

9\fYbUa h`]W\Y'[Ygi W\h.'JYfghÀf_i b['ZØf GYb]cfYbZfY]nY]hY]bf]W\hi b[Yb']b GdUbXUi

8 Ug 6 Yn]f_gUa h GdUb X Ui j cb 6 Yf`]b ž 5 a h ZØf Gcn]U`Ygž qi Wh'Y\fYbUa h`]W\Y'JYfqhÀf_i b['ZØf'qY]bY GYb]cfYbZfY]nY]hY]bf]W\hi b[Yb"A YbgW\YbžX]Y'[YfbY'Ui Z UbXYfY'ni [Y\Yb'i bX': fYi XY'Ub'Y]bZUW\Yb cf[Ub]qUhcf]qWXYb'5iZ[UVYb'\UVYbž'kYfXYb'XUni 'Yfaih][hž q]WX 'ni 'Yb[U[]YfYb"'8Ug'5b[YVch'fY]WXh'jcb'Ni \OfYbž 9fnÀ\`Yb'i bX'@UWXYb'V]g'ni a '5b`Y]hYb'j cb'<cVVm[fi ddYb ibX:XYf:Cf[Ub]qUh]cbijcb:?UZZYYhUZY`b":9\fYbUah`]WXY < Y`ZYbXY'q]bX'\UZhdZ]W\h!'i bX'i bZU``j Yfq]W\Yfh'i bX'Yf\U`hYb $Y]bY^5iZkUbXgYbhgWAX][ib["^9g^g]bX^-_Y]bY$ GdYn]U`_Ybbhb]gqY'YfZcfXYf`]W\"'6Yn]f_gqhUXhfUh'?Ya dYfh VYhcbh'X]Y'6YXYi hi b['XYq'Y\fYbUa h`]W\Yb'9b[U[Ya Ybhq la '6YfY]W\ GYb]cfYb"'8]YgYg'Vf]b[Y': fYi XY'i bX I bhYfghØhni b['ZØf'X]Y 'GYb]cf]bbYb'i bX'GYb]cfYb'i bX'hfU[Y XUni VY] $\check{z}XUqq^q]Y^q]WX^[Y\setminus \hat{O}fh^ibX^ibhYfqh@hnh^Z@\`Yb"$ $=bhYfYgg]YfhYkYfXYb/Uad\LambdaY``]d/$

 $8 \ Ug'6 \ Yn]f_gUa \ h'GdUb \ XUi 'j \ cb'6 \ Yf']b \ z'5a \ h' \ Z \ f'Gcn]U' \ Yg \ z'gi \ Wh Y \ Yf \ bUa \ h']W \ Y' \ Yfgh \ f_i \ b['Z \ g'g \ g']b \ Y \ GYb]cf \ b \ Zf \ Y]n \ Y]h \ Jbf]W \ hi \ b[Yb''' \ A \ Ybg \ W \ Yb \ z' X]Y'[\ Yfb \ Y' Ui \ Z' Ub \ Yf \ Yf \ ni \ [Y \ Yb'' \ A \ Ybg \ W \ Yb \ z' X]Y'[\ Yfb \ Y' Ui \ Z' Ub \ Yf \ Yb'' \ A \ Ybg \ W \ Yb \ z' X]Y' \ B \ Ug'5b[\ YVch \ Yg' \ Yb'' \ XUni \ Yfa \ i \ h][\ hz''g]W \ ni \ Yb[\ U[\]Yf \ Yb''' \ 8 \ Ug'5b[\ YVch \ Yg' \ Wh'' \ b \ Y' \ g' \ Wh'' \ b \ Y' \ g' \ Yb'' \ Yb'' \ Yb'' \ Yfg]W \ Yfh \ i \ b \ Y' \ Y' \ Yb \ XY'' \ g]b \ X' \ U \ Zhd \ Z' \ W \ h'' \ i \ b \ X'' \ Yf \ U' \ h'' \ b'' \ Sg'' \ g]b \ X' \ U \ Zhd \ Z' \ W' \ A \ X][\ i \ b[\ "'' \ 9g'' \ g]b \ X' \ Yf \ U' \ h'' \ b'' \ Sd \ Yf \ Yf \ Zc \ f \ Yf \ W''' \ W'''$

6Yn]f_gghUXhfUhr?Ya dYfhrVYhcbhrX]Yr6YXYi hi b[rXYg Y\fYbUa hr]WXYbr9b[U[Ya Ybhqr]a r6YfY]WXrGYb]cfYbrr8]YgYq $\label{thm:continuous} $$ Vf]b[Y: fYi XY'i bX'I bhYfghØhni b['ZØf'X]Y'GYb]cf]bbYb'i bX GYb]cfYb'i bX'hfU[Y'XUni 'VY]ž'XUgg'g]Y'g]Wk'[Y\Offii bX i bhYfghØhnh'ZØ\'Yb''-\DhYfYgg]YfhY'k YfXYb'Yfa i h][hž'g]Wk'X]YgYa k]Wkh][Yb'6YfY]Wk'Ubni gWk']Y» Yb'i bX'Y]bYb'dcg]h]j Yb'6Y]hfU['ZØf X]Y'; YgY``gWkUZh'ni '`Y]ghYb''$

: Øf'k Y]hYfY' ±bZcfa Uh]cbYb'i bX'Y]bY'dYfgÒb`]WXY'6YfUhi b[_ÒbbYb'g]WX' ±bhYfYgg]YfhY'Ub': fUi ': ÒfghYf'cXYf': fUi '8Y]W_Y k YbXYb"

9gʻ]ghʻYfa i h][YbX'ni 'gY\Ybž'XUggʻXUgʻ6Yn]f_gUa h'GdUbXUi 'X]Y
6YXYi hi b['XYgʻY\fYbUa h']WXYbʻ9b[U[Ya YbhgʻZØfʻX]Y
; Ya Y]bgWXUZhʻUbYf_Ybbhʻi bX'U_h]j YʻI bhYfghØhni b['ZØfʻX]Y
GYb]cfYbZfY]nY]hY]bf]WXhi b[Ybʻgi WXh"ʿA]hʻX]YgYfʻ\b]h]Uh]j Yʻk]fX'X]Y
J YfVi bXYb\Y]h'i bX'Gc`]XUf]hÀh']bbYf\U`V`XYfʻ; Ya Y]bgWXUZh
[YghÀf_h'i bX'XUgʻK c\`VYZ]bXYbʻXYfʻGYb]cf]bbYbʻi bX'GYb]cfYb
j YfVYqqYfh"

EiY``Y. kkk "VYf`]b"XY

8 Y hU]`a

6Ygi WXYb G]Y i bg Ui Z. a Y]b!VYf`]b bYh