

## 8fc[YbXYU`Yf']b::fY]VYf[..'Dc`]nY]'gWX`À[h ni 'i bX'j Yf\UZhYh'Hf]c°



: fY]VYf[ ž'8 Yi hgW `Ub X'!': fY]VYf[ 'ghY\h'\Yi hYž'Ua '+"'\$\']'&\$&) ž
]a '6`]W\_di b\_h'XYf'Dc`]nY]ž'bUW XYa 'Y]b'Hf]c'a i ha U\[\*\]\WYf
8fc[YbXYU`Yf'YbhXYW\_h'k i fXY"'@Ui h'GÀW g]gW Y"XY'ZUbXYb'X]Y
6YUa hYb'X]Y'XfY]'A ÀbbYfž']a '5`hYf'j cb'' %ž'' ('i bX'' - '\$U\fYbž']b
Y]bYa '; YVØgW Ub'XYf'7\Ya b]hnYf'GhfU\[\*\]Y"'8]Y'G]hi Uh]cb'XYi hYhY
Ui Z'\_fi a a Y'; YgW\AZhY'\]b'i bX'ZØ\fhY'ni 'Y]bYf'?cbhfc``Y'Xi fW
X]Y'Dc`]nY]"

6Y] XYf VYfdfØZ b[ 'ghY``hY 'g]W 'gW bY```\YfUi gž XUgg X]Y 'A ÀbbYf b]W ha ]h``YYfYb' < ÀbXYb XUghY\Yb" 8 Yf À`hYghY XYf; fi ddYž Y]b' -! À\f][ Yfž \ UhhY 'a Y\f'U`g '&"' \$\$ '9i fc '6Uf[ Y`X XUVY]ž 'k À\fYbX gY]b'' (! 'À\f][ Yf '? ca d`]nY 'fi bX '+\$; fUa a '7 UbbUV]gž j YfgW ]YXYbY '7`]dhØhW Yb'i bX 'Y]bY : Y]bk UU[ Y ']a '; YdÀW\_`\UhhY"

 $8 ] Yg'k UfYb'_`UfY' + bX]n] Yb'ZØf'Y] bYb'8 fc[YbhfUbgdcfhž'XYfcZZYbg] Wh'] Wh'] Wh'] bXYfh'k YfXYb'gc``hY''$ 

## Dc`]nY]`]WXY'A U» bU\a Yb

A ]h'X]YgYb'9bhXYW\_i b[Yb']b'XYf'<]bhYf\UbX'\UbXY`hYb'X]Y

Dc`]n]ghYb'fUgW\"8]Y'A ÀbbYf'k i fXYb'ni f'K UW\Y'[YVfUW\hž'i a k Y]hYfY'9f\YVi b[Yb'Xi fW\ni ZØ\fYb"'\D'Y]bYf'NY]hž']b'XYf'X]Y

8fc[Yb\_f]a ]bU`]hÀh']b'8Yi hgW\`UbX'Y]b'gYbg]V`Yg'H\Ya U']ghž
\_`ObbYb'gc`W\Y'9]bgÀmY'j ]Y`Y': fU[Yb'Ui Zk YfZYb"'\DgVYgcbXYfY

XUg'5i [Yba Yf\_'Ui Z'FUi gW\[]Zhj Yf[Y\Yb']gh'Xi fW\'X]Y'7UbbUV]g!

HY]``Y[U`]g]Yfi b['Xi fW\Ui g'j YfghÀf\_h'k cfXYb"

9]bY'U\_hi Y``Y'GhUh]gh]\_'XYg'6? 5 'nY][ hž'XUgg'X]Y 
FUi gWX [ ]Zh\_f]a ]bU`]hÀh']bg[ YgUa h'i a '' ( ž&'ı ''[ YgYb\_h'k i fXYž YXcWX'gh]Y [ 'X]Y'NU\``VYgh]a a hYf'8fc[ Yb'k ]Y'?c\_U]b'Yf\YV`]WX 
Ub"'6YgcbXYfg'Ui ZZÀ``][ ']gh'XYf'5bgh]Y[ 'j cb'( %ž\* 'ı 'VY]'bYi Yb 
dgmWXcU\_h]j Yb'GhcZZYb"'9]b'k Y]hYfYg'6Y]gd]Y``ZØf'X]Y'?ca d`YI ]hÀh 
XYf'H\Ya Uh]\_ ž'X]Y'bcWX'j ]Y``8 ]g\_i gg]cbgghcZZ'V]YhYh''

## $F Ø W_V \] W_U i Z X ] Y ? f] a ] b U ] h h h$

8]Y'bYi YghYb'8UhYb'VfYWXYb'a]h'XYa'5``hU[ž']bXYa'g]Y'Y]bY
[Y`Xk YfhY'6Yk Y[ib[']b'XYf'?f]a]bU`]hÀh'XUfghY``Yb"'8]Y
; YgUa h\_f]a]bU`]hÀh'gUb\_'nibÀW\gh'ia''%z+'i ž'k Ug'U`g'Yfaih][YbX
[]`h"; `Y]W\nY]h]['gh]Y['YXcW\'X]Y'; Yk U`h\_f]a]bU`]hÀh'Ui Z'XYb
\OW\ghYb'GhUbX'gY]h'&\$\$+"'8]YgY'K]XYfgdfØW\`]W\\_Y]hYb'XYihYb
XUfUi Z'\]bž'XUgg'hfchn': cfhgW\f]hhY']b'a UbW\Yb'6YfY]W\Yb'UbXYfY
<YfUi qZcfXYfib[Yb'VYqhY\Yb'V`Y]VYb"

 $\label{thm:continuous} $$ \UfhYb'5fVY]hz'X]Y'hU[hA][`]WX'[Y'Y]ghYh'k]fXz'ia 'X]Y'6Øf[Yf'nigWXØhnYb'ibX'UiZni_`AfYbz']gh'XYf'JcfZU``']b': fY]VYf['bif'Y]bkY]hYfYf'6YkY]g'ZØf'X]Y'k]WXh][Y'Fc``Y'XYf'Dc`]nY]']b'XYf; YgY``gWXUZh''$ 

8 YhU]`g	
Cfh	: fY]VYf[ž'8Yi hgWX`UbX
EiY``Yb	• k k k "gUYW\ g]gW\ Y"XY
	• dc`]nY]h]W <u>Y</u> f"W
	• k k k "V_U"XY

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