

: `U[[Yb'ZØf'XYb': f]YXYb.'GYY`ck Yb[U[]Yfh'g]W\'[Y[Yb'5hcak UZZYb'

5a ', "'\$`]'&\$&) '\]ggYb'GhÀXhY'k Y`hk Y]hž'XUfi bhYf'6Yf`]bg 6Yn]f_Yž': `U[[Yb'XYf'/eich/A Umcfg'Zcf'DYUW/eich/'ZØf bi_`YUfY'5VfØqhib['ibX':f]YXYb"



GYY`ck ž'8 Yi hgWX`Ub X`!`5a `8]YbghU[ž'XYa `, "'*\`]'&\\$\) ž'k YfXYb k Y`hk Y]h'j cf'F Uh\Ài gYfb'X]Y`[fØb!k Y]» Yb': `U[[Yb'XYg]bhYfbUh]cbU`Yb'GhÀXhYVØbXb]ggYg` A Umcfg'Zcf'DYUWY `[Y\]ggh" Fi bX', ") \\$\A]h[`]YXgghÀXhY'gYhnYb'Ub'X]YgYa `HU[`Y]b'NY]WXYb ZØf': f]YXYbž'bi _`YUfY'5VfØghi b['i bX'Zf]YX`]WXYg Ni gUa a Yb`YVYb"'\d=\b'8Yi hgWX`UbX'VYhY]`][Yb'g]WX'Yhk U'*\\$\\$?ca a i bYbž'XUfi bhYf'6Yn]f_Y']b'6Yf`]b'k]Y'DUb_ck ii bX HYa dY`\cZGWX`ObYVYf['gck]Y'X]Y'GhUXh'GYY`ck ']a '@UbX_fY]g A Àf_]gWX!CXYf`UbX"

FcVYfh'B]hnž'XYf'6Øf[Yfa Y]ghYf'jcb'GYY`ckž'\YVh'X]Y'K]W\h][_Y]hX]YgYg'HU[Yg'\Yfjcf'ibX'jYfkY]gh'UiZ'XUg',\$!^\A\f][Y';YXYb_YbUb'XUg'9bXY'XYg'NkY]hYb'KY`h_f]Y[g"'9f'ZcfXYfh'Y]b'_`UfYg

 $\label{eq:continuous_system} $$NY]WXYb^{-}[Y[Yb^{-}Uhca^{-}UfY^{-}K^{-}UZZYb^{-}i^{-}bX^{-}gdf]WXh^{-}ØVYf^{-}X]Y\\ ;YXYb^{-}j^{-}YfUbghU^{-}hi^{-}b[\tilde{z}^{-}X]Y^{-}Ua^{-}%^{*}^{-}5df]^{-}X]YgYg^{-}yJ^{-}fYg^{-}]b^{-}GYY^{-}ck\\ ghUhhZUbX^{-}8Yf^{-}6Øf[Yfa^{-}Y]ghYf^{-}f]h]g]Yfh^{-}X]Y^{-}U^{-}hi^{-}Y^{-}Y^{-}9f^{-}O^{-}i^{-}b[---XYf^{-}a^{-}]hAf]gWXYb^{-}5i^{-}Zf@ghi^{-}b[--i^{-}bX^{-}X]Y^{-}Ub^{-}U^{-}hYbXY^{-};YZU^{-}f^{-}Y]bYg\\ bi^{-}YUfYb^{-}K^{-}Yhhf@ghYbgz^{-}k^{-}]Y^{-}Yg^{-}Ui^{-}W^{-}XUg^{-}GhcW^{-}c^{-}a^{-}+bhYfbUh]cbU^{-}DYUWY^{-}FYgYUfWX^{-}+bgh]hi^{-}hY^{-}cbghUh]Yfh^{-}5^{-}Y^{-}bYi^{-}b^{-}5hca^{-}a^{-}AWX^{-}hY\\ a^{-}cXYfb]g]YfYb^{-}XYfnY]h^{-}Y^{-}5fgYbU^{-}Yz^{-}UbghUhh^{-}Yfbgh^{-}UZh\\ UVni^{-}f@ghYb^{-}$

; `cVU`Y 5i ZfØghi b[i bX 5VfØghi b[gdc`]h]_

 $F \otimes ghi b[g_cbhfc``Y'i bX']bhYfbUh]cbU`YG]WXYfY]h$

@Ui h'Y]bYa '6Yf]WX h'XYf'6i bXYgnYbhfU'Y'ZØf'dc']h]gWXY'6]`Xi b[YfZcfXYfh'X]Y'9f\U'hi b['XYf'bi _`YUfYb'GhUV]`]hÀh'Ui WX']b'Ni _i bZhYZY_h]j Y'?ca a i b]_Uh]cbg_UbÀ`Y'nk]gWXYb'XYb'GhUUhYb''

K À\fYbX'XYf'U_hi Y``Y'GhUhi g'ei c'bUWX'XYf'JYf`Àb[Yfi b['XYgBYk'GH5FH!JYfhfU[g'nk Uf'U`g'9fZc`['[YkYfhYh'kYfXYb'_UbbžV`Y]Vh'X]Y'5i gg]WXh'Ui Z'bYi Y'FØghi b[gjYfhfÀ[Y'nk]gWXYb'XYb'I G5i bX'Fi gg`UbX'dYgg]a]gh]gWX'''+b'XYf'HUh'k]fX'X]Y'A Ò[`]WX_Y]h'Y]bYfjYf\UbX`i b[g'Ògi b['ni f'8YYg_U`Uh]cb'XYf'G]hi Uh]cb']b'XYf I_fU]bY'U`g'_f]h]gWX'Y]b[YgWXÀhnhž'gY`Vgh'kYbb'6YXYb_Yb\]bg]WXh`]WX'XYf'5hca kUZZYbdfc`]ZYfUh]cb'VYghY\Yb''

±0.5bVYhfUW\h'U```X]YgYf': U_hcfYb'k]fX'Yg'ZØf'X]Y'A]h[`]YXYf'j cb A Umcfg'Zcf'DYUW\ i bX'X]Y'Yb[U[]YfhYb'?ca a i bU`dc`]h]_Yf'k]YB]hn'i bX'CbUm'YbhgW\Y]XYbX'gY]bž'XYb'8]U`c['ØVYf'bi_`YUfY5VfØghi b['i bX': f]YXYb'ghYh]['Ui ZfYW\hni Yf\U`hYb"'⇒\fY6Ya Ø\i b[Yb'j YfXYi h`]W\Ybž'XUgg'Uhca UfY'5VfØghi b['i bXZf]YX`]W\Yg'Ni gUa a Yb`YVYb'Ui W\`\Yi hY'bcW\'nYbhfU`Y'H\Ya Ybi bqYfYf'; YgY``qW\UZh'g]bX"

 $\begin{array}{l} K Y]hYfY \stackrel{*}{\to} Zcfa \ Uh]cbYb \stackrel{*}{\to} if? Ua \ dU[\ bY \stackrel{*}{\to} ibX \stackrel{*}{\times} XYb \stackrel{*}{<}]bhYf[\ fØbXYb Yf \ U \stackrel{*}{\to} ifVV & (\ \check{z}^*Zf^*XY \stackrel{*}{\to} bX \stackrel{*}{\to} VdV^*XY \stackrel{*}{\to} \\ \end{array}$

Cfh	GYY`ck ž'8Yi hgWX`UbX	
EiY``Yb	• k k k "fVV&("XY	
	• k k k "Zf"XY	
	• k k k "VdV"XY	

6 Ygi WX Yb 'G]Y 'i bg 'Ui Z. 'a Y]b!VYf`]b "bYh