

FcV]b\ccX'ZØ\fh'k]YXYf_Y\fYbXY'?fmdhc! =bjYgh]h]cbYb'Y]b

5b`Y[Yf'_ObbYb?fmdhck À\fi b[Yb'ZØf'bi f'%'I G!8c``Uf'dfc
HU['_Ui ZYb"'FcV]b\ccX'fB5G85E.Ł'\Uh'Ub[Y_ØbX][hž
k]YXYf_Y\fYbXY'?fmdhck À\fi b[g]bj Ygh]h]cbYb'Ui Z'gY]bYf
<UbXY`gd`UhhZcfa 'Y]bni ZØ\fYb"'?Ui ZYb'G]Y'?fmdhc'ZØf'%'I G8
dfc'HU['8]Y':i b_h]cb'Yfa O[`]W\h'Yg'Df]j UhUb`Y[Yfbž'hÀ[`]W\ž
k OW\Ybh`]W\cXYf'a cbUh`]W\?fmdhck À\fi b[Yb'ZØf'bi f'%'I G!
8c``Uf'ni '_Ui ZYb"'8Ug'I bhYfbY\a Yb'bUbbhY'X]Y
A Uf_hj c`Uh]`]hÀh'U`g'; fi bX'ZØf'X]Y'Bi hni b['XYf':i b_h]cbž
k Ug'XUfUi Z'\]bXYi hYhž'XUgg'k]YXYf_Y\fYbXY'=bj Ygh]h]cbYb
XYb'5b`Y[Yfb'\Y`ZYb'_ObbYbž' XYb'GhfYgg'VY]a 'H]a]b['XYf
A Àf_hY'ni 'fYXi n]YfYb 'i bX'`Ub[Zf]gh][Yg'K UW\ghi a 'ni
Yfn]Y`Yb"'FcV]b\ccX'gW\`A[h'Ui W\j cfž'XUgg'6Ybi hnYf'_Y]bY
; YVØ\fYb'nU\`Ybž'k Ug'X]YgY'GhfUhY[]Y'a O[`]W\Yfk Y]gY
dfcZ]hUV`Yf'a UW\h'U`g'UbXYfY'K YVg]hYgž'X]Y'V]g'ni
/ Ua d\Y``]d/

5b`Y[Yf'_ÒbbYb'?fmdhckÀ\fib[Yb'ZØf'bif'%'IG!8c``Uf'dfc'HU[_UiZYb"

 $FcV]b\ccX`fB5G85E.Ł`\Uh`Ub[Y_\emptysetbX][hž'k]YXYf_Y\fYbXY?fmdhck Å\fi b[g]bj Ygh]h]cbYb`Ui Z'gY]bYf'< UbXY`gd`UhhZcfaY]bni Z\emptyset\fYb"$

? Ui ZYb G]Y ? fmd hc ZØf % I G8 dfc HU[

8]Y': i b_h]cb'Yfa $\tilde{O}[\tilde{S}]W$ h'Yg'Df]j UhUb'Y[Yfbž'hÅ[`]W\ž'k $\tilde{O}W$ XYbh`]W\ cXYf'a cbUh`]W\'?fmdhck \tilde{A} fi b[Yb'ZØf'bi f'%'| G!8c``Uf'ni 'Ui ZYb"

8 Ugʻl bhYfbY\a YbʻbUbbhYʻX]YʻA Uf_hj c`Uh]`]hÀhʻU`gʻ; fi bXʻZØfʻX]Y Bi hni b[ˈXYfʻ: i b_h]cbžʻk UgʻXUfUi Zʻ\]bXYi hYhžʻXUgg k]YXYf_Y\fYbXYʻ=bj Ygh]h]cbYbʻXYbʻ5b`Y[Yfbʻ\Y`ZYbʻ_ÒbbYbžʻ XYb GhfYggʻVY]a ʻH]a]b[ʻXYfʻA Àf_hYʻni ʻfYXi n]YfYb ʻi bXʻ`Ub[Zf]gh][Yg K UW\ghi a 'ni ʻYfn]Y`Yb"

FcV]b\ccX'gW\`A[h'Ui W\'j cfž'XUgg'6Ybi hnYf'_Y]bY'; YVØ\fYb nU\`Ybž'k Ug'X]YgY'GhfUhY[]Y'a Ò[`]W\Yfk Y]gY'dfcZ]hUV`Yf'a UW\h'U`g UbXYfY'K YVg]hYgž'X]Y'V]g'ni '(ı '< UbXY`g[YVØ\fYb'Yf\YVYb" FcV]b\ccX'k Y]gh'YXcW\'Ui W\'Ub'UbXYfYf'GhY``Y'XUfUi Z'\]bž'XUgg 5b`Y[Yf'a Ò[`]W\Yfk Y]gY'k Yb][Yf'U`g']\fYb'k]YXYf_Y\fYbXYb 5b`U[YVYhfU['Yf\U`hYbž'i a 'ni a 'GW\i hn'j cf'XfUa Uh]gW\Yb DfY]gVYk Y[i b[Yb'VY]ni hfU[Yb"

 $FcV]b\ccX.V]YhYhgY]hAU]^&$&$^UiW^k]YXYf_Y\fYbXY^5b^U[YbZØf^5_h]Yb^ibX^UbXYfY^hfUX]h]cbY^Y^5b^U[Yb^Ub'']$

$FcV]b \ccX]ghb]WhX]YY]bn][YCdh]cb$

CVk c\``X]Y`bYi Y`: i b_h]cb'j cb'FcV]b\ccX'j]Y``5i Za Yf_gUa _Y]h Ui Z'g]WX`[Ync[Yb'\Uhž']gh'Yg'b]WXh'X]Y'Y]bn][Y'?fmdhc! <UbXY`gd`UhhZcfa ž'X]Y'X]YgY': i b_h]cb'UbV]YhYh'''7c]bVUgY fB5G85E.Łž'; Ya]b]'i bX'6]bUbWY"I G'V]YhYb'X]Y': i b_h]cb'YVYbZU``g Ub"

 $\begin{tabular}{ll} $Vf][Ybg'Z\emptyset\fhY'X]Y'[`cVU`Y'6OfgY'jcb'6]bUbWY'bif'kYb][Y'HU[Y'jcf'XYf'Y][YbYb'5b_\emptysetbX][ib['jcb'FcV]b\ccX'k]YXYf_Y\fYbXY' $$\pm jYgh]h]cbYb'Y]b'' \end{tabular}$

 $FcV]b\ccX'kifXY']b\XYf'JYf[Ub[Yb\Y]h\XUZØf'_f]h]g]Yfhž'XUgg'YgnkUf'XYb'?UiZ'jcb'?fmdhck Å\fib[Yb'Yfa Õ[`]W\hž'Yg'XYb5b`Y[Yfb'YxcW\b]W\h'Yf`UiVhž'X]YgY'JYfa Õ[YbgkYfhY']b':cfajcb'?fmdhck Å\fib['UVni\YVYb'''8]YgY':ib_h]cb'VYZ]bXYh'g]W\Ub[YV`]W\']b'XYf'9bhk]\w_`ib[''$

<UZhi b[gUi ggW\`i gg.: i g]cbga YX]Yb'a \(\hat{O}\W\hY'\G]\Y'XU\fUb\)
Yf]bbYfb\(\tilde{z}\XU\gg'X]Y'\Ui \(ZX\)YgYf'\K \(YV\g]\hY'Y\bh\\U`\hY\bY\b'\B\UhY\b'\b)\\\hat{B}\\hat{U}\hat{B}\\hat{B}\\hat{U}\hat{B}\\hat{B}\\hat{U}\hat{B}\\hat{B}\\hat{B}\\hat{U}\hat{B}\\ha

: i g]cbga YX]Yb'cXYf']f[YbX'Ya UbXž'XYf'Ub': i g]cb'A YX]U
VYhY]`][h']ghž'ØVYfb]a a h'_Y]bY'< UZhi b['ZØf'JYf`i ghY'cXYf
GWAXYbž'X]Y'g]W\'Ui g'XYa 'JYfhfUi Yb'Ui Z'X]Y'Ui Z'X]YgYf'K YVg]hY
Ybh\U`hYbYb' \DZcfa Uh]cbYb'Y]bgW\`]Y»`]W\'8 UhYbž'?i fgYž
8]U[fUa a Y'i bX'? Ui Z!#JYf_Ui Zgg][bU`Y'Yf[YVYb"'6]hhY
]bZcfa]YfYb'G]Y'g]W\'i a ZUggYbX'ØVYf'X]Y'F]g]_Yb'i bX'?cghYbž'X]Y
a]h'XYa '< UbXY`'Ub'XYb':]bUbna Àf_hYb'j YfVi bXYb'g]bXž'XU'Yg
g]W\'i a 'Y]bY'XYf'f]g_UbhYghYb'5b`U[YZcfa Yb'\UbXY`h"'

 $\label{eq:localize} $$ Zi bWh]cbfZvZyZj ZbZhZgEo]ZfZ'ZVeEYhi fb/b1 Z'ZVe1 Zi bWh]cbfEob"WU``A Yh\cX3 $$ b"WU``A Yh\cX"Udd`mfbZUf[ia YbhgEb"eiYiY"dig\fUf[ia YbhgEq/]ZflZ'SZVeEZ'SZVe1 b/b"dig\1 b/b"`cUXYX1 $$/b"jYfg]cb1 f&"$fi/b"eiYiY1 002h1 V"WfYUhY9`Ya YbhfYE/h"UgmbWl $$/h"gfWlj/g1 V"[Yh9`Ya Ybhg6mHU[BUa YfYE0$Q'g"dUfYbhBcXY"]bgYfh6YZcfYfhZgEqfk]bXck Z`XcWia YbhZfigWf]dhfZfi hhdg. $$#WcbbYWh'ZUWYVcc_"bYh$YbSI G$ZVYjYbhg'^gfE/ZVeff]b]hfZfi+) $$%$$, , %*('&), fE/ZVefffhfUW_fZffDU[YJ]YkfE/``$

8 YhU]`a