

< UW_YfUb[f]ZZ'Ui Z'5fWcbU.'< chY`g']b F c ghc W_ i b X F Ø[Y b V Y hf c ZZY b °</pre>



 $FcghcW_{\bar{z}'8Yi} hgWX^{'}UbX^{'}!^{'}8]Y'^{'}chY^{'}[fiddY^{'}5fWcbU'^{'}Uh'Y]bYb \\ gWXkYfk]Y[YbXYb'^{'}cUW_{Y}fUb[f]ZZ'^{'}OZZYbh^{'}]WX^{'}[YaUWXhz^{'}XYf \\ aY^{f}YfY']^{f}Yf^{'}9]bf]WXhib[Yb']b^{'}A]h^{'}]XYbgWXUZh^{'}[Ync[Yb'^{'}Uh'' 6YhfcZZYb^{'}g]bX'XfY]'^{'}chY^{'}gz^{'}XUfibhYf^{'}XUg^{'}J^{'}ibX'^{'}ccdaUbbg^{'}UiZF^{'}[Yb''gck]Y'XUg^{'}<chY^{'}9^{'}Yd^{'}Ubh^{'}]b^{'}KY]aUfz^{'}gck]Y'X]Y^{'}nYbhfU^{'}YJYfkU^{'}hib[']b^{'}FcghcW_{"}^{"}8]YgYf^{'}J^{'}cfZU^{'}kifXY^{'}Ua^{'}k''^{'}AU]^{'}&$$ $Uig[YhfU[Ybz^{'}U^{'}g^{'}X]Y'_{-f}]a]bY^{'}Y^{'}7mVYf!;fiddY^{'}5_]fU^{'}]b^{'}X]YGmghYaY^{'}J^{'}bXfUb["'9IdYfhYb^{'}j^{'}cb^{'}XYf^{'}H!G]WXYf^{'}J^{'}gz]faUFYgdcbgYCbY^{'}UVYb^{'}XYb^{'}J^{'}cfZU^{'}a]hh^{'}YfkY]^{'}Y^{'}ibhYfgiWXhz^{'}ia^{'}X]Y[YbUiYb^{'}aghAbXY^{'}ni^{'}AfYb'']$

8]Y'l fgUW\Yb'XYg'5b[f]ZZg'g]bX'VYgcf[b]gYffY[YbXž'XYbb'X]Y 5b[fY]ZYf'_cbbhYb'Ui Z[fibX'ZY\`Yf\UZhYf'BYhnhfYbbib['nk]gW\Yb XYbʻl bhYfbY\a YbgghUbXcfhYbʻi b[Y\]bXYfhʻU[]YfYb"'9gʻV`Y]Vh YXcW\i b_`Ufžʻk]Yʻ[YbUi '5_]fU']bʻX]YʻGmghYa YʻY]bXf]b[Yb _cbbhY"'@Ui hʻXYa '@UbXYg_f]a]bU`Ua hʻk]fXʻX]YgYfʻ5b[f]ZZʻU`gʻHY]` Y]bYfʻ[fÒ»YfYbʻ6YXfc\i b[ˈ]a 'X][]hU`YbʻFUi a 'UbU`mg]Yfh"

5_]fU. 9]bY k UW gYbXY 6YXfc\i b[

 $5_]fU']gh'gY]h'\&\&\&'']a '8 Uf_bYh'U_h]j''i bX'\Uh'g]W\'gW\bY```Y]bYb \\ B Ua Yb''[Ya UW\hž']bXYa 'g]Y'9fdfYggYfgcZhk UfY'Y]bgYhnhž'i a \\ I bhYfbY\a Yb''i bhYf'8fi W_ni 'gYhnYb'''=a ': U``Y'j cb'5fWcbU'k i fXY \\ VYf]W\'hYhž'XUgg'8 UhYb''[Yghc\`Yb'k i fXYb/X]Y'[YbUi Y'5fh'X]YgYf \\ 8 UhYb']gh'YXcW\'bcW\'i bVY_Ubbh'''5_]fU'\Uh'Y]bY'BÀ\Y'ni \\ Fi gg`UbX'i bX'k]fX'U`g'Y]bY'XYf'ZØbZ'[YZÀ\f`]W\'ghYb'< UW_Yf! ; fi ddYb'k Y`hk Y]h'Ub[YgY\Ybž'a]h'ØVYf'* <math>$ \$'YfZc`[fY]W\Yb 5b[f]ZZYb'Ui Z'_`Y]bY'i bX'a]hhY`[fc>Yil bhYfbY\a Yb''

 $\label{eq:normalize} N]Y`Y`gc`WXYf`5b[f]ZZY`g]bX`b]WXh`bif`:]bUbnXUhYbž`gcbXYfb`UiWX_f]h]gWXY`$\delta Zcfa Uh]cbYbž`X]Y`]b`XYf`\Yih][Yb`X][]hU`Yb`K Y`h'j cb\c\Ya`K Yfh`g]bX"`5fWcbU!7\YZ'5`YIUbXYf`K]bhYf`Ài »YfhY`gY]b6YXUiYfb`ØVYf`X]YgYb`JcfZU```ibX`XUg`a\O[`]WXY`5igaU»`XYg8UhYbUVZ`iggYg"`8]Y`6YXfc\ib[`XifWX`7mVYfUb[f]ZZY`\Uh`g]WXa]hh`YfkY]`Y`U`g`X]Y`[fO`>hY`;YZU\f`ZØf`IbhYfbY\aYb`]b8YihgWX`UbX`YhUV`]Yfhž`k]Y`X]Y`5``]Ubn`F]g_`6UfcaYhYf`&$&)ZYghghY``h"$

7 mV Y f U b [f] ZZY. '9] b Y 'Ni b U \ a Y 'X Y f 6 Y X f c \ i b [

7 mVYf_f]a]bY``Yžk]Y`X]Y`; fi ddY`5_]fUžU[]YfYb`\Ài Z][`À\b`]W\k]Y`I bhYfbY\a Yb`i bX`bi hnYb`Y]b`; YgW\ÀZhga cXY```bUa Ybg FUbgca `Ug`U`GYfj]WY`fFUUGŁ"`8]Yg`VYXYi hYhž`XUgg`g]Y`g]W\`Ui ZXYb`8UhYbgW\i hn`i bX`X]Y`GmghYa Y`j cb`I bhYfbY\a Yb gdYn]U`]g]Yfh`\UVYbž`i a `Xi fW\`[Yn]Y`hY`5b[f]ZZY`Yf\YV`]W\YGi a a Y`ni `YfdfYggYb"`6Yf]W\hYb`ni Zc`[Y`_ÒbbhY`XUg`[YZcfXYfhY@ÒgY[Y`X`ZØf`XYb`5b[f]ZZ'Ui Z`5fWcbU']b`X]Y`<i bXYfhhUi gYbXY[Y\YbžcVk c\``_Y]bY`cZZ]n]Y``Yb`5b[UVYb`X]YgVYnØ[`]W\j cf`]Y[Yb"

8]Y'<YfUi gZcfXYfi b[Yb'ZØf'I bhYfbY\a Yb'k]Y'5fWcbUž'g]W\'[Y[Yb gc`W\Y'5b[f]ZZY'ni k UddbYbž'g]bX'Ybcfa "'G]W\Yf\Y]hghYUa g
_\Aa dZYb'XUa]hž']\fY'\delta!GmghYa Y'ni 'gW\ØhnYbž'XU'5b[fY]ZYf'cZh bi f'Y]bY'GW\k UW\ghY``Y'Ui gbi hnYb'a ØggYb"'8]Y'9]bZØ\fi b['j cb A i `h]!: U_hcf!5i h\Ybh]Z]n]Yfi b['fA:5\delta' bX'X]Y'\delta d`Ya Ybh]Yfi b['YZZY_h]j Yf'G]W\Yf\Y]hgghfUhY[]Yb'g]bX'YbhgW\Y]XYbXž'i a 'gc`W\Y J cfZ\A``Y'ni 'j Yf\]bXYfb"'Ni XYa ']gh'Y]bY'GW\i `i b['XYg G]W\Yf\Y]hgVYk i gghgY]bg']bbYf\U`V'XYf'6Y`Y[gW\UZh'YfZcfXYf`]W\ZXXU'a YbgW\`]W\Y': Y\`Yf'cZh'ni 'G]W\Yf\Y]hgj Yf`Yhni b[Yb'ZØ\fYb"

CVk c\``5fWcbU'i bX'UbXYfY'l bhYfbY\a Yb'XYfnY]h'A U» bU\a Yb ni f'GW\UXYbgVY[fYbni b['Yf[fY]ZYbž'V`Y]Vh'X]Y': fU[Y'cZZYbž'k]Y X]Y'; YZU\fYb']a '7mVYffUi a '`Ub[Zf]gh]['Y]b[YXÀa a h'k YfXYb__\ObbYb'''8]Y'\NY]h'k]fX'\nY][Ybž'k]Y'g]W\X]Y'@U[Y'Ybhk]\W_Y\h'i bX k Y\W\Y'k Y]hYfYb'A U» bU\a Yb'Yf[f]ZZYb'k YfXYb'a ØggYbž'i a 'XUg J YfhfUi Yb']b'X][]hU\Y'; YgW\AZhgdfcnYggY'ni fØ\W_ni [Yk]bbYb''

8]Y'U_hi Y``Yb'9bhk]W_`i b[Yb'i bhYfghfY]W\Yb'X]Y'8f]b[`]W_Y]hž']b7mVYfg]W\Yf\Y]h'ni ']bj Ygh]YfYbž']bgVYgcbXYfY']b'Y]bYf'NY]hž']b'XYf7mVYfj cfZ\``Y'X]Y'[f\overline{O}> hY'6YXfc\i b['Z\Overline{O}f'| bhYfbY\a Yb'XUfghY``Yb"

8 YhU]`g	
J c f ZU``	7mVYf_f]a]bU`]hÀh
I fgUWXY	< UW_YfUb[f]ZZ
Cfh	FcghcW_ž'8YihgW\`UbX
EiY``Yb	• k k k "a cdc"XY
	• k k k %"k Xf"XY
	• k k k "Wca di hYfk YY_`m"Wca

6Ygi WXYb G]Y i bg Ui Z. b!U["bYh