

## >i VY`i bX'JYf\_Y\fgW\Ucg']b'@Y]dn][. HUi gYbXY'GmfYf'ZY]Yfb'5ggUX!Ghi fn°

HUI gYbXY'GmfYf'ZY]Yfb']b'@Y]dn]['Zf]YX`]WX'5ggUXg'Ghi fnž gcf[Yb'ZØf'JYf\_Y\fgWXUcg/'8Ya c'ghUfhYhY']b'XYf 9]qYbVU\bqhfU»Y"

@Y]dn][ž8Yi hgWX`UbX'!'@Y]dn]['' 5a 'j Yf[Ub[YbYb K cWXYbYbXY'VYVhY'@Y]dn]['j cf': fYi XY'i bX'9a ch]cbž'U`g'Y]b Y]bXfi W\_gj c``Yg'NY]WXYb'XYf' < cZZbi b['i bX': fY]\Y]h'gY]bY'6U\bYb nc["'A Y\f'U`g') \$\$\$ 'A YbgWXYb'j YfgUa a Y`hYb'g]WX'ni 'Y]bYf i bYfk UfhYhYbž'UVYf'\_fUZhj c``Yb'8Ya cbghfUh]cb"'8Yf'; fi bX3'8Yf `Ub[Y'YfgY\bhY'Ghi fn'XYg'gmf]gWXYb'A UWXh\UVYfg'6UgWXUf'U`! 5ggUX'k i fXY'[YZY]Yfh' 'Y]b'9fY][b]gž'XUg'ZØf'j]Y`Y'GmfYf']b'@Y]dn][j cb'[fc» Yf'6YXYi hi b[']gh"'A]h'\$\forall VY\Z': U\bYb'i bX'Y]bYf': `i h'j cb DmfchYWXb]\_VYk Y[hYb'g]WX'X]Y'8Ya cbghfUbhYb'j cb'XYf 9]gYbVU\bghfU» Y'V]g'ni a 'nYbhfU`'[Y`Y[YbYb'5i [i ghi gd`Uhn"'8]Y' 6]`X!NY]hi b['VYf]WXhYhY'VY[Y]ghYfhj cb'XYff'Ui g[Y`UggYbYb Gh]a a i b['i bX'XYb'JYf\_Y\fgVY\]bXYfi b[Ybž'X]Y'V]g']b'XYb'5VYbX'UbXUi YfhYb"

8 c W b W h b i f 'c U'Y GhfU» Y b k UfY b 'NY i [Y X]YgYfa ]hfY]» Y b X Y b Y Y]Yf ]W Y b "8 ]Y '9]gY b V U \ b ghfU» Y ž V Y \_ U b b h ZØf ]\ f Y 'j ]Y Y b gmf]gW Y b ; YgW A ZhY i b X '6]ghfcgž'j Y fk Ub XY 'hY 'g]W ']b X Ug di 'g]YfY b X Y < Y fn 'X]Y gYf '? i b X [Y V i b ["'A]h 5 i hc \_ c f g c g 'n c [Y b 'X]Y A Y b gW Y b 'j c b 'B Y i ghU X h B Y i gW Ob Y ZY `X ']b 'X]Y ' b b Y b ghU X h ž k c 'g]Y gW `]Y » `]W X X Y b '5 i [i ghi gd `U h Y Y f Y]W h Y b "'8]Y Y a c h ] c b U Y K Y `Y Y f Z U g gh Y 'U `Y '6 Y h Y] `][h Y b i b X V f U W h Y 'g c [Uf X Y b 'J Y f \_Y \ f in i a 9 f `]Y [Y b ž k À\ f Y b X '5 i hcg `U i hghU f \_ \ i d Y b X 'X U g '9 b X Y 'Y] b Y f `Y f U V Y ^1 V Y `h Y b "8 Y f `N Y]h d i b \_h X Y f `: Y]Y f `]W \_Y ] h Z ] Y `n i gUa a Y b 'a ] h X Y a 'c \ b Y \ ] b '[Y ZØ ``h Y b 'H f Y] V Y b 'X Y g 'K Y] \ b U W hga U f \_h Y g z 'k U g 'X]Y A Y b [Y 'U b 'A Y b g W Y b '] b 'X Y f ' b b Y b g h U X h b c W Y] b a U `` n i g A h n `] W \ A Y b [Y 'U b 'A Y b g W Y b '] b 'X Y f ' b b Y b g h U X h b c W Y] b a U `` n i g A h n `] W \}

ghY][YfhY"'Hfchn'XYf'A YbgWXYba UggYb'V`]YV'XUg'9j Ybh'Zf]YX`]WX/j]Y`Y'8Ya cbghfUbhYb'XUb\_hYb'XYb'[YXi `X]['U[]YfYbXYbDc`]nY] fÀZhYb"

## 9]b: Ygh:XYf: fY]\Y]h: 'k Y]hYf:[YhfU[Yb:jcb: Ua]`]Yb:ibX: fYibXYb

8]Y'GnYbY'k Uf'[YdfÀ[hij cb': Ua]`]Yb'a]h'U```]\fYb'A]h[`]YXYfbž'X]Y X]Y'[fØb!k Y]»!gWk UfnY': `U[[Y'XYf'I bUV\Àb[][\_Y]h'a]h'Ghc`n hfi [Yb"' K]f'ZY]Yfbž'XUgg'Gmf]Yb'VYZfY]h']ghž 'gU[hY'Y]b'g]Wkh`]Wk VYk Y[hYf'HY]`bY\a Yf"'K À\fYbX'XYf'FYj Y``]Y g': `Ua a Yb'XYb <]a a Y``\Y``Yf`Yi WkhYhYbž'k UfYb'X]Y'5i [Yb'U``Yf'Ui Z'X]Y <c ZZbi b['[Yf]WkhYhž'Ui Z'Y]bY'Zf]YX`]WkYfY'Ni \_i bZh"

## 9]b ghUf\_Yg NY]WXYb [Y[Yb 8Ygdch]ga i g

: Øf'6UgWkUf'U`!5ggUXž'XYf'Gmf]Ybg'GWk]W\_gU``ZØf'&( '\*J\\fY'`Yb\_hYž]gh'X]Yg'XUg'9bXY'Y]bYf'ŸfU"'GY]bY'< YffgWkUZh'VY[Ubb'a]h'XYf , VYfbU\aY'XYf'AUWkhijcb'gY]bYa'JUhYf"'8cWk'X]Y Zcfhk À\fYbXYb'?cbZ]\_hY'ibX'XYf'ibbUWk[]YV][Y'K]XYfghUbX ZØ\fhYb'`YhnhYbX`]Wk'nigY]bYa'Ghifn"'8]YgY'8YacbghfUh]cbYbž X]Y'kY]hY'HY]`Y'9ifcdUg'YffY]WkhYbž'nY]WkbYb'Y]b'6]`X'jcb\_c``Y\_h]jYf'Gc`]XUf]hÀh'ibX'gmaVc`]g]YfYb'X]Y'h]YZg]hnYbXY <cZZbib['UiZ'K]YXYfUiZVUi'ibX'GY`VghVYgh]aaib["

 $\label{lem:continuous} K \ \grave{A} \ fYbX'X]YgYf'HU[\ 'XYg'$$is VY`g'j]Y`Yb'GmfYfb'< cZZbib[\ 'UiZ'Y]bYbbYiYb'5bZUb[\ '[\ ]Vhž'V`Y]Vh'X]Y'6chgWkUZh'_`Uf'ibX'ghUf_. '8Yf'K]``YXYf'A YbgWkYbž': fY]\Y]h'ibX': f]YXYb'ni'ZY]Yfbž']gh'ib[YVfcWkYbibX'k]fX'UiWk']b'XYb'GhfU»Yb'jcb'@Y]dn]['\Yaaib[g`cgUig[Y`YVh'']$ 

8 YhU]`g	
JcfZU``	FY[]cbU`Yg
Cfh	@Y]dn][ž'8YihgW\`UbX

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