

=a a ][ fU]cb  
Gh Xn]b[



Gh Xn]b[ ! i b]j Yfg]hm

Dcfh [ i YgY

; cg]Uf]UXY'a Y'a Uf]W`Uf`Ya `i a Ui b]j Yfg]XUXY"  
Gh]b[ `h.Uhnci `k Ubhrc`Ybfc`

9b[ `]g\

=k ci `X`\_]Yrc`Ybfc```UhUi b]j Yfg]hm!

; cg]Uf]UXY'a Y`]bg]W]Y Yf`bc`Wfgc`XY  
SSSSSSSSSSSS"

=k Ubhrc`Udd`mZcf`SSSSSSSSSSSS`Vti fgY"

Gh]b[ `h.Uhnci `k Ubhrc`Udd`mZcf`U`Vti fgY

[ fUXi UÃc

Ub i bXYf[ fUXi UH

HndY`cZVti fgY

dI g[ fUXi UÃc

U'dcg[ fUXi UH

HndY`cZVti fgY

D\8

UD\8

HndY`cZVti fgY

hYa dc`]bhY[ fU

UZ `!h]a Y

HndY`cZVti fgY

a Y]c`dYfEcXc

U'dUfH]h]a Y

HndY`cZVti fgY

cb`]bY

Ub`cb`]bY

HndY`cZVti fgY

; cg]Uf]UXY`Ygh XUF`Ya `g`Ui b]j Yfg]XUXY`dcf  
SSSSSSSSSSSS"

=k ci `X`\_]Yrc`gh XmiUhnci f`i b]j Yfg]mZcf`SSSSSSSSSSSS"

Gh]b[ `ck `cb[ `nci f`Yi WUb[ Y`dYf]cX`]g

i a `gYa YgfY

UgYa YgfY

@Yb[ h`cZg]umiUhzcfY][ b`i b]j Yfg]hm

i a `Ubc`UMX`A]Vt

Ub`UMX`Ya ]VtYUF

@Yb[ h`cZg]umiUhzcfY][ b`i b]j Yfg]hm

# ⇒ a a ][ fU]cb Gh Xm]b[



E i U]g'g;c'Ug'fYgf]ÅÑYg'XY'fUUV\c'dUFUYgh XUbHYg3  
5g\_]b[ 'U'ci hk cf\_'fYgf]V]cbg'Zcf'gh XYbhg3

K \UhiUFY'k cf\_'fYgf]V]cbg'Zcf'gh XYbhg3

8 Yj c'UdfYgYbUf'Ug'V'd]Ug'Xcg'XcW'a Ybhc'gci 'cg  
cf][ ]bU]g3  
5g\_]b[ 'Z'nci 'b'YX'hc'dfcj ]XY'h'Y'cf][ ]bU'XcW'a Ybh'g'cf'V'd]Yg

8c'=\Uj Y'hc'g'ck 'V'd]Yg'c'Z'h'Y'cf][ ]bU'XcW'a Ybh'g'cf  
h'Y'cf][ ]bU'XcW'a Ybh'g'h'Ya g'j Yg3

E i U]g'g;c'cg'fYei ]g]hc'g'XY'UWggc'¼i b]j Yfg]XUXY3  
I g'X'k \Yb'Udd'n]b[ 'Zcf'i b]j Yfg]hm

K \UhiUFY'k Y'Yb'f'm'f'Yei ]f'Ya Ybh'g'c'Z'h'Y'i b]j Yfg]hm3

J ci 'f'W'W'f'i a U'df'cd'cg'U'Z'c'fa U'3  
5g\_]b[ 'Z'nci 'k ]'f'W'W'j Y'U'Z'c'fa U'c'Z'Z'f

5f'Y'nci '[c]b[ 'hc'g'Yb'X'a Y'U'Z'c'fa U'c'Z'Z'f 3

5 i b]j Yfg]XUXY'U'a V'Åa 'c'Z'f'Y'W'U'W'a c'X'U'Å;c'3  
5g\_]b[ 'Z'h'Y'i b]j Yfg]h'm'd'f'c'j ]X'Y'g'U'W'W'a a c'X'U'j'cb

8c'Y'g'h'Y'i b]j Yfg]h'm[ i U'f'U'bh'Y'U'W'W'a a c'X'U'j'cb'U'g'k'Y'`3

C 'W'f'g'c'U'a V'Åa ]b'W ]i a 'd'Y'f'c'X'c'X'Y'Y'g'h'½]c'3  
5g\_]b[ 'Z'nci f'i b]j Yfg]h'm'V'd'i f'g'Y'bj c'j Y'g'U'b ]b'h'f'bg'Å'd'U'g'k'Y'`3

8c'Y'g'h'Y'V'd'i f'g'Y'bj c'j Y'U'b ]b'h'f'bg'Å'd'U'g'k'Y'`3

< ¼i a 'W'g'c'd'U'F'U'Y'g'h' X'U'f'V'a c ]b'h'f'V'a V]g'U'b'Y'g'U  
i b]j Yfg]XUXY3  
5g\_]b[ 'Z'nci '\Uj Y'hc'd'U'm'hc'gh X'm]U'g'U'b'Y'i W'U'b[ Y'gh XY'bh'U'hi'nci f  
i b]j Yfg]hm3

⇒gh Y'f'Y'U'W'g'h'hc'gh X'm]U'g'U'b'Y'i W'U'b[ Y'gh XY'bh'U'hi'nci f  
i b]j Yfg]hm3

7 ca c'dcggc'U'W'a d'U'b\U'f'c'd'f'c[ f'Y'ggc'X'U'a ]b\U  
]bg'V]Å;c'W'U'X]X'U'hi f'U'3  
5g\_]b[ '\ck'nci 'W'b'g'Y'h'Y'd'f'c[ f'Y'ggc'Z'nci f'U'dd' ]W'h]cb

< ck 'W'b'='f'U'W' h'Y'd'f'c[ f'Y'ggc'Z'a m'U'dd' ]W'h]cb3

E i U]g'g;c'cg'fYei ]g]hc'g'XY'Éb[ i U'd'U'F'U'ÓÉb[ i U'3  
=bei ]f]b[ 'U'ci h'h'Y'U'b[ i U'Y'f'Yei ]f'Ya Ybh'hc'V'Y'Zi 'Z'`YX' ]b'cf'X'f'hc'V'Y'U'W'W'd'h'X'U'hi'U'hi b]j Yfg]hm

K \UhiUFY'k Y'U'b[ i U'Y'Q'U'b[ i U'Y'f'Yei ]f'Ya Ybh'g3

7 ca c'Å'c'g]g'Y'a U'XY'SSSSSSSSSSS3  
5g\_]b[ ]b'Z'c'fa U'j'cb'U'ci h'h'Y'g'g'h'Y'a

K \U'h]g'h'Y'SSSSSSSSSSS'g'g'h'Y'a ` ]\_Y3

V'ÅX]hc  
H'nd'Y'c'Z'g'g'h'Y'a

V'ÅX]h

b'ch'U'g  
H'nd'Y'c'Z'g'g'h'Y'a

a U'f\_]b[

# =a a ][ fU]cb Gh Xm]b[



J ci 'fYVVYf'i a U'Wfh]Z]WVĀ;c'UWUXAā ]W]bc'Z]bU  
Xc']bhYfVā V]c3

8c'=[ Yh]Ub'UWUXYa ]WfUbgV]dhUih.Y'YbX'cZa m  
YI WUb[Y3

5g\_]b[ ]Znci 'Uj Y'Ub'UWUXYa ]WfUbgV]dhUih.Y'YbX'cZnci f'YI WUb[Y

E i U'Ā'c'Yg]c'XY'Ybg]bc3

K \Uh]g]h.Y'hUW]b[ 'gmY' ]\_Y3

=bei ]f]b[ 'Uci hih.Y'hUW]b[ 'gmY

G;c'SSSSSSSSSSSSS'3

5fY'h.YfY'SSSSSSSSSSSSS'3

=bei ]f]b[ 'Uci hih.Y'hUW]b[ 'gmY

U 'Ug'YI dcg]h]j Ug

'Wm fYg

HndY'cZVUgg

gYa ]b]c]cg

gYa ]bUfg

HndY'cZVUgg

h hcf]U]g

h hcf]U]g

HndY'cZVUgg

Vt]bZyf]b]U]g

Vt]bZyfYbWg

HndY'cZVUgg

E i Y'Wfgcg;c'cZYfY]Xcg'dcf'Yg]U'Ug'XY'j Yf;c3

K \Uh]Vt] fg]gUFY'cZYfYX'Vmg] a a Yf'g]Wcc`g3

5g\_]b[ ]bZcfa U]cb'Uci hih.Y' ]bXg'cZVt] fg]g'cZYfYX'Vmg] a a Yf'g]Wcc`g

E i UbXc'Uv]bh]W]a 'Ug'dfcj Ug3

K \Yb'UFY'h.Y'YI Ua g\YX3

5g\_]b[ 'k \Yb'h.Y'YI Ua g'UFY

C bXY'dcggc'YbVt]bh]fU']bZcfa UĀ'Yg'gcVfY'cg'W]fgcg  
X]g]cb]j Y]g3

K \YfY'Wb' =Z]bX']bZcfa U]cb'Uci hU' 'h.Y'Vt] fg]g  
Uj U]UVY3

5g\_]b[ 'k \YfY'nci 'Wb'Z]bX']bZcfa U]cb'Uci hih.Y'Vt] fg]g

< 1/ā a 'Vt]a d'YI c'Yg]dcf]j c'Uei ]3

=g]h.YfY'Ui b]j Yf]g]m]g]dcf]g]Wb]h]f]3

5g\_]b[ ]Z'h.YfY' ]g'Ui b]j Yf]g]m]g]dcf]g]Wb]h]f

7 ca c'dcggc'a Y'U] ]Uf'U']bg]h] ]Ā'Yg'Yg]i XUb]g3

< ck 'Wb' =`c]b'g]i XYbh]gcV]h]Yg3

5g\_]b[ \ck 'nci 'Wb'`c]b'g]i XYbh]gcV]h]Yg

# =a a ][ fUh]cb Ghi Xm]b[

E i U]g]g;c'cg'Wg]cgXY'j ]XUYgh]a Uxcg'Ya 'O]XUXYQ3  
=bei ]f]b[ 'UWci h]h'Y'Ygh]a UHX''j ]b[ 'W]g]g]b'h]h'Y'W]hm

K \Uh'UFY'h'Y'Ygh]a UHX''j ]b[ 'W]g]g]b'O]h]mQ3

## Ghi Xm]b[ ! @Ub[ i U[ Y'W]i fgYg

Dcfh [ i YgY

9b[ `]g\

E i U]g]'Eb[ i U]g]dcggc'Ygh XUF'Ya 'g U'YgW'U3  
5g\_]b[ 'k \Uh'Ub[ i U[ Yg]mci 'Wb'g]h XmiUh'h.Uhg'Wcc`

K \Uh'Ub[ i U[ Yg'Wb'=g]h XmiUh]mci f'g'Wcc`3

9] ]gY' i a 'h'gY'XY'b]j Y'Ua Yb]c'dUFU'U ]U]UF'a Yi  
b]j Y3

=g'h'YfY'U'd'U'Wa Ybh'h'g]h'c'Ugg'Ygg]a m'Yj Y3

5g\_]b[ ' ]Z'h'YfY' ]g'U'd'U'Wa Ybh'h'g]h'c'Ugg'Ygg]mci f''Yj Y'

Dcggc'a Y'h'fUbgZYf'f'dUFU'ci h'c' b]j Y'g'Y'c'ei Y'Yg]ci  
Z'h'Yb'Xc'b]c'Zcf'UXYe] UXC'dUFU'a ]a 3

7 Ub'=h'fUbgZYf' h'c'Ubch'Yf''Yj Y' ]Z'h'Y'cbY'=Ua 'U'h'Yb'X]b[  
]g]bchf][ 'h'Zcf'a Y3

5g\_]b[ ' ]Z'mci 'Wb'W'Ub[ Y''Yj Y' ]b'W]g]mci 'UFY'bch]g]h]g]YX'k ]h' h'Y'cbY'mci 'UFY'U'h'Yb'X]b[

J cW]g]h'Ya 'i a U'XYg'W]A]c'XYhU'\UXU'Xc'W'fgc3

8c'mci '\Uj Y'U'XYhU]'YX'XYg'W]d]h]cb'cZ'h'Y'W]i fgY3

5g\_]b[ ' ]Z'h'YfY' ]g'U'XYhU]'YX'XYg'W]d]h]cb'cZ'h'Y'W]i fgY

E i U' A'c'bO'a Yfc'a ]a ]a c'XY'Ui bcg'dcf'WUgg]3

K \Uh']g]h'Y'a U ]a i a 'bi a VYf'cZ'g]h XYb]g]b'U'WUgg]3

5g\_]b[ 'k \Uh'h'Y'a U ]a i a 'bi a VYf'cZ'g]h XYb]g]b'U'WUgg]g

E i U]g]g;c'Ug'W]a cX]XUXYg'XU'Yg'W'U3

K \Uh'ZU] ]h]Yg'UFY'h'YfY']b'mci f'g'Wcc`3

5g\_]b[ 'k \Uh'ZU] ]h]Yg'h'YfY'UFY']b'h'Y'g'Wcc`

J cW]g]h'Ua V]A' 'cf[ Ub]n]Ua 'Yi W'fg]Yg3

8c'mci 'Ugc'UffUb[ 'Y'Yi W'fg]cbg3

5g\_]b[ ' ]Z'h'Y'g'Wcc` 'UffUb[ Yg'Ugc'Yi W'fg]cbg

E i U]g]d]fc[ f]Ua U]j cW]g]cZYf'W]a 3

K \Uh]d]fc[ f]Ua g]Xc'mci 'cZYf3

5g\_]b[ 'k \Uh]d]fc[ f]Ua g'UFY'cZYfYX

## Ghi Xm]b[ ! 'GWc`Ufg\]dg

Dcfh [ i YgY

9b[ `]g\

; cg]U]U'XY'g'W]Yf'ei U]g]g;c'Ug]dcf]h b]XUXYg'XY  
Z]b]Ub]U]a Yb]c"

=Ua '\YfY'h'c']bei ]fY'UWci h]Z b]X]b[ 'cddcf]h b]h]Yg'

=bei ]f]b[ 'UWci h]Z b]X]b[ 'cddcf]h b]h]Yg

=a a ][ fUh]cb  
Gh Xm]b[

E i U]g'i f[ zcg'dcXYa 'Z]bUbW]f'a Yi g'Ygh Xcg3  
5g\_]b[ 'k \]W'VcX]Yg'Wb'Zi bX'mci f'ghi X]Yg

K \]W'VcX]Yg'Wb'Zi bX'a mghi X]Yg3

DfY]g'c'XY'U | E]c'Z]bUbW]f'c'dUf'U'SSSSSSSSSSSSSS"  
Gh]b[ 'h.Uh'mci 'bYYX'Z]bUbW]U'\Y'd'Zcf

=b'YX'Z]bUbW]U'\Y'd'Zcf 'SSSSSSSSSSSSSS"

a YbgU]XUXYg  
H\]b[ 'h.Uh'mci 'bYYX'Z]bUbW]U'\Y'd'Zcf

hi ]h]cb'ZYg

XYgdYg]X'Y'g Vg]gh'W]U  
H\]b[ 'h.Uh'mci 'bYYX'Z]bUbW]U'\Y'd'Zcf

a m'i] ]b[ 'Yi dYbgYg

W]XUXcg]bZ]bh]g  
H\]b[ 'h.Uh'mci 'bYYX'Z]bUbW]U'\Y'd'Zcf

W]XW]fY

E i U]g'g'c'cg'h]dcg'XY'Vc'g]g'X]g'cb]f] Y]g3  
5g\_]b[ 'k \Uh\_]bXg'cZg'W'c'Uf'g.]dg'Uf'Y'U] U]U'Y3

K \Uh\_]bXg'cZg'W'c'Uf'g.]dg'Uf'Y'U] U]U'Y3

Gh Xm]b[ ! ] U]XU]h]b[ 'ZcfY][ b'XY[ fYYg  
Dcfh [ i Ygy

9b[ 'g]

9i '[cg]U]XY'j U]XU]f'a Yi 'X]d'ca UYa 'U]U'g

=k ci 'X'[\_]Y'hc'j U]XU]f'a m'XY[ fYY'W]f]Z]W]h]b  
U]i b]f'n

Gh]b[ 'h.Uh'mci 'k ci 'X'[\_]Y'hc'j U]XU]f'mci f'XY[ fYY'W]f]Z]W]h]b'h.Uh]W]i b]f'm

J cW]h]Ya 'i a U]g]U]XY'f'U]X] h'cfYg'W]f]Z]W]XcgYa  
O]b[ i U]3  
5g\_]b[ 'Z]h]Yf]'g'U]g]h]cZ'W]f]Z]YX'f'U]bg'U]c'f'g]b'h]Y'U]b[ i U]Y'h]U]h'mci 'bYYX

8c'nci '\U]YU]g]h]cZ'h]Y'W]f]Z]YX'f'U]bg'U]c'f'g]b  
O]b[ i U]Y]3

C bXY'dcggc'V]b]g]Y[ i ]f' i a 'W]f]Z]W]Xc'XY  
Yei ]j U]U]U]3  
5g\_]b[ 'k \Yf]'mci 'W]b[ 'Yh]U'W]f]Z]W]h]c'Z'Yei ]j U]Yb]W]h

K \Yf]'W]b [=]Yh]U'W]f]Z]W]h]c'Z'Yei ]j U]Yb]W]h