

7 Ugd Uf '8 Uj]X : f]Y Xf]WX . J ca 'J Yf[YggYb ni a '[YZY]YfhYb 'A Y]ghYf XYf F ca Ubh]_

9fZU\fYb'G]Yž'k]Y'7UgdUf'8Uj]X': f]YXf]W\g'nY]h`cgY'?i bgh &) \$'\\\fY'bUW\'gY]bYf'; YVi fh'k]YXYf'bYi 'YbhXYW_h'k]fX i bX'kY`W\Y'Fc``Y': `cf]Ub'=`]Yg'gd]Y`h"

#D 'Y]bYf'NY]hž']b'XYf'?i bgh'c Zh'ØVYf'HfYbXg'i bX'ZØW\h][YGhfÒa i b[Yb'XYZ]b]Yfh'k]fXž'nY][h'X]Y'FYbU]ggUbW'XYg'7UgdUf8Uj]X': f]YXf]W\ž'k]Y'ghUf_'X]Y'JYfV]bXi b['nk]gW\Yb'?i bgh'i bXBUhi f']gh''; YXUW\h'U`g'Y]bY'5i gnY]W\bi b['ZØf'Y]bYb'XYf'[fc>YbAY]ghYf'XYf'FcaUbh]_ž'n]Y\h'XUg'\Rightarrow V]`Ài a 'XYg'bcfXXYi hgW\YbAU`Yfg'ZUgn]b]YfhY'AYbgW\Yb'Ub'''AUb'_\ObbhY'aY]bYbž'XUgg'XYfBUaY'7UgdUf'8Uj]X': f]YXf]W\']b'XYb''`YhnhYb'\Rightarrow V]bYbž'XUgg'XYfBUaY'7UgdUf'8Uj]X': f]YXf]W\']b'XYb''`YhnhYb'\Rightarrow V]h'[YfUhYb'\k\AfYž'XcW\'XUg'; Y[YbhY]`']gh'XYf': U``''
Yi hYž'%, \$'\Rightarrow VYf'bUW\'gY]bYa'HcXž'YfZfYi Yb'g]W\'gY]bY'\KYf_Y'

8]Y: Ugn]bUh]cb: \mathbb{Z} f:: f]YXf]WX:\Uh:X]Y:; Ya À:XY:XYg:? Øbgh:Yfg:b]WX h bi f:]b:A i gYYbž:gcbXYfb:Ui WX:]b:XUg:U::[Ya Y]bY:6Yk i gghgY]b:XYf
2 \mathbb{Z} Ybh:]WX_Y]h:ni f@W_[YVfUWX.h":8]Y:6Ygi WX.YfnU\:Yb:XYf
3 \mathbb{Y} :Ài a gUi gghY::i b[Yb:@VYfghY][Yb:VYfY]hg:Y]bY:A]::]cbž:k Ug:X]Y
Ub\U:hYbXY:FY:Yj Ubn:i bX:X]Y:nY]h:cgY:K]f_i b[:gY]bYf:5fVY]hYb
i bhYf:6Yk Y]g:ghY::h":A]h:gY]bYa:Y]bn][Ufh][Yb:6:]W_:Ui Z:X]Y
bcfXXYi hgWX:Y:BUhi f:UbXgWX:UZh:gWXi Z::f]YXf]WX:6]:XYfž:X]Y:k Y]h
a Y\f:U:g:bi f:Agh\Yh]gWX:Y:5bn]Y\i b[:g_fUZh:VYg]hnYb::g]Y::UXYb
XYb:6YhfUWX.hYf:ni a::BUWX:XYb_Yb:i bX:ni f:]bbYfYb:9]b_Y\f:Y]b"

: `cf]Ub '=`]Yg '6]c[fUZ]Y

9]b 'VYgcbXYfYf'6Y]hfU['ni f'K]YXYfYbhXYW_i b['j cb': f]YXf]WX _ca a h'j cb'XYa '?i bgh\]ghcf]_Yf'i bX' \approx i fbU`]ghYb': `cf]Ub'=`]Yg"' \Rightarrow b

gY]bYa '6i W. NUi VYf'XYf'Gh]``Y' '7 UgdUf'8 Uj]X': f]YXf]W.g'FY]gY Xi fW. 'X]Y'NY]hYb '\Uh'Yf'Y]bY'dUW_YbXY'i bX'i bhYf\U`hgUa Y UbY_Xch]gW.Y'6]c[fUZ]Y'j YfZUgghž'X]Y'X]Y'9bhk]W_`i b['XYf FYnYdh]cb': f]YXf]W.g'ØVYf'X]Y'&U\f\i bXYfhY'\]bk Y['VY`Yi W.hYh'' =`]Yg'`Aggh'XUVY]'b]W.h'bi f'X]Y'A Y]ghYfk Yf_Y'ZØf'g]W.'gdfYW.Ybž gcbXYfb'[Yk A\fh'Ui W.'9]bV`]W_Y']b'XUg'@YVYb'XYg'? Øbgh`Yfgž gY]bY'; YXUb_Ybk Y`h'i bX'X]Y'NY]hž']b'XYf'Yf'`YVhY''

8 Yf '9]b Z`i gg : f]Y Xf]W g 'Ui Z X]Y ; Y [Y b k Ufh

8]Y FY Yj Ubn': f]YXf]W g'V YgW fÀb_h'g]W 'b]W h'bi f'Ui Z_i bgh\]ghcf]gW Y'? fY]gY"' <]g'9fZU\fi b[Yb'i bX'X]Y '5fhž'k]Y 'Yf'X]Y B Uhi f'k U\fbU\a ž'fYgcb]YfYb'a]h'a cXYfbYb'Ÿb[ghYb'i bX GY\bgØW hYb'']bgVYgcbXYfY']b'NY]hYb'XYf'I a k Y`h_f]gY"'8]Y K Yf_Y': f]YXf]W g'_ObbYb'U`g'5i ZZcfXYfi b['j YfghUbXYb'k YfXYbž]bbYni \U`hYbž'bUW ni XYb_Yb'i bX'g]W 'Ui Z'XUg'K YgYbh`]W Y'ni VYg]bbYb"'G]Y'Yf]bbYfb'XUfUbž'k]Y'k]W h]['Y]bY'J YfV]bXi b['ni f B Uhi f']gh'i bX'k]Y'XYfYb'GW Ob\Y]h'i bX': fU[]`]hÀh']b'XYf'?i bgh 5i gXfi W_'Z]bXYb'_ObbYb"

6f]``Ubnž'gcbXYfb'Ui W\'ZØf'X]Y'Zcfhk À\fYbXY'FY`Yj Ubn'gY]bYf

\$\\U`hY']b'XYf'a cXYfbYb'K Y`h''GY]bY': À\][_Y]hž'BUhi f'b]W\h'bi f

XUfni ghY``Ybž'gcbXYfb'g]Y'Ui W\'U`g'Ei Y``Y'XYf'\$\dgd]fUh]cb'i bX

FYZYI]cb'ni 'bi hnYbž']gh'Y]bY'?i bghZYfh][_Y]hž'X]Y']b'XYf'\Yi h][Yb

NY]h'bi f'ni 'cZh'j Yf`cfYb'[Y\h''

8 Y hU] `c

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