

## I bZU``Z`i W\h']b'6i bXY. Dc`]nY]'gi W\h NYi [ Yb'ZØf'D? K !6YgW\AX][ i b[

±b 'XYb '`YhnhYb 'HU[ Yb '[ UV 'Yg 'a Y\fYfY 'J cfZÀ``Y ']b 'XYf
Dc`]nY]X]YbghghY``Y '@YYf#9a XYbž'X]Y 'i bhYfgWX]YX`]WX Y
5i Za Yf\_gUa \_Y]h'YffY[ hYb" '8 Uni '[ Y\ÒfYb 'Y]b 'i bZU``VYX]b[ hYf
J cfZU```i bX 'Y]bY '[ YZÀ\f`]WX Y 'G]hi Uh]cb 'Ua 'K UggYfž'X]Y 'VY]XY 'ni f
5`Ufa ]Yfi b[ 'XYf'Dc`]nY] 'ZØ\fhYb"

5a '%\* "'5i [i gh'&\$&( 'dUf\_hY 'Y]bY '&, ! 'À\f][ Y ': fUi ']b '6i bXY ']\fYb [fUi Yb 'B]ggUb 'Ui Z'XYa 'DUf\_d `Uhn'Y]bYg'J YfVfUi W\Yfa Uf\_hYg'Ub XYf'BYi gW\UbnYf'GhfU» Y"'K A\fYbX'g]Y 'UVk YgYbX'k Ufž'hci W\]YfhY Y]b 'i bVY\_UbbhYf': U\fYf']\f'5i hc 'VY]a '9]b! 'cXYf'5i gdUf\_Yb']a \]bhYfYb '`]b\_Yb'6YfY]W\"'8Yf'J Yfi fgUW\Yf'\_Øa a YfhY'g]W\'b]W\h i a 'XYb'YbhghUbXYbYb'GW\UXYb'i bX'j Yf']Y» 'XYb'Cfh'XYg ; YgW\Y\Ybg"'8]Y'Dc`]nY]'gi W\h'bi b'NYi [Ybž'X]Y'<]bk Y]gY'ni X]YgYa 'JcfZU``[YVYb'\_ObbYb"

; Ygi bX\Y]h`]W\Y`DfcV`Ya Y`VY] JYf\_Y\fgi bZU``

9]b'k Y]hYfYf'JcfZU``'YfY][bYhY'g]W\"Ua'%-"'5i [igh'&\$&(']b Id'Yb[Yb"'9]b'\*+!'À\f][Yf'AUbb'Uig'BcfX\UigYb'jYf`cf'[Y[Yb%+.))'I\f'X]Y'?cbhfc``Y'ØVYf'gY]bY'GUhhY`ni [aUgW\]bY'ibX'\_Uajcb'XYf'AY]bYfgZY\bYf'GhfU»Y'UV"'8]Y'9]bgUhn\_fÀZhY'jYfaihYbžXUgg'[YgibX\Y]h`]W\Y'DfcV`YaY'ni'X]YgYa'IbZU``'ZØ\fhYb":YiYfkY\f'ibX'FYhhib[gX]Ybgh'kUfYb'gW\bY``jcf'Cfhžia'XYaAUbb'ni'\Y`ZYb"'BUW\'Y]bYf'YfghYb'aYX]n]b]gW\Yb'JYfgcf[ib[

kifXY'Yf']b'Y]b'?fUb\_Yb\Uig'[YVfUW\h"'=b':c`[Y'XYg'IbZU``gkifXY'X]Y'GhfU»Y'ZØf'YhkU'nkY]'GhibXYb'[YgdYffhž'ia6Yf[ib[gUfVY]hYb'XifW\niZØ\fYb"

±b 'XYf 'GhUXh' 9a XYb' [UV'Yg'\_Øfn']W\'9fa ]hh'i b[Ybž'X]Y'k Y[YbY]bYg'JcfZU``g'Ua '&, "'⇒']'&\$&('Y]b[Y`Y]hYh'k i fXYb"'9hk U'' \$
DYfgcbYb'\UhhYb'g]W\'i a '\$'.\$\$'I\f'bUW\hg'Ui Z'XYa 'BYi Yb'A Uf\_h
j YfgUa a Y`h'i bX'g]bX']b'F]W\hi b['6c`hYbhcfghfU»Y'[Ync[Yb"'8]Y
Dc`]nY]'i bhYfghY``h'XYf'; fi ddY'XYb'JYfXUW\h'XYg
@UbXZf]YXYbgVfi W\g'i bX'gi W\h'nYi [Ybž'X]Y': chcg'cXYf
±bZcfa Uh]cbYb'ni 'X]YgYa '9fY][b]g'VYfY]hghY``Yb'\_ÒbbYb"

#### FUi a ZØf A ]ggVfUi W Ua < UZYb

9]bii ba Ò[`]W\Yg'JYf\U`hYb'ZUbX']b'9a XYb'Ua'%-"'5i [i gh'&\$&(Ua'5`hYb'6]bbYb\UZYb'ghUhh"'8]Y'Dc`]nY]'ki fXY'i a'&&.%&'I\fU`Ufa]Yfhž'U`g'Y]b'A Ubb']bg'<UZYbVYW\_Yb'[YZU``Yb'k Uf"'8YbbcW\ki fXY'XYf'')!À\f][Y'[`ØW\_`]W\Yfk Y]gY'gW\bY``jcb'9fgh\Y`ZYfb[YfYhhYhž'X]Y']\a'ni f'GY]hY'\_Ua Yb''5i ZZÀ``]['k Ufž'XUgg'X]YgYfA Ubb'ni jcf'a]h'Y]bYa'FYhhi b[gf]b['gd]Y`hY'i bX']\b']bg'K UggYf[Yk cfZYb'\UhhYž'VYjcf'Yf'gY`Vgh']bg'<UZYbVYW\_Yb'Z]Y`"'BUW\XYaYf'Y]bYb'\c\Yb'5hYaU`\_c\c`k Yfh'jcb'&ž'-'Dfca]``Y'\UhhYž'ki fXYYf'jcfØVYf[Y\YbX']b'; Yk U\fgUa'[Ybca a Ybž'i a']\b'jcfk Y]hYfYb'; YZU\fYb'ni 'gW\ØhnYb"

8]YgY'JcfZÀ``Y'jYfXYih`]W\Yb'Y]b][Y'XYf'G]W\Yf\Y]hgdfcV`YaYž'a]h XYbYb'X]Y'Dc`]nY]'ibX'X]Y'; YaY]bXY'\_cbZfcbh]Yfh'g]bX"'KÀ\fYbX X]Y'GhfU» YbibZÀ``Y'gck]Y'XUg'ibYf`UiVhY'9bhZYfbYb'jca'lbZU``cfh Ub'X]Y'JYf\_Y\fgg]W\Yf\Y]h'UddY``]YfYbž'kYfZYb'X]Y'9fY][b]ggY fibX'ia'XYb'<UZYb':fU[Yb'nia'jYfUbhkcfhib[gjc``Yb'la[Ub[a]h'BchZÀ``Yb'UiZ'

8]Y'Dc`]nY]'fi Zh'U``Y'6Øf[Yf'Ui Zz'g]W\'U\_h]j 'Ub'XYf

JYfVfYW\YbgVY\_Àa dZ b['ni 'VYhY]`][Yb"'<]bk Y]gY'ni 'XYb'cVYb

[YbUbbhYb'JcfZÀ``Yb'\_ObbYb'X]fY\_h'Ub'X]Y'ni ghÀbX][Yb

Dc`]nY]X]YbghghY``Yb'[Y[YVYb'k YfXYb"'+b'6i bXY'YffY]W\Yb'G]Y'X]Y

Dc`]nY]ghUh]cb'i bhYf'XYf'Bi a a Yf'\$(-)'!-&%) &\$"'+b'9a XYb'g]bX

X]Y'ni ghÀbX][Yb'6YUa hYb'i bhYf'XYf'Bi a a Yf'\$(-&%!, -%\$

### 9]b 6`]W\_ Ui Z'X]Y G]W Yf\Y]h ]a 5``hU[

9g'V`Y]Vh'ni `\cZZYbž'XUgg'Xi fW\'X]Y`U\_h]j Yb'9fa ]hh`i b[Yb'i bX'X]Y A ]hk ]f\_i b[ 'XYf'² ZZYbh`]W\\_Y]h'gc`W\Y`J cfZÀ``Y`]b'Ni \_i bZh a ]b]a ]Yfh'k YfXYb'\_ObbYb"'DfÀj Ybh]j Y`A U» bU\a Yb'g]bX YbhgW\Y]XYbXž'i a 'X]Y`G]W\Yf\Y]h'Ui Z'i bgYfYb'GhfU» Yb'i bX']b i bgYfYf'I a [YVi b['ni '[Yk À\f`Y]ghYb"'¾XYf'6Øf[Yf'gd]Y`h'Y]bY Fc``Y`XUf]bž'[YZÀ\f`]W\Y'G]hi Uh]cbYb'ni 'a Y`XYb'i bX'Ui Z'Y]b q]W\YfYg'A ]hY]bUbXYf'ni 'VYghY\Yb"

# I fgUWX Yb i b X 'DfÀj Ybh]cbga U» bU\a Yb 'ZØf J Yf\_Y\fgi b ZÀ``Y

I a 'gc`WXY'JcfZÀ``Y'ni 'j Yfa Y]XYbž'gYhnYb']a a Yf'a Y\f
JYf\_Y\fgYI dYfhYb'Ui Z'dfÀj Ybh]j Y'A U» bU\a Yb"'8Uni '[Y\ÒfYb
5i Z\_`Àfi b[g\_Ua dU[bYbž'X]Y'XUg'6Yk i gghgY]b'ZØf'g]WXYfYg'DUf\_Yb
gWXÀfZYbž'gck]Y'hYWXb]gWXY'@Ògi b[Yb'k]Y'FØW\_ZU\fUgg]ghYbhYb']b
: U\fnYi [Ybž'X]Y'Ui Z'<]bXYfb]ggY'Ui Za Yf\_gUa 'a UWXYb'\_ÒbbYb"
8UfØVYf'\]bUi g'k]fX'Ya dZc\`Ybž']a 'NkY]ZY```]YVYf'Y]bYb'k Y]hYfYb
DUf\_d`Uhn'ni 'gi WXYbž'i a 'X]Y'K U\fgWXY]b`]WX\_Y]h'Y]bYf'?c``]g]cb
ni 'j Yfa]bXYfb"'fE i Y``Y. 'GhUh]gh]gWXYg'6i bXYgUa hŁ

: A``Y'j cb Bch\]`ZYa ]ggVfUi W\']b XYf

; YgY``gWX UZh

8Yf'JcfZU``'jcb'9a XYb'Vf]b[h'Y]bY'VYgcf[b]gYffY[YbXY'H\Ya Uh]\_

ni f'GdfUWXY. '8 Yf'A ]ggVfUi WX 'j cb'Bch\]`ZYa ]hhY`b"' \(\frac{1}{2}\) XYb '`YhnhYb \(\frac{1}{2}\) Uh'XYf'A ]ggVfUi WX 'j cb'FYhhi b[gf]b[Yb'i bX'Ÿ\b`]WXYa 'Ub j YfgWX]YXYbYb'C fhYb'ni [Ybca a Yb"'GhUh]gh]\_Yb'VY`Y[Ybž'XUgg'Yg ]b'ghÀXh]gWXYb'; YV]YhYb'j Yfa Y\fh'Ui Z[YhfYhYb']ghž'k cVY] ]bgVYgcbXYfY']b'XYb'Gca a Yfa cbUhYb'a Y\f'A YbgWXYb'Xi fWX gc`WXYJcfZÀ``Y']b'XYb': c\_i g'XYf'Dc`]nY]'[YfUhYb"'

8]YgY J cfZÀ ``Y nY][ Yb b]W h b i f Y]b a Ub[ Y`b X Yg

J YfUbhk cfhi b[ gVYk i gghgY]b z gcb X Yfb [ YZÀ\fXYb 'Ui W\ X]Y

G]W\ Yf\Y]h Ub X Yf Yf " '9g ']gh V Y \_ Ub b h z X Ugg 'F Yhhi b[ gf]b[ Y 'i b X

Ub X Yf Y 'B ch\] 'ZYa ]hh Y ``Yb hg W\ Y]X Yb X 'gY]b '\_Obb Yb z ii a '@Y V Yb 'ni

f Yhh Yb " K Yb b 'gc `W\ Y 'A ]hh Y ``] ``Y[ ]h a 'j Yfk Yb X Yh 'k Yf X Yb z '\_Obb h Y

X] Yg ']a 'B ch Z U ``` Z Uh U `Y ': c`[ Yb `\ UV Yb "'; Ygi b X \ Y]hg V Y\ Of X Yb 'i b X

F Yhhi b[ gcf[ Ub]g Uh]cb Yb 'f Uh Yb 'X Uni z X] Y 'J Yfk Yb Xi b[ 'j cb

B ch\] `ZYa ]hh Y `b ']b 'X Yf '2 Z Z Yb h`] W\ \_Y]h ini 'g W\ i `Yb 'i b X '\_` Uf Y

6 chg W\ UZh Yb 'Ø V Yf 'X Yf Yb 'Nk Y W\_ 'i b X '6 Y X Yi hi b[ 'ni
 \_ca a i b]n] Yf Yb " 8 ] Y `Dc`]n Y] 'k ]f X 'k Y]h Yf\]b `]b 'X ] Y g Ya '6 Yf Y] W\

Yfa ]hh Y `b z ii a 'k Y]h Yf Y 'J cf Z A``Y 'ni 'j Yf\]b X Yfb 'i b X 'X] Y 'G] W\ Yf\ Y]h

]b 'X Yb 'OZZ Yb h`] W\ Yb '6 Yf Y] W\ Yb 'ni 'Yf\ O\ Yb "'

#### 8]Y'Fc``Y'XYf'Dc`]nY]']b'BchZU``g]hi Uh]cbYb

8]Y'Dc`]nY]'b]a a h']b'BchZU``g]hi Uh]cbYb'Y]bY'YbhgWXY]XYbXY'Fc``YY]bž']bXYa 'g]Y'b]WXh'bi f'X]Y'CfXbi b['Ui ZfYWXhYf\À`hž'gcbXYfbUi WX'U`g'YfghY'5b`Ui ZghY``Y']b'?f]gYbg]hi Uh]cbYb'Zi b[]Yfh"'6Y] JcfZÀ``Yb'k]Y'XYa 'Ghi fn'XYg'A UbbYg'Ua '<UZYbVYW\_Yb'k]fX gcZcfh][Yg'<UbXY`b'[YZcfXYfh"'8]Y'Dc`]nY]'UfVY]hYh'cZh'Yb['a]h FYhhi b[gX]YbghYb'i bX'UbXYfYb'Cf[Ub]gUh]cbYb'ni gUa a Ybž'i aY]bY'gWXbY``Y'i bX'YZZ]n]YbhY'FYU\_h]cb'Ui Z'BchZÀ``Y'ni [YkÀ\f`Y]ghYb"

8 UfØVYf`\]bUi g`]gh'X]Y`Dc`]nY]'Ui W\'ZØf'X]Y`5i Z\_`Àfi b[ 'XYf'6Øf[ Yf ØVYf'G]W\Yf\Y]hga U» bU\a Yb'ni ghÀbX][ "'8]Yg'[ YgW\]Y\h'Xi fW\
K cf\_g\cdgž' \(\frac{1}{2}\)Zcfa Uh]cbga UhYf]U`]Yb'i bX'X]Y'DfÀgYbn']b'gcn]U`Yb
A YX]Yb"'8]Y': ÒfXYfi b[ 'Y]bYg'g]W\YfYb'JYf\U`hYbg'i bX'X]Y
GYbg]V]`]g]Yfi b[ 'XYf'^2 ZZYbh`]W\\_Y]h'g]bX'nYbhfU`Y'6YghUbXhY]`Y'XYf
Dc`]nY]UfVY]h']b'BchZU``g]hi Uh]cbYb"'J]Y`Y'Dc`]nY]X]YbghghY``Yb
V]YhYb'ni XYa 'gdYn]Y``Y'GW\i`i b[ Yb'ZØf'6YUa hY'Ubž'i a 'X]YgY'Ui Z

BchZÀ``Y'VYggYf'j cfni VYfY]hYb'i bX'X]Y'?ccfX]bUh]cb'nk ]gWXYbjYfgWX]YXYbYb'<]`ZgX]YbghYb'ni 'cdh]a ]YfYb"

8 YhU]`g

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