

## K O`ZY ]b GUWX gYb.; YZU\fcXYf ZUgn]b]YfYbXY BUWX VUfb3

K ÒʻZYʻ]bʻGUW gYb.:: U\_hYbʻni fʻDcdi `Uh]cbžʻHYff]hcf]Ybʻi bXʻni 6Y[Y[bib[Ybʻa]hʻX]YgYbʻH]YfYbʻ]bʻXYfʻFY[]cb"'=bZcfa]YfYb G]Yʻg]W `\]Yf°

GUW gYb  $\dot{z}$  8 Yi hgW  $\dot{z}$  1 K  $\dot{o}$  2Y  $\dot{z}$  b X  $\dot{z}$  Y  $\dot{z}$  hgW  $\dot{z}$  8 Yi hgW  $\dot{z}$  b GUW gYb  $\dot{z}$  Y  $\dot{z}$  g  $\dot{z}$  g  $\dot{z}$  g  $\dot{z}$  g  $\dot{z}$  g  $\dot{z}$  y  $\dot{z}$  g  $\dot{z}$  y  $\dot{z}$  g  $\dot{z}$  y  $\dot{z}$  f  $\dot{z}$  y  $\dot{z}$  f  $\dot{z}$  y  $\dot{z}$  f  $\dot{z}$  y  $\dot{z}$  f  $\dot{z}$  g  $\dot{z}$  y  $\dot{z}$  f  $\dot{z}$  y  $\dot{z}$  f  $\dot{z}$  g  $\dot{z}$  y  $\dot{z}$  f  $\dot{z}$  y  $\dot{z}$  f  $\dot{z}$  y  $\dot{z}$  f  $\dot{z}$  f  $\dot{z}$  g  $\dot{z}$  f  $\dot{z}$  f  $\dot{z}$  g  $\dot{z}$  g  $\dot{z}$  g  $\dot{z}$  f  $\dot{z}$  g  $\dot{z}$  g

± BcfXgUW gYb'k i fXYb'YVYbZU``g'g]YVYb'K c`ZghYff]hcf]Yb
bUW [Yk]YgYbž']b'XYbYb'a Y\fYfY'ZcfhdZUbnYbXY'Fi XY```YVYb"'=a
9fn[YV]f[Y'g]bX'nkY]'HYff]hcf]Yb'Xc\_i a Ybh]Yfhž'XUfi bhYf'Y]b
K c`ZgdUUf'i bX'Y]b'bYi Yg'Fi XY`"'9]b'VY\_UbbhYg'Fi XY`ž'XUg
7c`X]hnYf': cfghž'k i fXY'b]Wkh'a Y\f'bUW [Yk]YgYbž'k À\fYbX'XUg
Fi XY``A UggYbY]'Xi fW 'XUg'Fi XY``Dc`YbnhU`'YfgYhnh'k i fXY"'8]Y
Xi fW gW b]hh`]WY'; fÒ» Y'Y]bYg'K c`ZghYff]hcf]i a g']b'8Yi hgW `UbX
VYhfÀ[h'Yhk U'&\$\$'Ei UXfUh\_]`ca YhYf"

## 5\_h]j ]hÀhga i ghYf i b X J Yf \ U`hYb

K ÒʻZYʻ`YVYbʻ]bʻ: Ua ]`]Ybj YfVÀbXYbžʻX]YʻUi gʻY]bYa ʻ9`hYfbdUUfž K YʻdYbʻi bXʻÀ\f`]b[ YbʻVYghY\Yb"'→\fY`DUUfi b[ gnY]hʻ]ghʻ]a : YVfi Ufʻi bXʻA Àfnžʻi bXʻX]YʻHfU[ nY]hʻVYhfÀ[ hʻfi bXʻnk Y]ʻA cbUhY" K ÒʻZYʻnY][ Ybʻj cfni [ gk Y]gYʻXÀa a Yfi b[ g!ʻi bXʻbUWkhU\_h]j Yg JYf\U`hYbžʻ\_ÒbbYbʻg]WXʻYXcWXʻUi WXʻUbʻa YbgWX`]WXYʻ5\_h]j ]hÀhYb UbdUggYb"·8]YʻK U\fgWXY]b`]WX\_Y]hžʻ]bʻGUWXgYbʻY]bYa ʻK c`Zʻni VY[Y[bYbž']gh'gY\f'[Yf]b[ž'XU'K Ò`ZY'A YbgW\Yb'a Y]gh'a Y]XYb"'6Y] Y]bYf'6Y[Y[bib['k]fX'[YfUhYbž'Fi\Y'ni 'VYk U\fYb'ibX'g]W\ `Ub[qUa 'nifØW\_nin]Y\Yb"

<i bXY'gc``hYb']b'K c`Zg[YV]YhYb'Ub[Y`Y]bh'k YfXYbži a '?cbZ]\_hY
ni 'j Yfa Y]XYb"'5i W.'X]Y'5VZU``Ybhgcf[i b['gd]Y`h'Y]bY'k]W\h][Y
Fc``Yži a 'K Ò`ZY'b]W\h'Ubni `cW\_Yb/XUg': ØhhYfb'j cb'K Ò`ZYb'gc``hY
i bVYX]b[h'j Yfa ]YXYb'k YfXYb"'=a '\J\f'&\\$\((\)\)ki fXYb'\&\&\\
GW\UXYbgZ\\)\`Y'Ub'Bi hnh]YfYb'Xi fW\'K Ò`ZY'[Ya Y`XYhž'VY]'XYbYb
]bg[YgUa h'(, \*'H]YfY'[YhÒhYh'ki fXYb"'8YbbcW\'\UVYb'K Ò`ZY'XUg
DchYbn]U`ž'XUg'^2 \_cgmghYa 'ni 'VYY]bZi ggYb"'G]Y'\_\ObbYb
VY]gd]Y`gk Y]gY'Xi fW\'X]Y'\J[X'Ui Z'DZ'UbnYbZfYggYf'XUg
DZ'UbnYbk UW\ghi a 'Z\OfXYfb"</pre>

## K O`ZY']b'8Yi hgWX`UbX'i bX'GUWXgYb

 $8 \ Ug'A \ cb]hcf]b[\ 'XYf'K \ c`ZghYff]hcf]Yb']b'8 \ Yi \ hgWX`UbX'Z]bXYh \\ \'A\ f`]WX 'ghUhh'i bX'k ]fX'j cb'XYb'Y]bnY`bYb'6i bXYg`AbXYfb \\ cf[\ Ub]g]Yfh''8 UVY]'k YfXYb'X]Y'J cf_ca a Yb'i bUV\Ab[\ ][\ 'Yf\ cVYb i bX'j YfÒZZYbh`]WXh'''9]b'nYbhfU`Yg'HfYZZYb']a 'GYdhYa VYfž'i bhYf'XYf @Y]hi b[ 'XYg'6i bXYgUa hg'ZØf'BUhi fgWXi hnž'_ccfX]b]Yfh'X]Y \\ 9f[\ YVb]ggY'ZØf'X]Y'[ YgUa hY'6i bXYgfYdi V`]_'''=a 'A cb]hcf]b['U\f &$&(#&) 'g]bX'(, 'K c`ZghYff]hcf]Yb'VY_Ubbhž'a ]h'(&'Fi XY`bž'& DUUfYb'i bX'('hYff]hcf]U`Yb'9]bnY`h]YfYž'k ]Y'X]Y'8 66K 'Yf'Ài hYfh''$ 

8 ]Y 'J YfhY] i b[ 'XYf'K c`ZghYff]hcf]Yb']gh'Ui Z'XYb'K YVgY]hYb'XYf' 866K 'hfUbgdUfYbh'Y]bgY\VUf"'5\_hi Y``Y'8 UhYb'nY][ Ybž'XUgg'X]Y K Ò`ZY']b'a Y\fYfYb'6i bXYg`ÀbXYfb'k]Y'6UXYb!K ØfhhYa VYf[ ž 6UmYfbž'A YW\_`YbVi f[!J cfdca a Yfbž'F\Y]b`UbX!DZU`nž'GUW\gYbž GW\`Ygk][!<c`ghY]b'i bX'H\Øf]b[Yb'bUW\[Yk]YgYb'k i fXYb"'8]Y HYff]hcf]Yb\_UfhY'k]fX''À\f`]W\'U\_hi U`]g]Yfhž'k cVY]'Ui W\BYi Yfi b[Yb']b'XYb'K c`Zg[YV]YhYb'VYfØW\_g]W\h][h'k YfXYbž'X]Y q]W\'Xi fW\'j YfÀbXYfhY'BUW\kY]qY'Yf[YVYb'\_ObbYb"

8]Y'8]g\_i gg]cb'i a 'XYb'5VgWki gg'j cb'K Ò'ZYb']gh'Ya ch]cbU` Ui Z[Y`UXYb"'CVk c\``gc`WkY'A U» bU\a Yb'gY`hYb'g]bX'i bX i a ZUb[fY]WkY'DfØZi b[Yb'YfZcfXYfbž'\Uh'XYf'9i fcdUfUh']a 8YnYa VYf'&\$&&'XYb'K Y['ZØf'Y]b'gWkÀfZYfYg'J cf[Y\Yb'[Y[Yb  $\label{lem:condition} $$K\ \grave{O}'ZY'[YYVbYh'''5``YfX]b[g']gh'Y]bY'5bdUggib['XYg'9l'!FYWXhgbchk YbX][\check{z}'VYjcf'X]YgY'ŸbXYfib[Yb'ia[YgYhnh'k YfXYb'_<math>\grave{O}$ bbYb''

8 YhU]`g	
JcfZU``	Gcbgh][ Yg
Cfh	GUW gYbž'8 Yi hgW `UbX
EiY``Yb	• k k k "gUYWX g]gWX Y"XY
	• k k k "XVV!k c`Z"XY
	• k k k "XVV!k c`Z"XY

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