYb'?ib]VYfhi gd`Uhn \\ UbghYi Yfb k]fX"'8]YgY'J YfV]bXi b['Yf`Y]WXhYfh'b]WXh'bi f'XYb \\ GWXi `VYgi WX'ZØf'X]Y'GWXØ`Yfž'gcbXYfb'j YfVYggYfh'Ui WX'X]Y \\ 9ffY]WXVUf_Y]h'ZØf': Ua]`]Yb'i bX'6Yfi ZghÀh][Yž'X]Y'Ui Z'ÒZZYbh`]WXY \\ JYf_Y\fga]hhY``Ub[Yk]YgYb'g]bX"'8Ua]h'k]fX'XUg'N]Y`'j YfZc`[hž XYb'² DBJ'UhhfU_h]j Yf'ni '[YghU`hYb'i bX'X]Y'A <math>O[`]WX_Y]hYb'ni f$ Bi hni b['OZZYbh`]WXYf'JYf_Y\fga]hhY``ni 'Yf\OYb"

 $GWX`]Y*`]WX`k]fX`XUg`; YkYfVY[YV]Yh`]b`9`gXcfZ'a]h`XYf`< U`hYghY``YCghghfU*Y`VYX]Ybhž'kUg`ZØf``c_U`Y`IbhYfbY\aYb`dcg]h]jY5igk]f_ib[Yb`\UVYb`XØfZhY"`8]Y`bYiY`5bV]bXib[`_ObbhYdchYbn]Y``Yb`?ibXYb`ibX`A]hUfVY]hYfb`XYb`KY[`ni`;YgWX\AZhgg]hnibX`5fVY]hgd`\AhnYb`Yf`Y]WXhYfb"`8]YgY`GWXf]hhY`hfU[Yb`XUni`VY]žXUgg`X]Y`k]fhgWXUZh`]WXY`9bhk]W_`ib[`]b`XYf`FY[]cb`ibhYfghØhnhk]X`IbX`X]Y`5hhfU_h]j]h\Ah`XYf`GhUbXcfhY`Yf\O\h`k]fX"$

6YXYi hi b[XYf ŸbXYfi b[Yb ZØf X]Y FY[]cb

 $8]Y'bYiYb'< U'hYghY`Yb'fYZY_h]YfYb'b]Wkh'bi f'X]Y'6YXØfZb]ggY'XYf \\ 6 Øf[Yf']a 'F\Y]b!9fZh!?fY]gž'gcbXYfb'Ui Wk'XUg'9b[U[Ya Ybh'XYf F9J; ž'XYb'ÒZZYbh`]WkYb'BU\jYf_Y\f'_cbh]bi]Yf`]Wk'ni 'jYfVYggYfb''; YfUXY']b'NY]hYbž']b'XYbYb'i a k Y`hZfYi bX`]WkY'JYf_Y\fga]hhY` [YZÒfXYfh'k YfXYbž'nY][h'X]YgY'<math>\Rightarrow$]h]Uh]jY'Y]bYb'GWkf]hh']b'X]Y f]Wkh][Y'F]Wkhi b[''8]Y'9fkY]hYfi b['XYg'GWkbY``Vi gbYhnYg']gh'Y]b NY]WkYb'XYg'K UbXY`g'i bX'XYf'5bdUggi b['Ub'X]Y'k UWkgYbXYb 5bZcfXYfi b[Yb'XYg'`c_U`Yb'JYf_Y\fg''

8]Y'F9J; '\Uh'XUa]h'Y]bY'k]W\h][Y'KY]W\YbghY``i b['ZØf'X]Y
A cV]`]hÀh']b'XYf'FY[]cb'j cf[Ybca a Yb"'8]Y'ŸbXYfi b[Yb'gc``Ybb]W\h'bi f'XYb'DUggU[]YfYb'ni [i hY_ca a Ybž'gcbXYfb'Ui W\'ni f9bh'Ughi b['XYg'GhfU»Ybj Yf_Y\fg'VY]hfU[Yb"'9]bY'VYggYfY
5bV]bXi b['XYf'] YfgW\]YXYbYb'CfhghY]`Y'_Ubb'XUni 'ZØ\fYbž'XUgq

a Y\f`A YbgW\Yb`Ui Z`6i ggY`i bX`6U\bYb`i a ghY][Ybž'k Ug`b]W\h'bi f XYb`J Yf_Y\f`fYXi n]Yfhž'gcbXYfb`Ui W\`X]Y`l a k Y`h'Ybh`UghYh"

8]Y'fYY]bghY``i b['XYf'FY]gYfci hYb'nY][h'XUg'6YghfYVYbž'XYb
ÒZZYbh`]WXYb'BU\j Yf_Y\f'UhhfU_h]j Yf'ni '[YghU`hYb Y]bY
YggYbh]Y``Y'AU»bU\aY']b'XYf'\Yi h][Yb'gWXbY```YV][Yb'NY]h''CV'Yg
i a 'X]Y'9ffY]WXVUf_Y]h'j cb'6]`Xi b[gY]bf]WXhi b[Ybž'; YgWXÀZhYb
cXYf'a YX]n]b]gWXYf'JYfgcf[i b['[Y\hž'X]Y'bYi Yb'JYfV]bXi b[Yb
g]bX'Y]b'k Y]hYfYf'6Ui ghY]b'ZØf'X]Y'9bhk]W_`i b['Y]bYf'a cXYfbYb
JYf_Y\fgghfi _hi f"

BYi Y'DYfgdY_h]j Yb'ZØf'XYb'ÒZZYbh`]WX Yb BU\j Yf_Y\f

8]Y'[Yn]Y`hYb'AU» bU\aYb'XYf'F9J; 'ni f'JYfVYggYfi b['XYgGW\bY``Vi gbYhnYg'nY][Yb'Y]b'_`UfYg'G][bU``ZØf'X]Y'Ni_i bZh"'9gV`Y]Vh'gdUbbYbX'ni 'VYcVUW\hYbž'k]Y'X]YgY'ŸbXYfi b[Yb']b'XYfDfUl]g'Ub_ca aYb'i bX'cV'g]Y'hUhgÀW\`]W\'ni 'Y]bYf'9f\O\i b['XYf'U\f[UghnU\`Yb'ZØ\fYb"'@Yhnh`]W\']gh'XYf'OZZYbh`]W\Y'BU\jYf_Y\fYb'YggYbh]Y``Yg'9`YaYbh'ZØf'X]Y'@YVYbgei U`]hÀh'XYf'6Øf[Yf'i bXX]Y'k]fhgW\UZh`]W\Y'GhUV]`]hÀh'XYf'FY[]cb"'8]Y'6fØ\`Yf'\DYbybghUXhžXUg'9fZh'?UffYYž'X]Y'?`]b]_']b'9fZhghUXh'i bX'j]Y`Y'UbXYfY'N]Y`Y'g]bXbi b'VYggYf'a]hY]bUbXYf'jYfVi bXYbž'i bX'XUg']gh'Yfgh'XYf'5bZUb["

$8]Y^6YXYi hi b[^OZZYbh^]WXYf$ JYf_Y\fgUbV]bXi b[

2 ZZYbh`]WXY'JYf_Y\fga]hhY`gd]Y`Yb'Y]bY'YbhgWXY]XYbXY'Fc``Y']b
XYf'i fVUbYb'A cV]`]hÀh'i bX'g]bX'ZØf'j]Y`Y'A YbgWXYb
i bj Yfn]WXhVUf"'\deltagVYgcbXYfY']a '`ÀbX`]WXYb'FUi a '_ObbYb
Ui g[YXY\bhY'OZZYbh`]WXY'JYf_Y\fgbYhnY'XYb'Ni [Ub['ni
5fVY]hgd`ÀhnYbž'6]`Xi b[gY]bf]WXhi b[Yb'i bX': fY]nY]hUb[YVchYb
Yf\YV`]WX'Yf`Y]WXhYfb"'8]Y'bYi Yb'<U`hYghY``Yb']b'6fØ\`ž'?YfdYbž
9fZhghUXh'i bX'9`gXcfZ'X]YbYb'b]WXh'bi f'XYf'6Yei Ya `]WX_Y]h'XYf
DYbX`Yfž'gcbXYfb'ZOfXYfb'Ui WX'X]Y'Bi hni b['OZZYbh`]WXYf
JYf_Y\fqa]hhY`i bX'\Y`ZYbž'XYb'dxX]j]Xi U`j Yf_Y\fni 'fYXi n]YfYb"</pre>

JYf_Y\fgghUh]gh]_Yb i bX HfYbXg

@Ui h'XYa 'GhUh]gh]gW\Yb'6i bXYgUa h'bi hnYb']b'8Yi hgW\`UbX'Yhk U (&i 'XYf'6Yj O`_Yfi b['fY[Y`a À»]['OZZYbh`]W\Y'JYf_Y\fga]hhY`"'=bghÀXh]gW\Yb'FY[]cbYb'g]bX'X]YgY'NU\`Yb'cZh'\O\Yfž'k Ug'nY][hž XUgg'Y]bY'[i hY'5bV]bXi b['i bX'Yb[a UgW\][Y'JYf_Y\fgbYhnY'ni a Y\f': U\f[AghYb'ZØ\fYb'_ObbYb"'8]Y'F9J; '\Uh'ni `Yhnh'Y]bY GhY][Yfi b['XYf': U\f[UghnU\`Yb'j cb'ØVYf') i ']a 'j Yf[Ub[YbYb \$J\f'j YfnY]W\bYhž'k Ug'X]Y'Bchk YbX][_Y]h'gc`W\Yf'5bdUggi b[Yb i bhYfghfY]W\h"

Ni gàhn`]W\`VYf]W\hYb`I a ZfU[Ybž'XUgg`*+ı `XYf`DYbX`Yf`Ub[YVYbž XUgg`Y]bY`JYfVYggYfi b[`XYf`6i g!`i bX`6U\bj YfV]bXi b[Yb`Y]bYb YbhgW\Y]XYbXYb`9]bZi gg`Ui Z`]\fY`9bhgW\Y]Xi b[`\Uhž'Ui Z \OZZYbh`]W\Y`JYf_Y\fga]hhY``i a ni ghY][Yb"`A]h`XYf`9]bf]W\hi b[`XYf bYi Yb`<U`hYghY``Yb`]gh`ni `Yfk UfhYbž'XUgg`X]YgY`NU\`Yb`k Y]hYf ghY][Yb"

Ni gUa a YbUfVY]hii bX =bj Ygh]h]cbYb]b X]Y =b ZfUghfi _hi f

I a 'X]Y'A cV]`]hÀh`]a 'F\Y]b!9fZh!?fY]g'k Y]hYf`ni 'j YfVYggYfbž'g]bX b]W\h'bi f'bYi Y' < U`hYghY``Yb'k]W\h][ž'gcbXYfb'Ui W\'Y]bY i a ZUggYbXY'D`Ubi b['i bX'\bj Ygh]h]cb']b'X]Y'\bZfUghfi _hi f"'8]Y Ni gUa a YbUfVY]h`nk]gW\Yb'XYb'?ca a i bYbž'XYf'F9J; 'i bX UbXYfYb'JYf_Y\fghfÀ[Yfb'k]fX'U`g'YggYbn]Y``'YfUW\hYhž'i a 'Y]b bUW\\U`h][Yg'i bX'YZZ]n]YbhYg'JYf_Y\fggmghYa 'ni 'gW\UZZYb'''8Uni [Y\Òfh'Ui W\'X]Y'fY[Y`a À»][Y', VYfdfØZi b['i bX'5bdUggi b['XYf': U\fd`ÀbYž'i a 'XYb'6YXØfZb]qqYb'XYf': U\f[ÀghY'[YfYW\h'ni

#bj Ygh]h]cbYb ']b 'X]Y 'X][]hU `Y '#b ZfUghfi _hi fž'k]Y 'n" '6"

9Wk hnY]h]b Zcfa Uh]cbYb 'ØVYf'5VZU\fnY]hYbž'YfZfYi Yb 'g]Wk
ni bY\a YbXYf'6Y`]YVh\Y]h" 'Gc`WkY'HYWkbc`c[]Yb '_ObbYb 'XYb

Bi hnYfb '\Y`ZYbž'X]Y 'ZØf'g]Y '[Øbgh][ghYb 'J YfV]bXi b[Yb 'ni 'Z]bXYb
i bX']\fY 'FY]gYb 'YZZ]n]YbhYf'ni '[YghU`hYb" '8]Y 'F9J; 'd`Ubh'ni XYa ž

XUg'i a k Y`hZfYi bX`]WkY'J Yf_Y\fgk YgYb 'k Y]hYf'Ui gni VUi Ybž'i a

XYb 'O_c`c[]gWkYb': i » UVXfi W_'ni 'j Yff]b[Yfb'i bX'Y]bY
bUWk\U`h][Y'A cV]`]hÀh'ni 'ZÔfXYfb"

8 YhU]`g

6Ygi WXYb G]Y i bg Ui Z b!U["XY