

%": 7 A U[XYVi f['ZY]Yfh'VYY]bXfi W_YbXYb GU]gcbghUfh'hfchn'l a VfØWXY

 $8 \ Yf'\%'': 7 \ A \ U[\ XYVi \ f[\ 'ghUfhYh'ghUf_']b'X]Y'GU]gcb'\&\$\&(\check{z}) b [\ YgWX`U[\ Yb'a]h'Y]bYa'\]ghcf]gWXYb'(.\$!G]Y['[\ Y[\ Yb']B\emptysetfbVYf[\ 'hfchn'[\ fc`` Yf'] a ghY``i b[\ Yb'']$

8 Yf'%": 7 'A U[XYVi f['\Uh'Y]bYb'VYY]bXfi W_YbXYb'GU]gcbghUfh']b XYf'&"'6i bXYg`][U'\]b[Y`Y[h'i bX'_Ubb'Ui Z'Y]bYb VYa Yf_Ybgk YfhYb'(.\$!G]Y['[Y[Yb'XYb'%": 7 'B ØfbVYf[ni fØW_V`]W_Yb"'8]YgYg'9f[YVb]g'ghY``h'XYb'\ÒW\ghYb'5i gk Àfhgg]Y[]b'XYf'JYfY]bg[YgW\]W\hY'XYf'@][U'XUf"'Hfchn'XYg ØVYfk À`h][YbXYb'9fZc`[Yg']gh'HfU]bYf'7\f]gh]Ub'H]hn'a]h'Y]b][Yb 5qdY_hYb'bUW\k|Y'j cfi bni Zf]YXYb"

8]Y'6Y[Y[bib['ZUbX']a 'A UI!A cf`cW_!GhUX]cb'j cf'ØVYf'' %"\$\$\$
Ni gWX Ui Yfb 'ghUhh'i bX'VfUWX hY'ZØf'XYb': 7A'['Y]WX'a Y\fYfY
YfZfYi `]WXY'A ca YbhY"' = XYf'YfghYb' < À`ZhY'VfUWX hY'L Uj]Yf
5a UYWX]'X]Y'A U[XYVi f[Yf']b'XYf'&("'A]bi hY']b': Ø\fi b["
K À\fYbX'XYf'nk Y]hYb' < U`VnY]h'nY][hYb'['Y]WX'XfY]
9]bk YWX gY`gd]Y`Yf']\fY'? `UggY'i bX'Yf\Ò\hYb'XUg'9f[YVb]g"'@j Ub
6i fW' 'Yfn]Y`hY']b'XYf'*) "'A]bi hY'gY]b'YfghYg'Hcf'ZØf'XYb'J YfY]bž
[YZc`[h'j cb'5`YI UbXYf'Bc``YbVYf[Yf'f]("'A]bi hYŁ'i bX'D\]`]dd
<YfWXYf']b'XYf'BUWXgd]Y`nY]h'fl \$"Ž&A]bi hYŁ"

BYi ni [Ab[Y gWX `U[Yb gc Zcfh Y]b

9]bY'XYf'GhÀf_Yb'XYg'U_hi Y``Yb'?UXYfg']gh'X]Y'gcZcfh][Y

♣bhY[fUh]cb'XYf'BYi ni [Àb[Y"'Gd]Y`Yf'k]Y'A Ufh]'b'?UUfg'i bX

@i gca VU'A i gcbXU'\UVYb'g]WX'gWXbY``'U`g'GWX`ØggY`gd]Y`Yf
YhUV`]Yfh"'?UUfg'\Uh'VYfY]hg'XfY]'HcfY'Yfn]Y`h'i bX'Y]bYb'k Y]hYfYb
J cf`U[Yb'[Y`Y]ghYhž'k À\fYbX'A i gcbXU'a]h'XfY]'5gg]ghg'YVYbZU``g

Y]b YbhgWXY]XYbXYf: U_hcf']gh" 5i WX A UfW g'A Uh\]gYb \Uhrg]WX]b XYf' \(\dagger \b \) YfhY]X][i b['VYk \(\alpha \) fhi bX 'nY][h: \(\O \) fi b[gei U']h\(\alpha \) hYb" GY]bY '\(\alpha \) ghi b['Z\(\O \) fhY 'XUni \(\tilde \) XUgg 'XYf' j cf\Yf][Y 'GhUa a gd]Y `Yf HcV]Ug' A \(\O \) ``Yf'ni b\(\alpha \) W gh'Ui Z'X]Y '\(\O \) Ub_' j Yfk]YgYb 'k i fXY"

8]Y'BYi ni [Àb[Y'Ui g'XYf'Xf]hhYb'@][U'ghY``Yb'Y]bY'k]W\h][Y JYfghÀf_i b['XUf"'6i fW' ž'XYf'gY]b'YfghYg'Hcf'bYhnhYž'`cVhY'XYb A UbbgW\UZhgni gUa a Yb\U`h'i bX'VYhcbhYž'k]Y'j]Y`': fYi XY'Yg a UW\hž'i bhYf'Y]bYa 'HfU]bYf'ni 'gd]Y`Ybž'XYf'XYb': c_i g'Ui Z'XYb UhhfU_h]j Yb': i » VU````Y[h"'8]YgY'dcg]h]j Y'9]bghY``i b['_ca a h'XYa HYUa 'ni [i hY'i bX'gcf[h'ZØf'Y]bYb'a ch]j]YfYbXYb'Gd]f]h'Ui Z'XYa

GhUa a gd]Y`Yf!5V[Ab[YibXXYfYb'9]bZigg

Hfchn XYg 5V[Ub[g dfca]bYbhYf Gd]Y Yf k]Y @ WU GW i Yfž XYf ni < Yfh\U 6G7 k YW gY hYž c XYf 8 Ub]Y 9 ZUX]ž XYf ni a < Ua Vi f[Yf GJ []b[ž V Y]Vh XYf : 7 A gY]bYa Gd]Y gh] hfYi "7 c UW H]hn \ Uh Yg [YgW UZhž X]Y A UbbgW UZh gc i a ni ghY Ybž X Ugg X]Y Gd]Y YfYbhk]W_ i b[bU hcg k Y]hYf[Y hž k Ug XYa HYUa Ui W]b XYf U_hi Y Yb GU]gcb ni Y]bYa ghfcb[Yb GhUfh j Yf c ZYb \ Uh" 8 Ybbc W []Vh Yg 6 YfY]W Yž X]Y bc W j YfV YggYfh k Yf XYb a ØggYb" \$\div g V Ygcb XYf Y X]Y 7 \ Ub W bj Yfk Yfhi b[]b < Y]a gd]Y Yb gc `hY ØVYf X UW h k Yf XYb"

♣ 'XYf'_ca a YbXYb'@ÀbXYfgd]Y`dUi gY'k]fX'XYf': c_i g'Ui Z'XYf

J YfVYggYfi b['X]YgYf'A Àb[Y```]Y[Yb"'I a '_ØbZh][Y'FØW_gWX`À[Y'ni
j Yfa Y]XYbž'k]Y'Yg']b'XYf'`YhnhYb'GU]gcb'XYf': U```k Ufž'U`g'XUg

HYUa 'bUWX'Y]bYa 'ghUf_Yb'5bZUb['ghUf_'UVZ]Y`ž']gh'Y]bY

gcf[ZÀ`h][Y'5bU`mgY'bchk YbX]["'5a') "'GYdhYa VYf'ghY\h'Y]b

HYghgd]Y``[Y[Yb'XYb'8f]hh`][]ghYb'CgbUVfØW_'Ubž'XUg'ni f
: Ygh][i b['XYf'5V`Ài ZY'VY]hfU[Yb'gc``"

 $\label{thm:continuous} YfghYb `nk Y] `6Y[Y[bi b[Yb `]gh'X]Y `Gh]a \ a i b[`]a `J YfY]b `dcg]h]j \ \check{z} \\ UVYf `X]Y `K Ufbi b[\check{z}'b]WXh'Ui Z'XYb `@cfVYYfYb `Ui gni fi \Ybž']gh \\ U``[Y[Ybk Åfh]["$

8 Y hU] `c

6 Ygi WX Yb 'G]Y 'i bg 'Ui Z. 'b!U["XY