

Gca a YfgU]gcb %\$&). J]YhbUa ``cW_h'a]h Vi bhYb FY]gYb i bX bYi Yb '9f`YVb]ggYb °

9bhXYW_Yb^G]Y^X]Y^VY`]YVhYghYb^FY]gYn]Y`Y^&\$&)^]b^J]YhbUa a]h^bYi Yb^9f`YVb]ggYbž^G]W\Yf\Y]hgh]ddg^i bX VYj cfghY\YbXYb^JYfUbghU`hi b[Yb"



8 U'B Ub [ž'J]Y hb Ua '!'< Yi hY 'VY fY]hY b'g]W\ 'j]Y 'Y 'C fhY 'i bX
I bhY fbY\a Yb'Ui Z'X]Y'Gca a YfgU]gcb'&\$\&\) 'j cfž'i a 'Hci f]ghY b'Y]b
cdh]a U'Yg'9f`YVb]g'ni 'V]YhYb'''@Ui h'J]Y hb Ua "j b'g]bX
GhfUb XUi gZØ[Y'X]Y'Ua '\Ài Z][ghY b'[Ygi W\hYb'FY]gYn]Y`Y']b
J]Yhb Ua "'8]Yg'nY][h'g]W\ 'Ui W\ 'Xi fW\ 'X]Y'8 UhYb'j cb'6cc_]b["Wca ž
X]Y'VY`Y[Ybž'XUgg'nk]gW\Yb'XYa '%"'\idon'b]'i bX'XYa '' %"'\idon'd\'Y\

 $6Y`]YVhY`FY]gYn]Y`Y`]a``\pm `UbX`g]bX`< U`@cb[~ž`7Uh`6Už`GUa~`Gcbž`8UBUb[~ž`B\U`HfUb[~ž`D\i~`Ei~cWi~bX`Ji~b[~`HUi~"`I~a~`XYb~`Hci~f]ghYb~Y]b$

 $\label{thm:local_continuity} $$ VVChni V]YhYbžZØ\fYbX]Y; Ya Y]bXYbnU\fY]WXYTbhYf\U`hib[gU_h]j]hAhYbTibXTbYiY $$ HCif]gaigdfcXi_hYY]b"GcTcf[Ub]g]YfhEiUb[B]b\XYbT<U`cb[!Phif]gaigdfcXi_hYY]b"GcTcf[Ub]g]YfhEiUb[B]b\XYbT<U`cb[!Phif]gaigdfcXi_hYY]YTJYfV]bXib[T<U`cb[!6U]THiT@cb[žkA\fYbX8UBUb[XUgT\hYfbUh]cbU`YTYYfkYf_gZYgh]jU``fB\Rightarrow Eight ShYfbUh]cbU`YTYTY YfkYf_gZYgh]jU``fB\Rightarrow Eight ShYfbUh]cbU`YTYTY YfkYff_gZYgh]jU``fB\Rightarrow Eight ShYfbUh]cbU`YTYTY YfkYfkYff_gZYgh]jU``fB\Right Eight ShYfbUh]cbU`YTYTY YfkYfkYff_gZYgh]jU``fB\Right Eight ShYfbUh]cbU`YTYTY YfkYfkYff_gZYgh]jU``fB\Right FYB\Right ShYfbUh]cbU`YTYTY YfkYfkYff_gZYgh]jU``fB\Right Eight ShYfbUh]cbU`YTYTY YfkYfkYff_gZYgh]jU``fB\Right FYB\Right FYB\Rig$

FØW_Y\fXYfFY]gYViWXib[Yb

 $8]Y `FY]gYV \varnothing fcg `Yfk UfhYb `Y]bYb `5bgh]Y [`XYf']b` ÅbX]gWXYb \\ Hci f]ghYb `i a `%) &$`i `]a `JYf[`Y]WX `ni a `Jcf'U\f'': @7' < chY`g'/FYgcfhg'j YfVYggYfh'X]Y `GYfj]WYei U`]hÀh'Xi fWX `Y]bY' [YgWX`cggYbY K YfhgWX OdZ b [g_YhhY'''J]YhfUj Y``\Uh'i bhYfXYggYb `XUg Gca a YfZOfXYfi b [gdfc [fUa a `; fØbYg'9f`YVb]g' `'9f`YVYb `G]Y `XYb \cWX k Yfh][Yb `Gca a Yf `]bg'@YVYb `[Yfi ZYbž'XUg'j cb'A U]'V]g' $``] &$&) ``Ài Zh''$

6i Wki b[Yb'k YfXYb'ni bY\a YbX']a 'JcfUi g'j cf[Ybca a Ybž'XUVY] YbhgWkY]XYb'g]Wk'*\$i 'XYf'?i bXYbž']\fY'Hci fYb'% &'A cbUhY'j cf FY]gYVY[]bb'ni 'Vi WkYb"'8]Y'J]YhGYbgY'HfUj Y`'7ca dUbm'V]YhYh gdYn]Y``Y'GhfUbXhci fYb'UV'ØVYf'%ž('A]``]cbYb'JB8'dfc'DYfgcb'ZØf; fi ddYb'UV'%\$'DYfgcbYb'Ubž'k À\fYbX'6YghDf]WY'HfUj Y`'7ca dUbm Jcfni [ghci fYbž'k]Y'VY]gd]Y`gk Y]gY'<Ubc]' '8U'BUb['UV'* A]``]cbYb'JB8'dfc'DYfgcbž'Y]bZØ\fh"

A U» bU\a Yb ZØf G]WX Yf\Y]h i bX GYfj]WYei U`]hÀh

8]Y; Ya Y]bXYbi bXiHci f]ga i gi bhYfbY\a YbiYf[fY]ZYb
i a ZUggYbXYiA U» bU\a Ybini f; Yk À\fiY]ghi b[iXYfiG]WXYf\Y]hi bX
GYfj]WYei U`]hÀhik À\fYbXiXYfiGca a YfZYf]Yb"8Ug
Hci f]ga i ga]b]ghYf]i a iZcfXYfhiG]WXYf\Y]hg!i bX
E i U`]hÀhgghUbXUfXgij cbiFY]gY!ii bXi6Y\YfVYf[iib[gi bhYfbY\a Yb"
Ni XYa i[]VhiX]Yij]YhbUa Yg]gWXYiHci f]ga i gVY\ÒfXYiY]b
8c_i a Ybhini fiJYfVYggYfi b[iXYfiG]WXYf\Y]hgj cf_Y\fi b[YbiibX
GYfj]WYei U`]hÀhi\YfUi g"

9]b'k Y]hYfYg'k]W\h][Yg'H\Ya U']gh'XYf'I a k Y`hgW\i hn"'Ei Ub['B]b\ZcfXYfh'X]Y'FYXi n]Yfi b['j cb'9]bk Y[d`Ugh]_']b'XYf'<U`cb[!6i W\hž k À\fYbX']b'8U'BUb['X]Y'G]W\Yf\Y]hga U» bU\a Yb'Ub'XYbGhfÀbXYb'j YfghÀf_h'k i fXYb"'\#\XYf'U_hi Y``YbKYhVYk YfVg`UbXgW\UZh'j cb'Cb`]bY!6i W\i b[Yb']gh'Yg'k]W\h][žXUgg'Hci f]gh]_i bhYfbY\a Yb'bYi Y'DfcXi _hY'Ybhk]W_Y`b'i bX'X]YGYfj]WYei U`]hÀh'ghÀbX]['j YfVYggYfb"

Hcif]ga i ga YggY]b < Ubc]

8]Y + hYfbUh]cbU`Y 'Hcif]gaiga YggY 'J + HA' < Ubc] '&\$&) 'gd]Y`h'Y]bY nYbhfU`Y 'Fc``Yž']bXYa'g]Y 'FY]gYbXYb'6YfUhib['ni'j YfgW\]YXYbYb Hcif]gaigdfcXi_hYb'V]YhYh'' <]Yf'dfÀgYbh]YfYb'5igghY``Yf'UigU``Yb'?cbh]bYbhYb'Y]b'VfY]hYg'GdY_hfia'Ub'FY]gYUb[YVchYbž'jcb; fiddYbfY]gYb'V]g'\]b'nif' + bX]j]XiU`hcif]gh]_"'8]Y'AYggYZc_igg]Yfh'g]W\UiZ'fY`YjUbhY'H\YaYb'k]Y'8Ygh]bUh]cbYbž5bfY]gYaÒ[`]W_Y]hYb'ibX'5_h]j]hÀhYb'jcf'Cfh''

8]Y'J]Y'ZU'h'XYf'DfÀgYbhUh]cbgZcfa UhY'fY]W\h'j cb::]'a Yb'i bX
J cfhfÀ[Yb'V]g'\]b'ni '? UhU'c[Yb'i bX'\Dcfa Uh]cbgVfcgW\ØfYb"
5i gghY``Yfž'XUfi bhYf'FY]gYj YfUbghU`hYfž'<chY``Yf]YVYhf]YVY'i bX
:`i [[YgY``gW\UZhYbž'g]bX'VYghfYVhž']\fY'5b[YVchY']b'Ui ZZÀ``][Yf
K Y]gY'ni 'dfÀgYbh]YfYbž'cZh'i bhYf'Bi mi b['j cb'BUh]cbU`ZUfVYb
i bX``c_U`Yb'6YgcbXYf\Y]hYb"'6Ygi W\Yf'\UVYb'X]Y'A O[']W_Y]hž
i a ZUggYbXY'\Dcfa Uh]cbYb'\ØVYf'FY]gYXYgh]bUh]cbYb'i bX'XYfYb
5b[YVchY'ni 'Yf\U`hYbž'k Ug'X]Y'A YggY'ni 'Y]bYa 'k]W\h][Yb
9fY][b]g'\Z\Øf'X]Y'Hci f]ga i gVfUbW\Y'a UW\h''8]YgY
J YfUbghU`hi b[Yb'g]bX'\Z\Øf'X]Y'j]Y`gY]h][Y'6Yk YfVi b['i bX
J Yfa Uf_hi b['j cb'FY]gYfY[]cbYb'j cb'[fc\name{*Yf'6YXYi hi b[\ze{x}k]Y}
Ui W\'X]Y'k Y`hk Y]h'[f\One{*O} hY'Hci f]ga i ga YggY\ze{x}]Y'\ \H6'
\DhYfbUh]cbU`Y'Hci f]ga i g'6OfgY ']b'6Yf']b\ze{x}i bX'X]Y' A cgWck
\DhYfbUh]cbU`'HfUj Y''/ 'Hci f]ga 'G\ck'fA\HHL'nY][Yb"

8 Y hU]`g	
Cfh	8UBUb[žJ]YhbUa
Ei Y``Yb	• k k k "j]Y hb Ua "j b

8 Y hU]`g	
	k k k "a YggYb]bZc"XY

6 Ygi WX Yb 'G]Y 'i bg 'Ui Z. 'Y]bY!fY]gY "XY