HUa dU': `ccX'J]Wh]a g'Gh]``'K U]h]b['Zcf' & A]``]cb'FY`]YZ': i bXg°

HUa dUʻghfi [[`YgʻhcʻX]ghf]Vi hYʻ~ &A `fY`]YZʻZcfʻZʻccXʻj]Wh]a g Zfca `\iff]WUbYgʻ<Y`YbYʻUbXʻA]`hcbžʻUgʻW]hmʻWci bWj` XYa UbXgʻi dXUhYg"



HUa dUžI G5 !!BYUf`m'U'mYUf'\Ug'dUggYX'g]bW'`\i ff]WUbYg

<Y`YbY'UbX'A]`hcb'k fYU_YX'\Uj cWcb'HUa dUž'mYh'h\Y'Wca a i b]hm
]g'gh]``'[fUdd`]b['k]h\'h\Y'UZhYfa Uh\ž'k U]h]b['Zcf'a i W\!bYYXYX
`cWJ``fY`]YZ"8Ygd]hY'h\Y'HUa dU'7]hm'7ci bW]`'gYhh]b['Ug]XY'bYUf`m

*&'a]``]cb'Zfca '`YZhcj Yf'Vi X[Yh'Zi bXg'Zcf'Z`ccX'j]Wh]a g''f gh'hk c
a cbh\g'U[cž'h\cgY'Zi bXg'\Uj Y'mYh'hc'VY'X]ghf]Vi hYX"'5g

7ci bW]`a Ub'@]g'J]YfU'dc]bhg'ci hž'a Ubm'fYg]XYbhg'k YfY'XYb]YX
ZYXYfU`'Ugg]ghUbW'Xi Y'hc']bWca Y'h\fYg\c`Xgž'UbX'h\Y'dfYgg]b[
bYYX'Zcf'\Y`d']g'dU`dUV`Y"'7Ufgcb'8cVf]bž'U'`cWJ``fYg]XYbhž'\Ug
g\UfYX'\Yf'ghfi [[`Yg'k]h\'g][b]Z]WUbh'\ca Y'XUa U[Yž''f [[`]b[
a cfh[U[Y'dUma Ybhg'k\]'Y'fYbh]b['Ubch\Yf'd`UWY"

 $HY^7]hmcZHUadU^]bg]ghg^]hg^hU_]b[^U^h\ci[^hZi^UddfcUW]hc$

fY`]YZYZZcfhg":5b'UbU`mg]g']g'i bXYfk Um'hc'Ybgi fY'h\Uh'hUldUmYfacbYm']g'X]ghf]Vi hYX'YZZYWh]j Y`m'UbX'ZU]f`mž'Vi h'h\Y'WcW_']g h]W_]b["'H\Y'Wci bW]`'\Ug'fYei YghYX'U'Zi ```ghUhi g'fYdcfh'cb'h\YX]ghf]Vi h]cb'cZ'h\Y'fY`]YZ'Zi bXg'k]h\]b'%('XUmgž'U'g][bU`'cZ'h\YifYbWm'ZY`h'Vm'a Ubm'UZZYWhYX'fYq]XYbhg"

5 B Y k F Y] Y Z : i b X c b h \ Y < c f] n c b

 $\pm 0.0.7] X.hc.VYhhYf.hUW_Y.h.Y.XYj UghUh]cb.Vfci [\hcb.Vm.h.YgY \hf] WUbYgž.h.Y.HUa dU.7] hm.7ci bW]. \Ug.Uddfcj YX.h.Y.WfYUh]cb.cZ U.XYX] WUhYX.hi ff] WUbY.fY.]YZ.Zi bX.Zcf.fYg] XYbhg...H.]g.Zi bX fYU.c.WUhYg... "&a].]cb.Zfca...h.Y.GhUhY.ci g]b[...\pi]h]Uh]j Y Dfc[fUa...fG< \ple.Zcf.U.W] hmk] XY.X] gUghYf.fY.]YZ.]b]h]Uh]j Y...I bXYf.h.]g dfc[fUa... ž.\ca.Yck.bYfg.UZZYWYX.Vm.<Y.YbY.UbX.A].hcb.k]. \cdot VYbYZ]h Zfca...j Uf]ci g.Zcfa.g.cZ.Ugg] ghUbW... z.]bWi X]b[...d.hc... &$z$$$.Zcf.\ca.Y.fYdU] fg.h.Uh.Wca.d.m.k]h.Vi].X]b[...WcXYg...$

5XX]h]cbU``mž'Y`][]V`Y'\ca Yck bYfg'a Um'fYWY]j Y'Ugg]ghUbW'`Zcf]bgi fUbW'`XYXi Wh]V`Yg i d'hc'` %\$ž\$\$\$]Z'h\Ym'\Uj Y'\ca Y'cf ZccX']bgi fUbW'`UbX'WUb'dfcj Y'U'WU]a "': cf'h\cgY'ghfi [[`]b['hc _YYd'i d'k]h\'h\Y]f'a cfh[U[Y'dUma Ybhgž'h\YfY g'\Y`d'Ug'k Y``ž k]h\'Ub'U``ck UbW''cZ'i d'hc'`) ž\$\$\$ž'dfcj]XYX'h\Y]f'dUma Ybhg'UfY bc'a cfY'h\Ub'' \$'XUmg'cj YfXi Y"'DfY!Udd`]WUh]cb'gWfYYb]b[g'ZcffY`]YZ'Z bXg'UfY'Yl dYWhYX'hc'Wca a YbW''g\cfh`mž'k]h\'XUhYg Ubh]W]dUhYX'Zcf'a]X!A UfW\"

H\Y`Wcaaib]hm`\Ug`YIdfYggYX`XYYd`WcbWYfb`cjYf`h\Y``UW_`cZ YZZYWh]jY`]bZfUghfiWhifYž'k]h\`aUbm`bY][\Vcf\ccXgž'dUfh]W``Uf`m:cfYgh'<]``gž'XYU`]b[`k]h\`giVghUbh]U``XUaU[Y"`7cibW]`aYaVYf J]YfUž'U`Xf]j]b[`ZcfWY`VY\]bX`h\Y`fY`]YZ'ZibX`]b]h]Uh]jYž'bchYX`h\Uh UfcibX`*\$`\caYg`]b`:cfYgh'<]``g`kYfY`ZccXYXž'`YUj]b[`fYg]XYbhg hYadcfUf]`m``]j]b[`]b`\chY`g`cf'g\cfh!hYfa`fYbhU`g"

K]XYf 7cbhYl h cZ < i ff]WUbY FYWcj Yfm

H\Y`]a dUWhg`cZ`\i ff]WUbYg`cb`HUa dU`UfY`bch`]gc`UhYX`Yj Ybhg"`±bZUWhž'<]``gVcfci [\'7ci bhm`\Ug`ZUWYX`U`gYf]Yg`cZ`gYj YfY`k YUh\Yf]bW]XYbhg`cj Yf`h\Y`dUgh`ZYk `mYUfgž`]bWi X]b[`<i ff]WUbY`=XU`]U`]b

@cc_]b['U\YUXž'<]``gVcfci [\'7ci bhm'\Ug'fYWY]j YX'U'g][b]Z]WUbh Vccgh'Zfca 'h\Y'I "G" 8YdUfha Ybh'cZ'<ci g]b['UbX'I fVUb 8Yj Y`cda Ybhž'k]h\'` +\$- ž' &(ž\$\$\$'U``cWUhYX'h\fci [\'h\Y 7ca a i b]hm'8Yj Y`cda Ybh'6`cW_'; fUbh' '8]gUghYf'FYWcj Yfm fl786; !8FŁ'dfc[fUa "'H\]g'gi VghUbh]U``Z bX]b['U]a g'hc'Ugg]gh Wca a i b]h]Yg'k]h\'h\Y'[fYUhYgh'i ba Yh``cb[!hYfa 'fYWcj Yfm'bYYXgž Ybgi f]b['h\Ym'WUb'fYVi]`X'UbX'a]h][UhY'U[U]bgh'Z hi fY'X]gUghYfg"

 $\label{thm:local-continuous} H\Y`Wcibhm`]g`W'ffYbh`m`]b`h\Y`d`Ubb]b[`ghU[Yg`Zcf`h\YgY`Z]bXgžk]h\`cf[Ub]nYfg`gYY_]b[`]bdih`Zfca`fYg]XYbhg`UbX`Wcaaib]hmdUfhbYfg`hc`XYjY`cd`U`WcadfY\Ybg]jY`5Wh]cb`D`Ub`Zcf`YZZYWh]jYZibX`ih]`]nUh]cb"`\dhYfYghYX`fYg]XYbhg`WJb`ghUm`idXUhYX`cbfYWcjYfm`YZZcfhg`UbX`d`Ubb]b[`XYhU]`g`h\fci[\`h\Y`WcibhmgcZZ]W]U``kYVg]hY"$

5g'Zfi ghfUh]cbg'[fck 'Ua cb['HUa dU'fYg]XYbhg'Uk U]h]b['fY`]YZz `cWU```YUXYfg\]d']g'VY]b['WU``YX'hc'YI dYX]hY'UWh]cb'UbX'gi ddcfh h\cgY'k\c'\Uj Y'gi ZZYfYX'gc'[fYUh`m''H\Y'Wca a i b]hm']g'VUbX]b[hc[Yh\Yf'hc'Ybgi fY'h\Uh'dfca]gYg'a UXY'k]``'hfUbg`UhY']bhc hUb[]V`Y'gi ddcfh'Zcf'U```UZZYWhYX'ZUa]`]Yg"

8 Y hU]`g	
Cfh	HUa dUž'l G5
Ei Y``Yb	VUmbYk g- "Wca
	• k k k "k i gZ"cf[
	• \WZ`"[cj

6 Ygi W Yb G]Y i bg Ui Z a Y]b!k]Yb "b Yh