

IEST8001

HYfa 'C bY''##'&\$&%

7ci fgY⁻Cj Yfj]Yk

GHJZ7cbHJWh8YHJ]`g

7cbj Ybcfg

B Ua Y	9a U]`	5j U]`UV]`]m	@cWJhjcb	D\cbY
8f [:] 5`]'K U`_Yf	U"k U`_Yf4 i bgk "YXi "Ui	7 cbgi `HJh]cb Vm Uddc]bha Ybh		

GWXcc``7cbHJWhi±bZcfa Uh]cb

GWkcc`cZ<iaUb]hJYg'UbX'@Ub[iU[Yg

@c\\U||cb. G\\cc``C\\Z|\\\žA\cfj\Yb'6fck\b'6i]\X]b[\z'@\j\Y``&z'&),

CdYb]b['<ci fg. 'A cbXUm'! : f]XUmž - Ua '! ') da

D\cbY.'Ž*%'&'-',)'%*,%

: UI . 'Ž * %'&'-' ,) ', +\$)

9a U]`. '<u>\U`4 i bgk "YXi "Ui</u>

7ci fgY 8YHJ] g

7 fYX]hDc]bhg**

Gi a a UfmcZh\Y 7ci fgY

 $H \setminus [g] \ Wei fgY : cZYfg'mei' h Y'cddefhi b] mihe XYYdYb' UbX'YI dUbX'i deb'h Y'Ybj] feba Ybh'UbX'ge W] YmwW. Ub[Y! a U_]b['_bck YX[Y'mei' \Uj Y'[U]bYX']b' dfYj]ci g'=9GH'Wei fgYg'h fei [\'Udd']YX'YI dYf]Ybh]U`'']b! WebhYI h'YUfb]b['''I g]b[''h Y'ZYI]V]']mcZK cf_'=bhY[fUhYX'@YUfb]b['fK=@E'UhI BGK z'mei'k]`']XYbh]zm'U'dUffbYf cf[Ub]gUh]cb'gi dYfj]gcf'k]h k \ca'mei'bY[ch]UhY'h Y'h Yfa g'UbX'[cU'g'cZmei'f'd`UWYa Ybh''=b'UWWefXUbW' k]h 'K=@de']Whz'''dUffbYf'cf[Ub]gUh]cb''' WUb'' fYZYf'he'h \cgY'YI h YfbU''he'I BGK z'gi W''Ug']bXi ghfm'UbX Wea a i b]mz''Ug'k Y``'Ug'he'I BGK ']hgY'Z''H\Y'dUffbYf'cf[Ub]gUh]cb'gi dYfj]gcf']g'h Y''dYfgeb'Uhih Y''dUffbYf'cf[Ub]gUh]cb'fYgdebg]V'Y'Zef'gi dYfj]g]b['mei''UbX'`]U]g]b['k]h 'h Y' Wei fgY' WecfX]bUhef'': c``ck]b['Uddfcj U'cZmei'f']bhYfbg\]d'cf'dfUW]W a 'Vmh Y' Wei fgY' WecfX]bUhefzmei'k]'`gdYbX'%$)'\ci fg'k cf_]b['k]h 'mei fdUffbYf'cf[Ub]gUh]cb'''H\]g']g'[YbYfU'`mcbY'cf'k c'XUmg'dYf'k YY_'he'Zh'Ufci bX'h Y''%!k YY_'hYfa''$

Mci 'a Umi bXYffU_Y'%&'I c7 'cZdfUWf)W a 'Wci fgYg'VmYbfc``]b[']b'Vch\'=9GH, \$\$%'UbX'=9GH, \$\$' "'H\Y Wci fgYg'a UmVY'HU_Yb'WcbW ffYbhmcf']b'X]ZZYfYbhHyfa g'cZmci f'XY[fYY"

.

7ci fgY @YUfb]b[Ci hWca Yg

%" 8 Yj Y`cd'U'dfcZYgg]cbU`#YgYUfWX'dfcYWh

&" 8 Yg][b UbX]a d Ya YbhUb YZZYWjj Y dfc YWrcf]bhYfbg\]d a UbU[Ya Ybhd Ub

- "8YjY`cd`UbX`Udd`miUddfcdf]UhY`aYh\cXc`c[]Yg`hc`UXXfYgg`h\Y`U]ag`cZh\Y`cf[Ub]gUh]cb`UbX`h\Y]bhYfbg\]d`cf`dfcYWh
- ("7cbXiWh`]WfUhfYfYj]YkghcUXXfYggggdYWZWUdd]WUVYdfUWfWahcd]Wg
-) " 5bU`mqYž']bhYfdfYhz'UbX'fYZYWhi dcb'Z|bX]b[g'UbX'YI dYf]YbWYq
- *"8Y`]j Yf'WcbWi g]cbg'UbX'fYWca a YbXUhcbg'h\fci [\'fYdcfh]b['UbX'cfU`'XY`]j Yfm

HYUWX]b['GhfUhY[]Yg'

 $H\[g'WcifgY']g'XYg][bYX'hc'giddcfhimci']b'Ub'Ybj]fcbaYbhU'']bhYfbg\]d'cf'dfcYWhmci'kci'X'`]_Y'hc'ibXYfhU_Y''$

5ggYgga Ybh

 $\label{thm:local-continuity} H\Y'Zcfa\Uh''Yb[h\z'UbX'gWcdY'cZU'``Ugg][ba\Ybhg']g'Zcf'bY[ch]Uh|cb''VYhk\YYb'mci z'mci f'Wci fgY'Ui h\cf]hmž UbX'mci f'\cghcf[Ub]gUh|cb''A cfY'[i]XUbW'k]```VY'[]j\Yb']b'Wcbgi `hUh|cb'a YYh|b[g'YUf'm]b'h\Y'HYfa 'k]h\mci f'gi dYfj]gcf'UbX'\cghcf[Ub]gUh|cb''$

5ggYgga Ybh'HUg_g

5ggYgga Ybh'hJg_	K Y][\h	8i Y'8UhY	Gh XYbh@YUfb]b[Ci hWca Yg 5ggYggYX
DfUWjW a 'DcfhZc`]c'	%\$\$ı	H67	%ž'&ž'' ž'(ž') ž'*

5ggYgga Ybh'8YhJ]`g

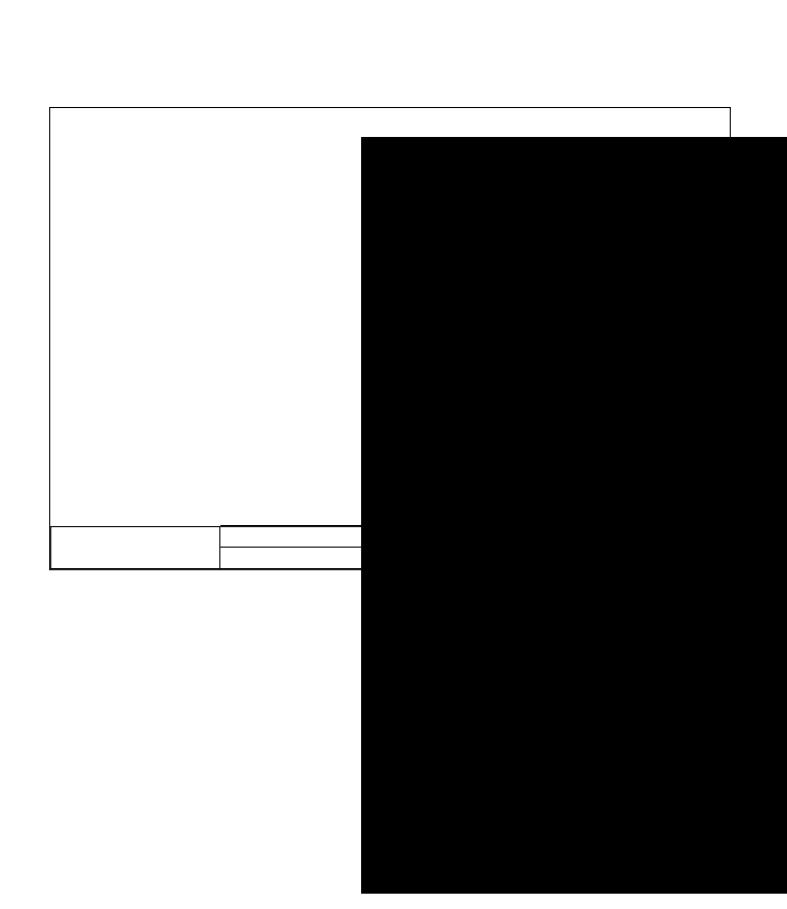
5ggYgga Ybh% DfUWhJW a 'DcfhZc`]c

GhUfh'XUhY. H67

8 YW] g.

A UI]a i a '(\$\$\$'k cfXg

H\Y`dcfhzc`]c`fYei]fYg`gh XYbhg`hc`XcW a Ybh`UbX`fYZYWhi dcb`h\Y]f`dfc^YWhcf`]bhYfbg\]d`UWhj]hJYg"`±i]g i bXYfhU_Yb`h\fci [\`h\Y`hYfa 'UbX`]bWi XYg`\i fX`Y`fYei]fYa Ybhg`cZU`fYgYUfW.`Vf]YZzdfUWhJW a 'X]Ufm`UbX cfU``dfYgYbhUhJcb`cZZJbU``fYdcfh"5```HUg_g`UfY`` i bXYfhU_



FYgci fWfg

DfYgWf]VYX F Ygci fWYg

D`YUgY'gYY'A ccX`Y'Zcf'XYhU]`g"

FYWca a YbXYX FYgci fWYg

D`YUgY`gYY`A ccX`Y`Zcf`XYhU]`g"

7 ci fgY '9j U'i Uh]cb 'UbX '8Yj Y`cda Ybh

Ghi XYbhgʻk]```\Uj Yʻh\Yʻcddcfhi b]hmhcʻdfcj]XYʻ]bZcfa U``ZYYXVUW_'h\fci [\ci hh\YʻhYfa 'UbXʻZcfa U``ZYYXVUW_ Uhh\Y`YbX`cZhYfa 'h\fci [\'h\Y`A m9| dYf]YbWYʻgi fj Ym'

Gi Va]gg]cb cZ5ggYgga YbhHUg_g Hi fb]h]b Gi Va]gg]cb

-Zmci 'YbWci bhYf'U'dfcV`Ya 'k \Yb'UhhYa dh]b['hc'gi Va]hmci f'Ugg][ba Ybhh\fci [\'Hi fb]h]bž'd`YUgY hY`Yd\cbY'9I hYfbU``Gi ddcfhcb'-',)'''' %cf'Ya U]`'h\Ya 'cb'YI hYfbU`hY`hgi ddcfh4 i bgk "YXi "Ui '"'Gi ddcfh

5 WUXYa]W<cbYghmUbX D`U[]Uf]ga

D`U[]Uf]ga i]gii g]b[ih\Yik cfXgicfi]XYUgicZch\YfgiUbXidfYgYbh]b[ih\Ya iUgimci fick b"i=iWUbihU_Yia Ubm Zcfa gžZfca iXYi]VYfUhYiWXYUh]b[ihciUWW]XYbhU`mWcdm]b[iZfca iUigci fWYik]h\ci hiUW_bck iYX[Ya Ybh'i

- i bXYfgfUbX mci f'f][\hg'UbX'fYgdcbg]V]`]hJYg'Ug'U'gh XYbhUhl BGK
- VY`Uk UfY`cZd`U[]Uf]ga ž`Wcdmf][\hz'l BGK `Gh XYbh7cXY`cZ7cbXi WhUbX`5VWWdhUV`Y`l gY`cZ I BGK `=\forall H`F Ygci f\W\g`Dc`]\m\m
- VY 'Uk UfY 'cZh\Y 'ghUbXUfXg 'cZVY\Uj]ci f'Yl dYWYX 'cZYj YfmcbY ']b 'h\Y 'l BGK 'Wca a i b]hm
- `cWUHY 'gYfj]WYg'UbX `]bZcfa UH]cb'UVci hI BGK 'UbX'I BGK '@]VfUfm

Gca Y'cZh\YgY'UfYUg'k]``VY'ZJa]`]Uf'hc'mci ž'ch\Yfg'k]``VY'bYk"'; U]b]b['U'gc`]X'i bXYfgHJbX]b['cZU``h\YfY`UhYX'UgdYWng'cZ9@+69'k]``\Y`d'mci 'a U_Y'h\Y'a cghicZmci f'ghi X]Yg'UhI BGK "'\\hd.##qi VYWfi |XYg"`]VfUfm'i bqk "YXi "Ui #\`]qY#JVci hY`]qY