

6]b\'D\icW'5i ZVfi W\']a 'Hcif]ga i g'a]h A Y[U!=bj Ygh]h]cbYb°

6]b\`D\icW]bj Ygh]Yfh`]b`hci f]ga i gZfYi bX`]W\Y`±bZfUghfi _hi f i bX`n]Y`h'Ui Z'%ž+ A]``]cbYb'6Ygi W\Yf'V]g'&\$&) "'9bhXYW_YbG]Y'bYi Y'Hci f]ga i gdfcXi _hY°



6]b\D\i cWtJ]YhbUa '!'8Yf'Hci f]ga i ggY_hcf']b'6]b\'D\i cWtY]bYf'Dfcj]bn']a 'gØX']WXYb'J]YhbUa ž'[Yk]bbh'ni bY\a YbX'Ub 6YXYi hi b["'5b`Agg`]WXXYf'Gci h\YUgh'Hci f]ga '@]b_U[Y'FYj]Yk 7cbZYfYbW' &\$&) ']b'8cb['BU]ž'VYgi WXhYb'B[i mYb'Gcb'<i b[ž ghY``j YfhfYhYbXYf'Jcfg]hnYbXYf'XYg'Jc`_g_ca]hYYg'XYf'Dfcj]bn 8cb['BU]ž'i bX'HfUb'Hi mYh'A]b\ž'ghY``j YfhfYhYbXYf'Jcfg]hnYbXYf XYg'Jc`_g_ca]hYYg'j cb'6]b\'D\i cWtXYb'Hci f]ga i gghUbXt'i a 'X]Y 9bhk]W_`i b[Yb'ni 'ZÒfXYfb''6]b\'D\i cWgYhnh'Ui Z'XYb'5i gVUi 'XYf gcn]U'Yb'+bZfUghfi _hi f'i bX'X]Y'GWXUZI b['Y]bYg'[Øbgh][Yb I a ZY'Xg'ni f'5bn]Y\i b['j cb'+bj Ygh]h]cbYbt'i a 'XYb'Hci f]ga i g k Y]hYfni 'Ybhk]W_Yb''8]Yg'[YgWX]Y\h']a '9]b_`Ub['a]h @UbXgWXUZhg!'i bX'I a k Y`hgWXi hn'gck]Y'XYf'9bhk]W_`i b['UbXYfYf GY_hcfYb'k]Y'@UbXk]fhgWXUZhii bX'GhUXhYbhk]W_`i b['"

8]Y 'Dfcj]bn']gh'Ui Z[fi bX']\fYf'[Yc[fUZ]gWXYb'@U[Y'Y]bY'k]WXh][Y 8 fY\gWXY]VY'ZØf'XYb'Hci f]ga i g"'6]b\'D\i cW\Uh'X]Y'[fÒ» hY : `ÀWXY'i bhYf'XYb'gØX`]WXYb'Dfcj]bnYb'a]h'*", , \$ž*'_a ‡'i bX [fYbnh'X]fY_h'Ub'? Ua VcXgWXU"'Hfchn'X]YgYf'J cfhY]`Y'k]fX'X]Y Dfcj]bn'V]g\Yf'b]WXh'U_h]j 'ZØf'XYb'Hci f]ga i g'VYk cfVYbž'V]YhYh YXcWX'nU\`fY]WXY'9bhXYW_i b[ga Ò[`]WX_Y]hYb"'8]Y'9bhZYfbi b[Yb g]bX'ØVYfgWXUi VUf.'Bi f''%&\$'_a 'g]bX'Yg'j cb'<c'7\]`A]b\'GhUXh ØVYf'X]Y'BUh]cbU`ghfU» Yb'Bf"'%' 'i bX'%("

K UW ghi a gdfc[bcgYbibX =bZfUghfi_hif

 $= \frac{1}{2} \left[\frac{1} \left[\frac{1}{2} \left$

 $\label{law} I a ~ `X]YgY`N]Y`Y`ni ~ `YffY]WXYbž`ghY\Yb`k]WXh][~ Y`]bhYffY[~]cbU`Y \\ J~Yf_Y\fgdfc~Y_hY`Ubž`XUfi~bhYf`XUg`BcfX!GØX! \\ GWXbY``ghfU»~Ybdfc~Y_h"$

8]Y'I bhYf_i bZhga Ò[`]W_Y]hYb']b'6]b\'D\i cWg]bX'YXcW\'bcW\
VY[fYbnh'8]Y'Dfcj]bn'V]YhYh'ØVYf', \$'I bhYf_ØbZhY'a]h'a Y\f'U`g
%"&\$\$'N]a a Yfbž'YXcW\'[]Vh'Yg'_Y]bY'(!'V]g')!GhYfbY!<chY`g"'8]Y
E i U`]hÀh'XYf'j cf\UbXYbYb'I bhYf_ØbZhY'i bX'8]Ybgh'Y]ghi b[Yb'k]fX
U`g'Y]b[YgW\fÀb_h'Y]b[YgW\Ahnhž']bgVYgcbXYfY'ZØf'[fc»Y'; fi ddYb
i bX']bhYfbUh]cbU`Y'?cbZYfYbnYb"'I a 'X]YgY'8YZ]n]hY'ni 'VY\YVYbž
g]bX'XYf'6Ui 'j cb'(!'V]g')!GhYfbY!<chY`g'gck]Y'; c`Zd`AhnYb
[Yd`Ubh"

9bhk]W_`i b['j cb 'Hci f]ga i gdfcXi _hYb

6]b\'D\i cW\Uh'XUg'DchYbn]U`'ZØf'X]Y'9bhk]W_`i b['XYg

2 _chci f]ga i g'XUb_'gY]bYg'fY]W\Yb'K U`XÒ_cgmghYa g'i bX'gY]bYf

5fhYbj]Y`ZU`h"'9g'k YfXYb'j YfgW\]YXYbY'5fhYb'j cb

Hci f]ga i gdfcXi _hYb'Ybhk]W_Y`hž'X]Y'j]Yf'<Ui dh_UhY[cf]Yb

i a ZUggYb. 2 _chci f]ga i gž?i `hi fhci f]ga i gž·gd]f]hi Y``Yf'Hci f]ga i g i bX`K cWXYbYbXhci f]ga i g"=a `\\\f\&\&\('\k i fXYb`VYfY]\hg`XfY] hmd]gWXY`Hci fYb`Y]b[YZØ\\fhž`XUfi b\\Yf`Y]bY`Hci f`Xi fWX`XYb`6i `;]U A Ud`BUh]cbU`dUf_ž`X]Y`_i `hi fY``Y`9f`YVb]ghci f`ØVYf`Yh\b]gWXY?i `hi fYb`i bX`X]Y`6Yg]WX\h][i b[`XYg`Dfcj]bna i gYi a g"6]b\`D\i cW_ccfX]b]Yfh`ni XYa `a]h`UbXYfYb`Dfcj]bnYb`]a GØXcghYb`ni f`Cf[Ub]gUh]cb'j cb`Hci f]ga i gj YfUbghU`hi b[Yb`i bX XYa `5i ghUi gWX`j cb`\z6a Uh]cbYb`ØVYf`Hci f]ga i ghÀh][_Y]hYb"`

 $= (YfnYb'jcb'6]b\ D\ cWVYZ]bXYh'g]WX'X]Y'Dfcj]bn\ UidhghUXh \\ 8cb['LcU]ž'k Å\ fYbX'X]Y'ia `]Y[YbXYb'8]ghf]_hY'8cb['D\ iž'D\ cW \\ @cb['ž'@cWB]b\ ž'6i'8Ub['ibX'7\ cb'H\ Ub\ 'YVYbZU``g'hcif]gh]gWXY \\ 5hhfU_h]cbYb'V]YhYb''Ni'XYb'GY\Ybgk ØfX][_Y]hYb'nÅ\ `Yb'XYf'6i';]U'A Ud'BUh]cbU`dUf_<math>$ ž'XYf'6U'FU'6Yf['ibX'XUg'H\ UWA c'GYY''

$?i `]bUf]gWXY' <][\ `][\ hg'i bX``c_U`Y GdYn]U`]hÀhYb$

8]Y'Dfcj]bn']gh'VY_Ubbh'ZØf']\fY'GdYn]U`]hÀhž'X]Y'7Ug\Yk!Bi ggž'Ui g
XYf'j YfgW\]YXYbY'; Yf]W\hY'k]Y'7Ug\Yk!D]Ygž'7Ug\Yk!GU`Uh'i bX
6Ua Vi gfY]g'ni VYfY]hYh'k YfXYb"' +b'8cb['LcU]'Z]bXYb'6Ygi W\Yf
[Àb[][Y': Ugh!: ccX!?YhhYb'gck]Y'`c_U`Y'; Ughfcbca]Y'''Hfchn'XYg
VY[fYbnhYb'5b[YVchg'Ub'Hci f]ga i ggYfj]WYg']gh'X]Y'FY[]cb'fY]W\
Ub'?i `hi f'i bX'`UbXgW\UZh`]W\Yf'GW\Òb\Y]hž'X]Y'Yg'ni 'YbhXYW_Yb
[]`h''Ni XYa 'Z]bXYh'a Ub'GY`Vgh[Yd`UbhY'FY]gYbž'XU'X]Y
+bZfUghfi_hi f'g]W\'`Ub[qUa 'Ybhk]W_Y`h''

5VgWX`]Y» YbX``Àggh'g]WX`gU[Ybž'XUgg`6]b\`D\i cWž'cVk c\``Yg`bcWXb]WXh'U`g`Hci f]ga i gn]Y``YhUV`]Yfh']ghž'a]h'gY]bYb'DchYbn]U`Yb'i bX [Yd`UbhYb'9bhk]W_`i b[Yb'Ui Z'Y]bYa 'j]Y`j YfgdfYWXYbXYb'K Y['ni f : ÒfXYfi b['XYg'Hci f]ga i g']gh"'8]Y'bÀWXghYb'*J\\fY'k YfXYb YbhgWXY]XYbX'gY]b'ZØf'X]Y'9hUV`]Yfi b['XYf'Dfcj]bn']b'XYf hci f]gh]gWXYb'@UbXgWXUZh'J]YhbUa g"

: Øf'k Y]hYfY' ±b Zcfa Uh]cbYb'_ÒbbYb'G]Y'X]Y'6Yf]W\hY'Ui Z' j]YhbUa "j b'i bX'j]YhbUa hfUj Y`"Wca 'Y]bgY\Yb"

8 YhU]`g	
Cfh	6]b\`D\i c\\Z'J]YhbUa
EiY``Yb	• k k k "j]Y hb Ua "j b
	• j]YhbUa hfUjY`"Wca

6Ygi WXYb'G]Y'i bg'Ui Z.'Y]bY!fY]gY"XY