

ARTS2480

⇒hYfa YX]UhY': fYbW'5

GYa YghYf'C bY''##'&\$%

7ci fgY'Cj Yfj]Yk

GhJZZ7cbhJWh8YhJ]`g`

7cbj Ybcfg

B Ua Y	9a U]`	5j U]`UV]`] m	@cWUhjcb	D\cbY
<i[iyg dyhyfg<="" td=""><td>\"dYhYfg4 i bgk "YXi "Ui</td><td>H∖i fgXUm%' da</td><td>&+) A cfj Yb</td><td>\$&</td></i[iyg>	\"dYhYfg4 i bgk "YXi "Ui	H∖i fgXUm%' da	&+) A cfj Yb	\$&
			6fck b	- ' ,) %((\$

'Hi hcfg'

B Ua Y	9a U]`	5j U]`UV]`]hm	@cWJhjcb	D\cbY
5`YI UbXfU'6Yf`]cn	U"VYf]cn4 i bgk "YXi "Ui	VmUddc]bha Ybh		\$&'-',) &'&%

GW.cc`7cbHJWh ±bZcfa Uhlcb

GWkcc`cZ<iaUb]hJYgUbX@Ub[iU[Yg

@cWUhcb. GWkcc CZZWY ZA cfj Yb 6fck b 6i]X]b[z'@Yj 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>

5 h Y b X U b W F Y e i] f Y a Y b h g

5 'ghi XYbh']g'Yl dYWYX'hc'UhhYbX'U```WUgg'WcbhUWi\ci fg'Zcf'U'ZJWY!hc!ZJWY'fl &: Ł'cf'V`YbXYX'Wci fgY'UbX Wca d`YhY'U```UWYj]hjYg'Zcf'U'V`YbXYX'cf'Z ``mcb`]bY'Wci fgY"

5 'ghi XYbhik \c'Uff]j Yg'a cfY'h\Ub'%) 'a]bi hYg'`UhY'a UmVY'dYbU`]gYX'Zcf'bcb!UhhYbXUbWY'''-Zgi W\'U'dYbU`hm]g']a dcgYXž'h\Y'ghi XYbha i ghVY']bZcfa YX'j YfVU``mUhih\Y'YbX'cZWUgg'UbX'UXj]gYX']b'k f]h]b['k]h\]b'&(\ci fg''

⊒Uʻghi XYbhYl dYf]YbWrgʻ]`bYggža]gUXj Ybhi fYʻcfʻch\YfʻcWW ff\bWrʻh\Uha U_YgʻUVgYbWʻʻZfca ʻU WUgg#UWfj]hmi bUj c]XUV`YžcfʻYl dYWgʻhcʻVYʻUVgYbhZfca ʻUʻZcfh\Wca]b[ˈWUgg#UWfj]hmžh\Ymg\ci `XʻgYY_ dYfa]gg]cbʻZfca ʻh\Yʻ7 ci fgYʻ5i h\cf]hmžʻUbXʻk \YfYʻUdd`]WUV`Yžh\Y]fʻfYei Yghg\ci `X'VYʻUVWca dUb]YXʻVmUb cf][]bUʻʻcfʻVWffjZJYX`WcdmcZUʻa YX]WUʻ`WYffjZJWUhYʻcfʻch\YfʻZcfa ʻcZUddfcdf]UhYʻYj]XYbWY"

5.7 ci fgY '5 i h\cf]hma UmYI W gY 'U'ghi XYbhZfca 'WUggYg'cf'UWjj JhJYg'Zcf'i d'hc'cbY'a cbh\"'< ck Yj Yfž'h\Ym a UmUgg][b'UXX]hJcbU``UbX#cf'U'hYfbUhjj Y'hUg_g'hc'Ybgi fY'Wca d`]UbW"'5'7 ci fgY '5 i h\cf]hmWcbg]XYf]b['h\Y [fUbh]b['cZUVgYbW'a i ghVY'gUhjgZJYX'U'ghi XYbhk]```ghj```VY'UV'Y'hc'a YYhh\Y'Wci fgY'g'`YUfb]b['ci hWca Yg UbX#cf'j c`i a Y'cZ`YUfb]b["'5 'ghi XYbhgYY_]b['Uddfcj U`'hc'VY'UVgYbhZcf'a cfY'h\Ub'cbY'a cbh\'a i ghiUdd`m]b'k f]hJb['hc'h\Y'8YUb'UbX'dfcj]XY'U``cf][]bU`'cf'WfhZYx'gi ddcfhJb['XcW a YbhUh]cb"

cfacfy]bzcfaUfjcbUVcihh\Y'UfhYbXUbWfdfchcWc`g']b'h\Y':UW\`micZ5ffg'UbX'GcWjU`

GWYbWrg. \http://dcfa_Uhcb#dfchcWc\g![i]XY\]bYg#

.

5WUXYa]W±bZcfaUh]cb

: cf`YggYbhJU``ghi XYbh']bZcfa UhJcb`fY`UhJb['hc.`fYei Yghg`Zcf`Yl hYbg]cb/fYj]Yk 'cZa Uf_g/cWW dUhJcbU``\YU`h\
UbX`gUZYhm'Yl Ua]bUhJcb'dfcWYxi fYg/gdYWJU``Wcbg]XYfUhJcb`]b'h\Y'Yj YbhcZ]``bYgg'cf`a]gUXj Ybhi fY/
ghi XYbhYei]hmUbX`X]gUV]`]hm'UbX`ch\Yf`YggYbhJU``UWUXYa]W]bZcfa UhJcbž
qYY`\htdg.#k k k "Ufhq"i bak "YXi "Ui #W ffYbhqhi XYbhq#UWUXYa]W]bZcfa UhJcb#dfchcWc`a![i]XY`]bYa#

7ci fgY 8YW] g

7 fYX]hDc]bhg**

Gi a a UfmcZh\Y 7ci fgY

Gi VYWh5fYU.: fYbWX Gh X]Yg

H\]g`Wci fgY`]g`XYg][bYX`Zcf`ghi XYbhg`k]h\`VUg]W_bck `YX[Y`cZ: fYbW\`Yei]j U`Ybhhc`hk c`gYa YghYfg`cZ ghi Xm]b['h\Y``Ub[i U[Y`Uhi b]j Yfg]m`Yj Y`"K]h\ 'U`Wca a i b]WUhJj Y`UbX`hUg_!VUgYX`UddfcUW\`hc`ZcfY][b`Ub[i U[Y``YUfb]b[žmci `k]```YUfb`hc`Wca a i b]WUhY`]b`g]a d`Y`UbX`fci hJbY`hUg_g`fYei]f]b[`U`g]a d`Y`UbX X]fYWhYI W\Ub[Y`cZ]bZcfa UhJcb`cb`ZJa]`]Uf`UbX`fci hJbY`a UhYfg"`Nci `k]```XYj Y`cd`mci f``]ghYb]b[`UbX

 $\label{thm:condition} $$ \b[i U[Y]b^WcbHYI hithfci [\ga U^*][fci d^k cf_"'HYUW^]b[']g^WcbXi WHYX^]b^*Ub[i U[Y\#Wca di hYf^UVcfUhcf]Yg^h,UhU^*ck^*Zcf^*]ghYb]b['z'kf]h]b['z'fYWcfX]b['z'j]Yk^]b['j]XYc^a UhYf]U^*g^UbX^i g]b['\deltahYfbYhfYgci fWrg"'5'j Uf]YhmcZ^Ub[i U[Y'hUg_g']b^U^*g_]^*g^UfY']a d^Ya YbhYX'Vma YUbg^cZh^]g^hYW.bc^c[m']$$$

±0`UXX]h]cb`hc`h\Y`WUgg`UWhj]h]Ygžghi XYbhg`UfY`YI dYWhYX`hc`Xc`k YY_m[fUa a Uf`YI YfW]gYg`UbX``]ghYb]b[`cf k f]h]b[`YI YfW]gYgžUg`k Y```Ug`fY[i``Uf`df]j UhY`ghi XmUbX`fYj]g]cb`Uh\ca Y`cf`]b`h\Y`a i`h]a YX]U`UfYU" fK YY_mdfUWhW'UbX`fYj]g]cb`k]h\Th\Y`Ui X]c`UbX`j]XYc`a UhYf]U``UWWca dUbm]b[`h\Y`Wci fgY`hYI hVcc_`Ž`h\Y cb`]bY`WcbhYbhcZh\Y`Wci fgYŁ"5`a]b]a i a `cZ(`\ci fg'dYf`k YY_`cZ]bXYdYbXYbhk cf_`]g`YI dYWhYX"`F Y[i`Uf

Gi Va]gg]cb cZ5ggYgga YbhHUg_g

Gh XYbhg UfY Yl dYWYX hc di hh\Y]f bUa Yg UbX gh XYbhbi a VYfg cb Yj YfmdU[Y cZh\Y]f Ugg][ba Ybhg"

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

Imagi YbWci bhYf'U'dfcV'Ya 'k \Yb'UthYa dr]b['rc'gi Va]hmci f'Ugg][ba Ybht\fci [\'Hi fb]r]bž'd'YUgY hY'Yd\cbY'9I hYfbU'Gi ddcfhcb'-',) "''' %cf'Ya U] hYa 'cb'<u>Yl hYfbU'hY'hgi ddcfh4 i bgk "YXi "Ui"</u> "Gi ddcfh \ci fg'UfY', .\$\$Ua '-'%\$.\$\$da 'cb'k YY_XUmg'UbX'-.\$\$Ua '-') .\$\$da 'cb'k YY_YbXg'fl *) 'XUmg'U'mYUft'" Imai UfY'i bUV'Y 'rc'gi Va]hmci f'Ugg][ba YbhXi Y'rc'U'ZJi 'hk]h\ 'Hi fb]h]b'mci 'a UmUdd'mZcf'Ub'YI hYbg]cbž'Vi hmci a i ghfYhJ]b'mci f'h]\W_Yhbi a VYf'Zfca '9I hYfbU''Gi ddcfhfU'cb['k]h\ 'Ubmch\Yf'YYj UbhXcW a Ybhgt'rc]bWi XY'Ug'Yj]XYbW' 'rc'gi ddcfhmci f'Yl hYbg]cb'Udd']\WJhjcb"'Imai 'Ya U]''9I hYfbU''Gi ddcfhmci 'k]'`Ui hca Uh]\WJ'`mfY\W']j Y'U'h]\W_Yhbi a VYfž'Vi h]Zmci 'hY'Yd\cbY'mci 'k]'``bYYX'rc'gdY\WZ\WJ'`mUg_'Zcf'cbY'' Hi fb]h]b'U'gc'dfcj]XYg'i dXUhYg'cb'h\Y]f'gmghYa 'ghUh' g'cb'Hk]hYf"

; YbYfU`mž'UggYgga YbhitUg_g'a i ghVY'gi Va]hhYX'Y`YWfcb]WU``mj]U'Y]h\Yf'Hi fb]h]b'cf'U'A ccX`Y Ugg][ba Ybh''=b']bghUbWfg'k \YfY'h\]g']g'bchdcgg]V`Yž']hk]```VY'ghUhYX'cb'mci f'Wci fgY'g'A ccX`Y'g]hY'k]h\U`hYfbUh]j Y'gi Va]gg]cb'XYhU]`g"

@UhY 5ggYgga Ybh'DYbU`h]Yg

5b'UggYggYX'HUg_']g'XYYa YX``UhY']Z]h']g'gi Va]hhYX'UZhYf'h\Y'gdYW]Z[YX'h]a Y'UbX'XUhY'Ug'gYhci h']b'h\Y Wci fqY'@YUfb]b['A UbU[Ya YbhGmqhYa 'f@A GŁ"

 $\label{thm:condition} $$HY^UHY^dYbU^m]g^hY^cgg^cZ)_L^cZ^hY^hcHU^dcgg]VY^aUf_g^Zcf^hYY^HUg_Z^cf^YUW^XUmcf^dUfhhYfYcZhY^kcf_]g^UHY^@UhYbYgg^k]^*]bW^XY^kYY_YbXg^UbX^di_V^]WYc^]XUmg^"HY]g^XcYg^bchUdd^mhc^U'HUg_'hWh]g^UqqYqqYX^Vi_hbc^aUf_]g^Uk_UfXYX"$$$

K cf_'gi Va]hhYX'Zci fhYYb'fl%(Ł'XUmg'UZhYf'h\Y'Xi Y'XUhY'k]```VY'a Uf_YX'UbX'ZYYXVUW_'dfcj]XYX'Vi hbc'a Uf_ k]```VY'fYWcfXYX"'=Zh\Y'k cf_'k ci `X'\Uj Y'fYWl]j YX'U'dUgg'a Uf_'Vi hZcf'h\Y'`UhYbYgg'UbX'h\Y'k cf_']g'U Wca di `gcfmWci fgY'Wca dcbYbhz'U'gh XYbhk]```VY'XYYa YX'hc'\Uj Y'a Yhh\UhfYei]fYa Ybh''H\]g'XcYg'bch Udd`mhc'U'hUq_'h\Uh]g'UggYggYX'Vi hbc'a Uf_']g'Uk UfXYX"

K cf_'gi Va]hh/X'hk YbhnlcbY'f&&XUmg'UZhYf'h\Y'Xi Y'XUhY'k]```bchVY'UWWdhYX'Zcf'a Uf_]b['cf'ZYYXVUW_UbX'k]```fYWY]j Y'bc'a Uf_'cf'[fUXY"'=Zh\Y'UggYgga YbhHUg_']g'U'Wca di `gcfmWca dcbYbhcZh\Y'Wci fgY'U gh XYbhk]```Ui hca Uh]WU``mZU]`'h\Y'Wci fgY"

GdYWJU`7cbg]XYfUhJcb55dd`]WUhJcbg

 $\label{eq:linear_continuity} $$Mc_i = W_0 - W_$

G]W_bYggža]gUXj Ybhi fY'cf'ch\Yf'W]fW a ghUbWrg'VYmcbX'mci f'Wcbhfc``a Um

ł DfYj Ybhimci Zfca Wca d`Yhlb[U.Wci fqY fYei]fYa Ybhž

ł? YYd mci Zfca 'UthYbX]b['Ub 'UggYggUV`Y 'UWhj]tmž

ł Ghod moi gi Va]hh]b['UggYggUV'Y k cf_ Zcf'U Wci fgYž

ł `G][b]Z]\WbhmUZZY\Wimci f`dYfZcfa Ub\Wr`]b`UggYggUV`Y`k cf_ž`VY`]h'U`Zcfa U``YbX!cZgYa YghYf`Yl Ua]bUh]cbž`U`\WUgg`hYghž`U``UVcfUhcfmihYghž`U`gYa]bUf`dfYgYbhUh]cb`cf`Ubmch\Yf`Zcfa 'cZUggYgga Ybh'

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

D`U[]Uf]ga `]g`i g]b['h\Y`k cfXg`cf`]XYUg`cZch\Yfg`UbX`dfYgYbh]b['h\Ya `Ug`mci f`ck b"'\lefi\Wb'hU_Y`a Ubm Zcfa gžZfca `XY`]VYfUhY`W\YUh]b['hc`UVW]XYbhU`mWcdm]b['Zfca `U`gci f\W' k]h\ci hUW_bck `YX[Ya Ybh'

IBGK [fcidgdu[]uf]ga]bhch\YZc``ck]b[WuhY[cf]Yg.

7 cdm]b[.'i g]b['h\Y'gUa Y'cf'j Yfmg]a]`Uf'k cfXg'hc'h\Y'cf][]bU`hYl h'cf']XYU'k]h\ci h'UW_bck `YX[]b['h\Y gci fW'cf'i g]b['ei chUh]cb'a Uf_g"'H\]g'U`gc'Udd`]Yg'hc']a U[Ygž'Ufh'UbX'XYg][b'dfcYWhgž'Ug'k Y``'Ug dfYgYbhUh]cbg'k \YfY'gca YcbY'dfYgYbhg'Ubch\Yf'g']XYUg'cf'k cfXg'k]h\ci h'WfYX]h'

±DUddfcdf]UhY`dUfUd\fUg]b[.'W\Ub[]b['U'ZYk'kcfXg'UbX'd\fUgYg'k\]`Y`acghmfYhJ]b]b['h\Y`cf][]bU`ghfi WhifY`UbX`]bZcfaUh]cb`k]h\ci hUW_bck`YX[YaYbh'H\]g'U`gc'Udd`]Yg`]b'dfYgYbhUh]cbg'k\YfY`gcaYcbYdUfUd\fUgYg`Ubch\Yf'g`]XYUg`cf'kcfXg'k]h\ci hWfYX]h''±iU`gc'Udd`]Yg`hc'd]YW]b['hc[Yh\Yf'ei chYg'UbXdUfUd\fUgYg`]bhc'U'bYk'k\c`Yžk]h\ci hfYZ/fYbW]b['UbX'U'ghi XYbh'g`ck b'UbU`mg]g`hc'Vf]b['h\Y`aUhYf]U`hc[Yh\Yf''

7 c``i g]cb. 'k cf_]b['k]h\ 'ch\ Yfg'Vi h'dUgg]b['c\Z'h\ Y 'k cf_'Ug'U'dYfgcb'g']b\X]j]\Xi U``k cf_"'7 c``i g]cb'U`gc]b\Wi XYg'dfcj]\X]b['mci f'k cf_'hc'Ubch\ Yf'ghi XYbh\ VYZcfY'h\ Y 'Xi Y 'XUhYzcf'Zcf'h\ Y' di fdcgY'cZh\ Ya d`U[]\Uf]g]b['Uh\Ubmh]a Yz'dUm]b['Ubch\ Yf'dYfgcb'hc'dYfZcfa 'Ub'U\WUXYa]\Wh\Ug_z'ghYU']b['cf'U\\ello i]f]b[Ubch\ Yf'dYfgcb'g' U\WUXYa]\Wk cf_'Ub\X'\ello dm]b[']\ello c\ZYf]b['hc'\\ello a d`YhY'Ubch\ Yf'dYfgcb'g' k cf_'cf'gYY_]b[d\una Ybh\Zcf'\\ello a d`Yh\belo \\ello a d`Yh\ello a d`Yh\belo \\ello a d`Yh\ello a d`Yh\el

±bUddfcdf]UhY`W]hUh]cb.`7]h]b[ˈgci fW/gˈk \]WX`\Uj Y`bchVYYb`fYUXžk]h\ci hUW_bck`YX[]b[ˈh\Y`″gYWcbXUfm″gci fW/Zfca k \]WX`_bck`YX[Y`cZh\Ya`\Ug'VYYb`cVhU]bYX"

8 i d`]\WUh]cb`ff`gY`Zld`U[]\Uf]ga "Ł`gi Va]\h]b[`mci f`ck b`k cf_ž]b`k \c`Y`cf`]b`dUfhžk \YfY`]h`\Ug`dfYj]ci g`m VYYb`dfYdUfYX`cf`gi Va]\hYX`Zcf`Ubch\Yf`UqqYqqa Ybhcf\Wci fgY`UhI_BGK_`cf`Ubch\Yf`i b]\Yfq]\m"

7 cffYWhfYZYfYbWb[dfUWhWyg.

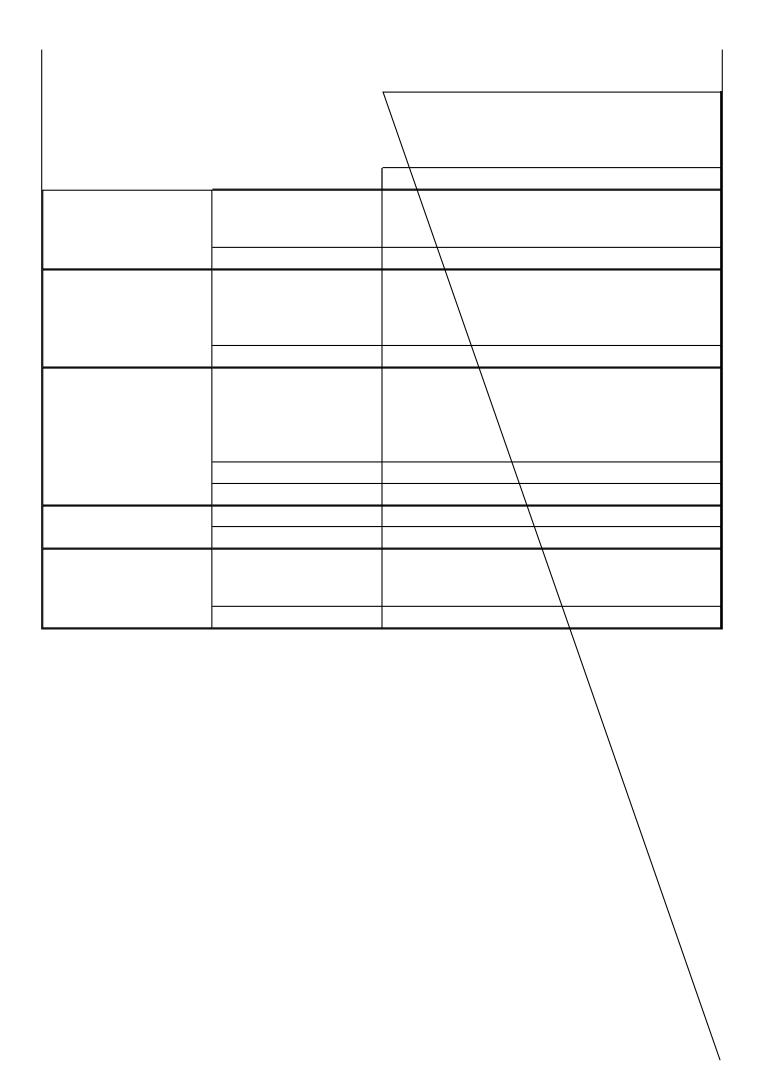
• VYHYfa UbU[Ymcifh]a Y

7ci fgY GW YXi `Y

J]Yk 'WUgg'ha YHUV'Y

H]a YtUV`Y

8 UHY	Hmd Y	7 cbhYbh	
K YY_'%'&*': YVfi Ufm!'(A UfVX	@YWn fY	±blfcXi Wgcb UXa]b]glfUlgj Y	
A OIVW		F Åj]g]cbg [·] XY [·] [fUa a U]fY	
		5ddcfhYn"HchYa "&"fi]j fY"XY""fÅ"Äj Y"YhWU\]Yf	
		XfYI YfVJVWgŁ	
	Hi hcf]U`	6]Ybj Ybi Y	
		5WNjj]hÅg*Wcaaib]WUNjjYg"	
		5ddcfhYn"HchYa "&"f1]j fY"XY"`fÅ:`Äj Y"YhWJ\]Yf XfYl YfWJWYgŁ	
K YY_`&.`) 'A UfVX '! '%% A UfVX	@YWi fY	@Y^jcWUVi`U]fY^Xi^gdcfhYhXY^`U^gUbhå^fJc]f AccX`YŁ"	
		; fUa a U]fY. '@Y 'Z hi f'g]a d`Y"	
	Hi hcf]U`	5 Wj jhåg Wa a i b]WUj Yg	
K YY_" ."&"A UfWX"!"% A UfWX	@YVVi fY	Jcwwyi`wjfy.`@yÃcb`&`Hchya`&`fhyIhyŁ`wcfdg`Yhdyhjng`aUiIžwwigy`Yhivih'	
		; fUa a U]fY. 7 ca a Ybh'ZJ]fY'i bY'gi [[Ygh]cb3	
	Hi hcf]U`	5 Whjj]hÅgʻWcaaib]wUhjjYg	
K YY_'(.'% 'A UfW\'!'&) A UfW\	@YWi fY	J cWUVi `U]fY. @YÃcb (ʿfZ]`a Ł ʿWJbÅa U Yh'Hfi ZZJi h'	
		; fUa a U]fY. '@Yg'dfcbca g'fY`Uh]Zg'g]a d`Yg"	
	Hi hcf]U`	5 Whjj]hÅg Wcaai b]WUhjjYg	
	5ggYgga Ybh	Kf]hhYb'Wcadcg]h]cb'%f&\$i Ł	
K YY_`).`&*`A UfWX'!`% 5df]`	@YWn fY	JcWUVi`U]fY.`@YÃcb`) 'HchYa'&'fj]XÅcŁ']bZcfaUh]eiY Yh]bhYfbYh'	
		; fUa a U]fY. '@Y 'dfÅgYbhYh`U 'ZfÅei YbW\"	
	Hi hcf]U`	BC 'HI HCF =5@CB 'K 99?')	
6fYU'&'5df]`'!', '5df]`			
K YY_'*.'-'5df]`'!'%)'5df]`	@YWi fY	JcWJVi`U]fY.'@YÃcb'*'HchYa'&'fhYI hYŁ'`c[YaYbhg'Yh]hJbÅfU]fY"	
		; fUa a U]fY. @Yg`XY[fÅg`XY`Wta dUfU]gcb"	
	Hi hcf]U`	5 Wj jhåg Wa a i b]Whj Yg	
		VAAA4111V 1.04	
/ \/\/ : :0/*:E -E3:1:00	CA/\AW - FA/	: YYXVUW_'HYgh'%	
K_YY_`+.`%*`5df]``!`&& 5df]`	@YVVi fY	JcWUVi`U]fY.`@YÃcb`, 'HchYa'&fJ]XÅcŁ'7ÐhY`Xf5nif YhA Uh]ggY"	



FYgci fW/g

DfYgWf]VYX F Ygci fWYg

A ">" @cdYgž >"H" @Y 6ci [bYW &\$% ("HchYa &!a Åh\cXY XY ZfUbÃU]g 5 &" < UWXYthY : @9 "

A "'5bh]Yfž'7 "'6f]``Ubhž'G"'9f`]W\ž'A ">"'@cdYgž'>"H"'@Y'6ci [bYW'8\$%("'HchYa'&'!'WU\]Yf`XfWWfj]]hÅg"'<UW\YthY: @9

FYWMaaabXbXYXgEiYgycj fWYg

.

HYZC ck $b[fYWca a YbXYX Vcc_g UfY Uj U] UVY Zfca h\Y 6cc_g \cd.$

 $c\ ^{\text{`C}}\ |\ \textit{ZcfX!}\ <\ UVX\ YMY\ ^{\text{``}}\ fYbVX\ ^{\text{`8}}\]WM]cbUfm'\ ^{\text{``}}\ C\ |\ \textit{ZcfX''}$

.

GYY'A ccX'Y'Zcf'fYWta a YbXYX'k YVg]hYg"

 $c^{-}A^{-}7c^{-}Za^{-}Ub^{-}:fYbWA^{-};fUa^{-}a^{-}Uf^{-}A^{-}W^{-}fUk^{-}!<]$

c F " < Uk _]bg/ F " Hck Y $^{\circ}$ ": fYbW\ ; fUa a Uf UbX I gU[Y " A W fUk! <] $^{\circ}$ "

.

: cfight XYbhgik \cik ci 'X'`]_Yihci\Uj Y'UXX]h]cbU`: fYbVXi[fUa a UfidfUW]WYžk YifYWca a YbX.

c A "'; F 9; C \neq 9 \sharp / 'C "'H<=9J 9B 5 N"'f&\$\$' \!''9 \dS_ _ S[dWbdaYdWee[hWVg XG\) S[e\tilde{e}[hWSg [\frac{1}{2}fWd_ V[S[dW]]] V[S[dW]] DUf]g\tilde{e}[hWVg XG\] X'U'gc Vi m'h\Y'UWWca dUbm\b['Vcc_\Yh'7 cff][\hat{Ag\t}"]

.

: cf'gh' XYbhg'k \c``UW_'WcbZXYbW'']b'XYU`]b['k]h\ '9b[`]g\ '[fUa a Uf\$

H\ '8 nY '

 $\label{eq:continuity} UWW gg]b[\ ^th\ Y\ ^dYfgcbU\ ^]gYX\ ^tk\ YV\ ^]b_^{\cdot j}\]U\ ^th\ Y\ ^A\ ccX\ ^Y\ ^Wci\ fgY\ ^g]hY'''$

∍a U[Y'7fYX]h

GmbYf[]Yg^]b^GcibX^&\$%*

7 F *=*7 C G

7F = 7 C G 'Dfcj]XYf'7cXY. '\$\$\$-,;