

A cfhYb'< Uf_Yh'[YghY\h.' \Rightarrow W\'YVY'a]h DUf_]bgcb' 'a Y]b'hÀ[`]W\Yf'? Ua dZ

A cfhYb'< Uf_Yhž'5!\U!GÀb[Yfž'cZZYbVUfh'gY]bYb'?Ua dZ'[Y[Yb DUf_]bgcb"'9f'gdf]W\h'ØVYf'X]Y'< YfUi gZcfXYfi b[Yb'i bX 6Y\UbX'i b[qa Ò[`]W_Y]hYb"



A Umc '7`]b]WžI G5 ! 'A cfhYb' < Uf_YhžXYf'*)! 'À\f][Y'GÀb[Yf'XYf VYfØ\a hYb'bcfk Y[]gWXYb'DcdVUbX'5!\Už\Uh']b'Y]bYa 'U_hi Y``Yb ♣bhYfj]Yk 'gY]bY'DUf_]bgcb!9f_fUb_i b['ÒZZYbh`]WX'[Ya UWXh''@Ui h Y]bYa '6Yf]WXh'j cb'; U`U'\]Y`h' < Uf_Yh'X]Y'8]U[bcgY'`Ub[Y'NY]h [Y\Y]a ž'Ui g'5b[gh'j cf'XYb'FYU_h]cbYb'gY]bYg'Di V`]_i a g'' ♣b Y]bYa '; YgdfÀWX'a]h'XYa 'bcfk Y[]gWXYb'&i fbU`]ghYb'≯Jb'Ca XU\`gdf]WXh'Yf'ØVYf'X]Y' < YfUi gZcfXYfi b[Ybž'X]Y'X]Y'?fUb_\Y]h'a]h'g]WX Vf]b[h"

8]Y 'DUf_]bgcb!?fUb_\Y]h'YbhghY\h'Xi fW\'XYb'JYf'i gh'j cb 8cdUa]b!dfcXi n]YfYbXYb'NY``Yb']a'; Y\]fb"'8]Yg'ZØ\fh'ni 6YY]bhfÀW\h][i b[Yb'VY]'6Yk Y[i b['i bX'?ca a i b]_Uh]cb'nk]gW\Yb BYi fcbYb"'K Y`hk Y]h'`Y]XYb'a]bXYghYbg'nY\b'A]``]cbYb'A YbgW\Yb $\label{thm:continuous} $$ Ub^X]YgYf^9f_fUb_i b["'< Uf_Yh^VYgWXfY]Vh^gY]bYb^5^`hU['a]h$$ DUf_]bgcb^U^g^ YbX^cgY^5WXhYfVU\bZU\fh ~z^X]Y^gY]bY^-_OfdYf^]WXYb : A\][_Y]hYbz^gY]bYb^GWX^UZ^i bX^gY]b^U^`[Ya Y]bYg^K c\^VYZ]bXYb Yf\YV^]WX^VYY]bZ^i ggh"$

6Y\UbX`ib[ibX CdYfUh]cb

 $8 \ Ub_gY]bYfBYifc`c[]b`8f"`7\f]gh]bU`GibXU``\Uh'< Uf_Yh`Ni[Ub[ni a cXYfbghYf`6Y\UbX`ib[`Ub`XYf`A Umc`7`]b]W]b`XYb`IG5 Yf\U`hYb"`=a <math>\Rightarrow$ b]`&\$&(`ibhYfnc[`Yf`g]W\`Xcfh`Y]bYa bYifcW\]fif[]gW\Yb`9]b[f]\ZZ`VY]`XYa \Rightarrow 'Y_hfcXYb`]b`gY]b`; Y\]fb]a d`Ubh]Yfh`kifXYb"`8]YgY`g]bX`a]h`Y]bYa gW\f]hha UW\YfA\b`]W\Yb`; YfAh'jYfVibXYbZ`XUg`Yg`]\a Yfa \Rightarrow 'Y\gY]bYf'_\OfdYf`]W\Yb`Gma dhca Y`ni `fYXin]YfYb" 9f'd`Ubh`ni XYa `Y]bY`A\b`]W\YC dYfUh]cb`Z\OfX]Y`fYW\hY; Y\]fb\A`ZhY"

 $Hfchn`XYf`<YfUi\ gZcfXYfi\ b[Yb`V`Y]Vh`<Uf_Yh`cdh]a\]gh]gWX`"9f`]gh \\ g]WX`XYf`?ca\ d`]_Uh]cbYb`VYk\ i\ gghž`X]Y`cZh`VY]`DUf_]bgcb!DUh]YbhYb \\ YbhghY\Ybž`k\]Y`Yhk\ U`8 mg_]bYg]Yb`cXYf`<U`hi\ b[\ gghÒfi\ b[\ Yb"`5i\ WX\ VYf]WX\hYh`X]Y`DUf_]bgcb`Gh]Zhi\ b[\ ž`XUgg`j\]Y`Y`6YhfcZZYbY`]a \\ gdÀhYfYb`J\Yf`Ui\ Z`dgmWX\]Uhf]gWXY`?ca\ d`]_Uh]cbYb`Yf`YVYbž\ Y]bgWX\]Y\"`[WX\c'V`i\ n]bUh]cbYb"$

? Øbgh`Yf]gWXY'? Uff]YfY'i bX'dYfgÒb`]WXY 9fZU\fi b[Yb

A cfhYb'< Uf_Yh'k i fXY'%-) - '[YVcfYb'i bX']gh'U`g': fcbha Ubb'j cb'5! \U'VY_Ubbh'[Yk cfXYbž'X]Y'%-, &'[Y[fØbXYh'k i fXYb"'A]h'<]hg'k]Y HU_Y'Cb'AY 'i bX' H\Y'Gi b'5`k Umg'G\]bYg'cb'H"J" 'Yf`Ub[hY'Yf k Y`hk Y]hY'6YfØ\a h\Y]h"'BYVYb'gY]bYf'6UbX_Uff]YfY'\Uh'< Uf_Yh Ui W\'U`g'Gc`c_Øbgh`Yf'[YUfVY]hYh'i bX'nU\`fY]W\Y'5`VYb j YfÒZZYbh`]W\h'''GY]b'YfZc`[fY]W\ghYg'Gc`cU`Vi a 'Ui » Yf\U`V Bcfk Y[Ybgž' Ci h'cZ'A m'< UbXg ž'YffY]W\hY']b'8Yi hgW\`UbX'D`Uhn XfY]"

g]WX ~ Uf_YhighUf_i[Y[YbiAcVV]b["-a \div\fi&\$%) \bu\a \YfiUbiY]bYf 5bh]!AcVV]b[!? UadU[bYihY]`žiX]YijcbiXYfibcfkY[]gWXYb DfYa]Yfa]b]ghYf]bi9fbUiGc`VYf[i]b]h]]YfhikifXY"'9fi\UhiUiWXiY]bYb KY`hfY_cfXiZØfiXYbi`Àb[ghYbi[`Y]WXV`Y]VYbXYbiHcbi]biY]bYai@]YX UiZ[YghY``hžiXYbiYfi&\$\$\$i]biGiaaYfiAcjYXiCbia]hi&\$ž&GY_ibXYbiYffY]WXhY"

<Yi hY 'n]Y\h'Yf'g]W\'Ub'gW\'YW\hYb'HU[Yb']b'gY]b'Gca a Yf\Ui g'Ub
XYf'bcfk Y[]gW\Yb'?ØghY'ni fØW_"'<Uf_Yh'\Uh'Y]bY'6chgW\UZh'Ub
gY]bY': Ubg. `A UW\h'Yi W\'_Y]bY'Gcf[Yb'i a 'a]W\'':]bXYh'\YfUi gž
k Yf']\f'gY]b'k c``h' 'Y]b'DfcnYggž'XYf'YXYb'HU['bYi 'VY[]bbYb
_Ubb" 'GY]bY'dcg]h]j Y'9]bghY``i b['gd]Y[Y`h'g]W\']b'gY]bYa
I a [Ub['a]h'XYf'9f_fUb_i b['k]XYf'i bX'Yfa i h][h'UbXYfYž'X]Y
YVYbZU``g'j cb'DUf_]bgcb'VYhfcZZYb'g]bX"</pre>

8 Y hU]`g	
J c f ZU``	; Ygi bX\Y]hg_f]gY
Cfh	A Umc '7`]b]Wž1 G5
EiY``Yb	• k k k "[U`U"XY
	k k k "`]ZY]bbcfk Um"bYh
	kkk"dUf_]bgcbgh]Zhib["XY

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