

## I k Y GhY]a `Y VY[Y]ghYfh UV '>i `] '&\$&) 'a ]h bYi Yf 'Hci f " H]W\_Yhg 'g]W Yfb "



GÒa a YfXUž'8 Yi hgW `Ub X'!'7 ca YXm!: Ubg'Ui Z[YdUggh'' I k Y GhY]a `Yž'XYf'VY`]YVhY'? UVUfYhh]gh'i bX'GW Ui gd]Y`Yf'Ui g'8 fYgXYbž [Y\h'&\$&) 'i bX'&\$&\* 'Ui Z'[fc» Y'Hci fbYY"'6Y\_Ubbh'ZØf'gY]bY gW Ui gd]Y`Yf]gW Yb': À\][\_Y]hYb'i bX'gY]bY'i bj Yfk YW gY`VUfY gÀW g]gW Y'A i bXUfhž'k ]fX'GhY]a `Y'b]W h'bi f'Ui Z'XYf'6Ø\bYž gcbXYfb'Ui W\']a '< YfnYb'gY]bYf': Ubg'ZØf'6Y[Y]ghYfi b['gcf[Yb" K Ug'Yfk UfhYh'XUg'Di V`]\_i a 3'J]Y`'GdU» i bX'h]YZ[fØbX][Y ; YgW ]W hYbž'X]Y'XYf'@UW YfZU\fi b['X]Y'?fcbY'Ui ZgYhnYb"

8]Y'HcifbYY'k]fX'ibhYf'XYa'Achhc'lkY'GhY]a`Y'; Yg]W\Yfh. IbVYeiYa 'ghY\Yb'ibX'X]Y'YfghYb'5iZhf]hhY'Z]bXYb'VYfY]hg'Ua', " \(\dot\)']b'XYf'?i`hif\_]fW\Y'Gh"'\\J\_cV]']b'GhfU`gibX'ghUhh"'Nia 5iZhU\_h'g]bX'X]Y'?UfhYb'VYfY]hg'UigjYf\_UiZhž'k]Y'ikYghY]a`Y"XY VYf]W\hYh"8Yf'5i ZhU\_hUVYbX'k]fX'i a '%-.' \$'I\f'VY[]bbYbž'i bX
XYf'HfYbX'gYhnh'g]W\'Ui W\'Ua 'XUfUi ZZc`[YbXYb'5VYbX']b
DUgYk U`\_'Zcfhž'k c'X]Y'JYfUbghU`hi b[']a '?i `hi fZcfi a '<]ghcf]gW\Yg
I '[YZY]Yfh'k]fX' 'YVYbZU``g'Ui gj Yf\_Ui Zh"

## J]Y`ZÀ`h][Yg'Dfc[fUa a 'i bX'nU\`fY]W\Y 5i Zhf]hhY

8]Y 'Hci f'i a ZUggh'nU\`fY]W\Y'j YfgW\]YXYbY'J YfUbghU`hi b[Yb"
I bhYf'UbXYfYa '[]Vh'Yg'5i Zhf]hhY'i bhYf'XYa 'H]hY` GH9≠A @9°
5\_hi Y`` 'i bX' < ÒfYb'G]Y'Yg'f]YW\Yb3 "': Øf'YXYb'; YgW\a U\_']gh
Yhk Ug'XUVY]°'<]Yf'Y]b', VYfV`]W\_'ØVYf'Y]b][Y'XYf'VYj cfghY\YbXYb
HYfa]bY.

- %, "\$-"&\$&) ž'%-.' \$'l \f' '7f]a a ]hgW\Ui ž'H\YUhYf 7f]a a ]hgW\Ui
- &\$"\$-"&\$&) ž'%-.' \$'l \f''; ch\Už'?i `hi f\Ui g
- &- "%%"&\$&) ž'%-.' \$'l \f' '; f]a a Už'; ; ='A i `XYbhU`\U``Y
- &) "\$%"&\$&\* ž'%\*.\$\$`I \f` 'Ghc``VYf[ ž'6Øf[ Yf[ UfhYb
- \$\*"\$\*"&\$&\*ž'%-.'\$'I\f' '5gW\Yfg`YVYbž'6YghY\cfb\Uig

8]Y'H]W\_YhdfY]gY'ZØf'X]Y'YfghYb'JYfUbghU'hi b[Yb'']Y[Yb'nk]gWXYb (\$'i bX'(\*'9i fc"'<]Yf'nY][h'g]WX'[Ubn'\_`Ufž'XUgg'GhY]a 'Yg'5i Zhf]hhY\cWX']a '?i fg'ghY\Ybž'XYbb'X]Y'BUWXZfU[Y']gh'Ybcfa ž'k Ug'g]WX\Ui WX']b'k Y]hYfYb'Ui gj Yf\_Ui ZhYb'JYfUbghU'hi b[Yb'b]YXYfgWX'À[hžk]Y'bYk g"XY'Uba Yf\_h"

## 8Yf'? Øbgh`Yf'i bX'gY]b'5bgdfi W

 $\label{thm:continuous} 5 \cdot g'YfZU \cdot fYbYf'GWX Ui gd]Y`Yf'i bX'? UVUfYhh]gh' \cdot Uh'I k Y'GhY]a \cdot YY bYb'G'I Ubn'Y][YbYb'Gh]`'Ybhk]W_Y`hž'XYf'] \ b'Ui g'XYf'A UggY \ YfUi g\YVh''6Y_Ubbh'ZØf'gY]bY'=a ]hUh]cbYb'j cb'9f]WX'<cbYW_Yf i bX'gY]bY'K cfhgWX OdZ b[' CghU`[]Y ž'`Y[h'Yf'VYgcbXYfYb'K Yfh Ui Z'gY]bYb'K]YXYfYf_Ybbi b[gk Yfh'' 8]U`Y_h']gh'<Y]a Uh ž'gU[h GhY]a `Y'''9f'a OWXhY'Ui h\Ybh]gWX'V`Y]VYb'i bX'g]WX'b]WXh'j YfghY``Ybž k Ug']\a 'Y]bY'hfYi Y': Ub[Ya Y]bXY'g]WXYfh'''GY]bY gWXUi gd]Y`Yf]gWXYb'K i fnY`b'g]bX'h]YZ']b'qY]bYa '<Y]a Uhcfh$ 

8 fYgXYb 'j YfUb\_Yfhž'k c 'Yf'VYfY]hg ']b 'XYf'fYbca a ]YfhYb 8 fY][ fcgW\YbcdYf 'a ]hk ]f\_hY 'i bX ']b 'j YfgW\]YXYbYb : YfbgY\gYbXi b[ Yb 'k ]Y ' HUhcfh 'i bX ' Dc`]nY]fi Z'%%\$ '[`ÀbnhY"

± XYb '\_ca a Yb XYb '\*J\fYb 'k ]fX 'Yf'Ui W\ 'k Y]hYf\]b 'ZØf

J Ò `\_Yfj YfghÀb X][i b[ 'i b X 'XYb ']b hYf\_i `hi fY``Yb '5 i ghUi gW\ 'ghY\Yb "

A ]h 'gY]b Ya '5 `hYf'9[ c ž 'XYf'?i `hZ][ i f'; Øb h\Yf'N]YgW\ c b[ ž 'hf]ZZh 'Yf

XYb 'B Yfj 'XYf'NY]h i b X 'Vf]b[ h 'X Ug 'Di V`]\_i a 'ni a '@UW\Yb "'? UfhYb

ZØf'j YfgW\ ]YXYb Y '9j Yb hg' \_ObbYb 'Ui Z'D`UhhZc fa Yb 'k ]Y '

fYgYfj ]l "XY 'Yfk cfVYb 'k YfXYb ž 'k cVY] 'XYf'J cfj Yf\_Ui Z'gW\ cb

VY[ cbbYb `\Uh"

K Yf'U`gc']b'XYb'; Ybi gg'Y]bYg'\i a cfj c``Yb'5VYbXg'\_ca a Yb a ÒW\hYž'gc``hY'g]W\'gW\bY``'i a '?UfhYb'VYa Ø\Ybž'XYbb'XYf 5bXfUb[']qh'[UfUbh]Yfh'

8 Y hU]`g	
Cfh	GÒa a YfXUž'8 Yi hgWX`Ub X
EiY``Yb	• k k k "bYk g"XY
	• k k k "i k YghY]a `Y"XY
	• k k k "fYgYfj ]I "XY

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