

FUgUbhY: `i W\h'Y]bYg'JK 'Dc`c': U\fYfg']b <]bhYfk Y]XYbh\U`'YbXYh'a]h': YghbU\a Y

9]b 'VYhfi b_YbYf'i bX'VY_]ZZhYf': U\fYf'fUghY'Ui Z'XYf'6%\$']b <]bhYfk Y]XYbh\U`ž'[YZ\\fXYhY'UbXYfY'i bX'j Yfi fgUW\hY GUW\gW\UXYb"

FUgYf']b'<]bhYfk Y]XYbh\U`.; YZÀ\f`]WXY
JYfZc`[ib[g^U[X'gcf[h'ZØf'5iZgY\Yb']b'XYf; Ya Y]bXY

±0 'XYf'_`Y]bYb'; Ya Y]bXY'<]bhYfk Y]XYbh\U``_Ua 'Yg'Ua
A]hhk cW\a cf[Yb'ni 'Y]bYa 'gW\cW_]YfYbXYb'J cfZU``ž'XYf'X]Y
5bk c\bYf'VYgcf[hY"'9]b'' (!Â\f][Yf': U\fYf'Y]bYg'fchYb'J K 'Dc`c
Ybhnc[Yb'g]W\Y]bYf'J Yf_Y\fg_cbhfc``Y'i bX']b]h]]YfhY'Y]bY'f]g_UbhY
:`i W\hž'X]Y'nU\`fY]W\Y'J Yf_Y\fghY]`bY\a Yf'[YZÀ\fXYhY"'8]Yg'k]fZh
b]W\h'bi f': fU[Yb'ni f'J Yf_Y\fgg]W\Yf\Y]h'Ui Zž'gcbXYfb'gd]Y[Y`h
Ui W\Y]b'[fÒ» YfYg'DfcV`Ya ']a 'I a [Ub['a]h'U`_c\c`]g]YfhYb'i bX
VYfUi gW\hYb': U\fYfb'k]XYf"

9]b f]g_UbhYg A UbÒj Yf Ui Z XYf 6%\$

8]Y'Dc`]nY]'VYUVg]W\h][hYž'XYb:: U\fYf'Ui Z'XYf'6%\\$z']b'< O\Y'XYg@UbX[Ugh\cZYg': fUi YbghY]bz'ni '_cbhfc``]YfYb"'8Yf': U\fYffYU[]YfhY''YXcW\'a]h'Y]bYf': `i W\h']b'F]W\hi b['<Ui YbghY]b" K\A\fYbX'XYf'JYfZc`[i b[g'U[X'kYbXYhY'Yf'aY\fZUW\'i bX'Z]\fhY]`g']b'X]Y'ZU`gW\Y'F]W\hi b[z'kUg'ni '[YZ\f]W\Yb, VYf\c`aUbOjYfb']a'; Y[YbjYf_Y\f'ZØ\fhY"'8UVY]'ghfY]ZhY'Yfgckc\`'Y]b'Ybh[Y[Yb_caaYbXYg'5i hc'U`g'Ui W\'Y]bjcfUi gZU\fYbXYg': U\fnYi [z'kUg'[`ØW_`]W\YfkY]gY'`YX][`]W\'ni GUW\gW\AXYb'ZØ\fhY"

DgmW\cU_h]j Y Gi VghUbnYb]a Gd]Y`

8 Yf 5 hYa U`_c\c`hYgh XYg: U\fYfg Yf[UV Y]bYb K Yfh j cb \$ z* + Dfca]``Yz gck]Y Y]bYb bUW [Yk]YgYbYb ? cbgi a 'j cb 'H < 7 z XYa dgmW cU_h]j Yb '6 YghUb XhY]`'j cb '7 Ubb UV]g" 8]Yg'j YfXYi h`]W h'X]Y ; YZU\fYb z X]Y 'Xi fW 'X]Y ? ca V]bUh]cb 'j cb '5 `_c\c`i bX '8 fc[Yb Ua 'GhYi Yf YbhghY\Yb" 'Gc`W Y 'J cfZh``Y 'YfZcfXYfb 'b]W h'bi f Y]b gW bY``Yg '9]b[fY]ZYb 'XYf 'Dc`]nY]z 'gcb XYfb 'Ui W 'Y]bY 'h]YZYfY 8]g_i gg]cb ']bbYf\U`V 'XYf'; Ya Y]bgW UZh ØVYf 'Gi W hdfcV`Ya Uh]_Yb i bX 'J Yf_Y\fgg]W Yf\Y]h"

Dc`]nY]`]W\Y'A U» bU\a Yb'i bX'fYW\h`]W\Y ? cbgYei YbnYb

5i Z[fi bX'XYf'; YZÀ\fXi b['UbXYfYf'J Yf_Y\fghY]'bY\a Yf'gU\'g]W\
X]Y'Dc`]nY]'[Ynk i b[Ybž'X]Y'X]fY_hY'J YfZc`[i b['UVni VfYW\Yb"'8Yf
: `ØW\h][Y'_cbbhY'YXcW\'gd\hYf']a 'CfhgVYfY]W\'< Ui YbghY]b
ZYgh[Ybca a Yb'k YfXYbž'bUW\XYa 'gY]b': U\fnYi [']a '; UfhYb'Y]bYg
5bk c\bYfg'YbhXYW_h'k i fXY"'8Yf': Ø\fYfgW\Y]b'XYg': U\fYfg'k i fXY
VYgW\`U[bU\a h'i bX']\a 'Xfc\Yb'bi b'a Y\fYfY'GhfUZUbnY][Ybž
Y]bgW\`]Y»`]W\'Y]bYg'j YfVchYbYb'? fUZhZU\fnYi [fYbbYbg'i bX'XYf
; YZÀ\fXi b['XYg'GhfU»Ybj Yf_Y\fg"

; Ya Y]bgW\UZh`]W\Yg`G]W\Yf\Y]hgYa dZ]bXYbgh\Af_Yb

 $\pm 0.5 \, \text{bVYhfUWk} \, \text{h:X}] \, \text{YgYf:JcfZÅ} \, \text{Y:g} \, \text{bX:X}] \, \text{Y:60f} \, \text{[Yf:Y]b[Y:UXYbž:g]Wk} \, \text{U_h]j ia]h:XYf:Dc`]nY]:]b:JYfV] \, \text{bXib[ini:gYhnYbž:gc``hYb:g]Y:NYi[YbcXYf:CdZYf:X] \, \text{YgYf:Y} \, \text{YgYb:gY]b:"8]Y:Dc`]nY]:8 \, \text{U\b:ghibhYf:XYf:HY:YZcbbiaaYf:$^*'-\%'-\%'*$:cXYf:dYf:9!AU]`} \, \text{YffY]WkVUf:"8]Yg:_ObbhY:\Y:ZYbž:XUg:G] \, \text{WkYf\Y] hgYadZ] bXYb:]b:XYf: YaY] bXYni:ghAf_Yb:ibX:XUg:6Yk:igghgY]b:ZØf:X]Y:;YZU\fYb:XYg:U\fYbg:ibhYf:XYa:9]bZi:gg:jcb:8fc[Yb:ibX:5`_c\c`:ni:gWkAfZYb:"8]Y:ghY][YbXY:5bnU\`:XYf:JYf[Y\Yb:]b:`YhnhYf:NY]h:_ObbhY:U`gKYW_fiZ:ZØf:U``Y:X]YbYbŽ:dfcU_h]jY:GWkf] hhY:ni:f:JYfVYggYfi:b[:XYfJYf_Y\fgq] \, \text{WXf\Yf\Y]hini:ibhYfbY\aYb:"}$

8 YhU]`g

6 Ygi WX Yb 'G]Y 'i bg 'Ui Z. 'b!U["XY