

=a a][fUh]cbY

6UbW



6UbW! ; YbYfUY

=H]Ubc

Dcggc:dfY Yj UfY]b'GdUYgYQgYbnU'dU[UfY''Y'gdYgY'X] Vta a [gg]cbY3

8 ca UbXUfY'gY'Vf'gcbc'gdYgY'X] Vta a [gg]cbY'ei UbXc:dfY Yj]]b'i b'XYHfa]bUrc:dUYgY

F i a Ybc

DchfYfU[Ybi a YfUf'Eb'OUFUOZBfB'U'd'fH] Vta [g]cbY3

E i U]'gcbc''Y'gdYgY'X] Vta a [gg]cbY'gY'dfY'Yj c'XU i bUVubW'X]j YfgU'XU'Ua]U3

8 ca UbXUfY'ei U]'gcbc''Y'gdYgY'X] Vta a [gg]cbY'ei UbXc:dfY Yj]]U'c'gdcfH''c'VubWta UhX]'i bfiU'fU'VubW

7 3hig bhVta [g]cbY'Y'U'rcf'VubWta UH3

6UbW! 5df]fY'i b Vtbhc VeffYbhY

=H]Ubc

J cffY] Udf]fY'i b Vtbhc VeffYbhY"

8]fY'WXY'j i c] Udf]fY'i b Vtbhc VeffYbhY

F i a Ybc

5 j fYU'gB'XYgW]X'i b VtbhVubWf"

J cffY] W]i XYfY]' 'a]c Vtbhc VeffYbhY"

8]fY'WXY'j i c] W]i XYfY]' 'h'c Vtbhc VeffYbhY

5 j fYU'gB]a]'EbW]X'Vtbh' `VubWf"

Dcggc:Udf]fY'i b Vtbhc VeffYbhY'cb`]bY3

8 ca UbXUfY'gY'di c] Udf]fY'i b Vtbhc VeffYbhY'Vtb'i bU'dfcWXi fU'cb`]bY

DchgB]a]'XYgW]X'i b VtbhVubWf'dY' =bhYf'byH3

F]W] Yf' i bUVfHU'X] XYW]rc'c' i bUVfHU'X] WfYX]rc3

8 ca UbXUfY'WXY'h]dc'X] WfHU'Ä'dfY]gU'Vtb`] 'h'c Vtbhc

J c]df]a]i b WfX'XY'XYW]h]gU' i b WfX'XY'WfYX]H3

Dcggc:ZZYHh UfY'cdYfU]cb] VubWf]Y'XU' 'a]c W' i UfY3

8 ca UbXUfY'gY'di c] YZYHh UfY'cdYfU]cb] VubWf]Y'XU' 'h'c W' i UfY

DchgB]a]'UWgYn'Vtbh' `XY'dY'H'YZcb3

E i U]'h]d] X] Vtbh] VeffYbhY'gcbc'X]g]cb]V]`]3

8 ca UbXUfY'ei U]'h]d] X] Vtbhc VeffYbhY'gcbc'X]g]cb]V]`]

7 YZY'XY'Vtbh' f] VubWf]Y'Uj Y]3

Vtbhc VeffYbhY

H]dc'X] Vtbhc VeffYbhY

VtbhWfYbh

Vtbhc'X] f]gdUfa]c

H]dc'X] Vtbhc VeffYbhY

VtbhXY'Wtbca]]

⇒ a a] [f Uh] cb Y

6 Ub W



Vēbhc`dYfgcbUY

H]dc`X] Vēbhc`VēffYbhY

VēbhidyfgcbU

Vēbhc`Vē]bhYgUhc

H]dc`X] Vēbhc`VēffYbhY

VēbhVēa i b

Vēbhc`dYf`VLa V]b]

H]dc`X] Vēbhc`VēffYbhY

Vēbhi``dYbhf i`Vēd]]

Vēbhc`]b`j Ui HU YghYFU

H]dc`X] Vēbhc`VēffYbhY

VēbhWfYbhēb`a cbYXB`gfβ]bβ

Vēbhc`Uh]YbXUY

H]dc`X] Vēbhc`VēffYbhY

VēbhXY`Z]fa β

Vēbhc`dYf`gi XYbh]

H]dc`X] Vēbhc`VēffYbhY

VēbhXY`gi XYbh

7]`gcbc`XY`WUcb]`a Ybg]`dYf`]`Vēbhc`3

8 ca UbXUY`gY`gcbc`dfY]`g]`WUcb]`a Ybg]`dYf`]`Vēbhc`

9I`]gβ`Vēa`]g]cbY`i bUfY3

E i U]`gcbc`Y`Vēa a`]gg]cb]`dYf`]`Vcb]Z]W]`
]bhYfbh]cbU]3

8 ca UbXUY`]bZcfa Uh]cb]`g]`Y`Vēa a`]gg]cb]`dYf`]`Vcb]Z]W]YghYf]

7 Y`Vēa`]g]cbUfY`g bhdybhf i`hfUbnUM]]`Y]bhYfbU`]cbUY3

7 fā`i bfi]gg]WfUh]cbY`]b`WUgc`U`a`]U`WfUj`Yb[U`
ga Uff]Uc`fi VUUB

8 ca UbXUY`gY`Ā`Zcfb]U]i bfi]gg]WfUh]cbY`]b`WUgc`U`WfUj`Yb[U`dYfgUc`fi VUUB

9I`]gβ`c`Ug]]i fUYēb`Wri`d]YfXYf]]`WfXi`i`]gU`
Z`fh`i`]3

F`]W]`Yf`i`b`]VfYhc`XY[`]`UggY[`b]3

8 ca UbXUY`gY`j`]YbY`Zcfb]hc`i`b`]VfYhc`XY[`]`UggY[`b]`ei`UbXc`g]`UdfY`i`b`Vēbhc`

Df]a`YgW`b`WfbyhXY`Ww]f]`dYbhf i`Vēbhi``a`Yi`3

E i U`Ā`]`hUggc`X`]bhYfYggY`g]`f]gdUfa`]3

⇒bZcfa Ufg]`f]]`UfXc`]`hUggc`Xf]bhYfYggY`g]`f]gdUfa`]

7 UfY`YghY`fUHU`XcV³]n]]`XY`Wēbca`]]3

⇒b`WY`a`cXc`dchYh`dfchY[`]Yfa`]XU`Y`ZfcX]3

8 ca UbXUY`ei`U]`dfcj`j`YX]a`Ybh]`dfYbXU`U`VUbW]]b`WUgc`X`]ZfcXY`

7 i`a`a`β`di`hY`]dfchY`Uēb`Wri`i`bY]ZfU`XY3

=a a][fUh]cbY

6UbW



< c'ga Uff]rc`U'a]U'WffhU'X]`VfYX]rc
8]fY`WfY`U]`dYfgc`U'hi U'WffhU'X]`VfYX]rc

A]!Ua `d]YfXi h'WfXi `XY'VfYX]h'

@U'a]U'WffhU'X]`VfYX]rc`Ä'g'fU'fi VU'U
8]fY`WfY`U'hi U'WffhU'X]`VfYX]rc`Ä'g'fU'fi VU'U

A]'g'U'Zi fUh'WfXi `"

DchYf`V`c'WfYf`]'a]c`V`bhc`V`ffYbY3
7\]YXYfY`gY`U'V'UbW'di`I`V`c'WfYf`]'`hi`c`V`bhc`V`ffYbY

ªa]'di`hY]'V`c'W'V`bhi`3

< c`V]gc[bc`X]i bU'WffhU'g'g'h]h]j U
8]fY`WfY`U]`V]gc[bc`X]i bU'WffhU'g'g'h]h]j U

5a `bYj c]Y`XYi b`WfX`bci "

6UbW!`5]i`hc`Z]bUbn]Uf]c

=fU]Ubc

J`c'ffY]`Uj`YfY`XY`Y`]bZcfa Uh]cb]`f][i`UfXc`]`dfYg]h]"
7\]YXYfY`]bZcfa Uh]cb]`g`j`dfYg]h]

F i a Ybc

5 `Xcf]`gß'df]a Yg]V]bZcfa U]]'W`df]j]fY`U'fä dfi a i hi f]"

E i U`Ä`]`fUggc`Xf]b]hYfYggY3
=bZcfa Ufg]`g`fUggc`Xf]b]hYfYggY

7Y`XcV`b`X`B`Uj`Y]3

J`c'ffY]`Uj`YfY`XY`Y`]bZcfa Uh]cb]`g`j`a`i`hi`]`dch'Wf]"
7\]YXYfY`]bZcfa Uh]cb]`g`j`a`i`hi`]`dch'Wf]

5 `Xcf]`gß'df]a Yg]V]bZcfa U]]'W`df]j]fY`U`]dch'Wf]"

J`c'ffY]`dUf`UfY`V`b`i`b`V`bgj`Y`b]h`f][i`UfXc`]`a`i`hi`]`dch'Wf]"
7\]YXYfY`X]`dUf`UfY`V`b`i`b`V`bgj`Y`b]h`f][i`UfXc`]`a`i`hi`]`dch'Wf]"

5 `Xcf]`gß]`cf`V`Y`g`W`W`i`b`V`bgj`fU`b]h]dch'Wf]"

Ghc`V`ä`dfUbXc`U'a]U'df]a U'W'gU'
8]fY`WfY`gU]`V`ä`dfUbXc`U'hi U'df]a U'W'gU'

ªa]`W`a`dß`f`df]a U'W'gß"

Ghc`V`ä`dfUbXc`i`bU`g`V`bXU`dfcdf]Yh¼
8]fY`WfY`gU]`V`ä`dfUbXc`i`bU`g`V`bXU`dfcdf]Yh¼

7 i a dß`U`Xci U'dfcd]f]YhY"

J`c'ffY]`U`W`b`XYfY`i`bU`g`V`bXU`]dch'Wf]"
8]fY`WfY`j`i`c]`U`W`b`XYfY`i`bU`g`V`bXU`]dch'Wf]"

5]`fYU`gß`fä]`fY`f`b`c]Y`g`V`fä dfi a i hi `]dch'Wf]"

J`c'ffY]`f]bY[cn]UfY`]`a]c`a`i`hi`c`]dch'Wf]c"
8]fY`WfY`j`i`c]`f]j`YXYfY`Y`V`bX]n]cb]`XY`hi`c`a`i`hi`c`]dch'Wf]c

5]`fYU`gß]a]]`Yf]Z]V`fä dfi a i hi `]dch'Wf]"

⇒a a][fUh]cbY
6UbW



Ghc'Uwéi]ghubXc'i bU'dfcdcf]Yh¼XU'UZZ]HUFY"
8]fY'WXY'gU]`Wéa dfUbXc'i bU'dfcdcf]Yh¼XU'UZZ]HUFY

7i a dβf'c`cW]b β'dYbfi 'Uc'ÉbW]f]U'

⇒'a]c'fYXX]hc`cfXc'Ubbi c'Ä'SSSSSSSS"
8]fY'U'ei Ubh'Ua a cbfU]'`hi c'fYXX]hc'Ubbi c`cfXc

J Yb]hi `a Yi 'Ubi U`Vfi hYgY'XY'SSSSSS"

6UbW! 5gg]WfUh]cbY

⇒fU]Ubc

J cffY]'g]di `UFY'i bU'dc`]mU'Ugg]WfUh]j U'
8]fY'WXY'gY]'bhYfYggUhc#U'UX'Uwéi]ghUFY'i bfiUgg]WfUh]cbY

F i a Ybc

5 j fYU'gβ'a]W'a dβf'c'Ug][i fUFY"

Ugg]WfUh]cbY'g `U'WgU
H]dc'X]`Ugg]WfUh]cbY

Ug][i fUFY'XY`cW]b β

Ugg]WfUh]cbY'j]U[]
H]dc'X]`Ugg]WfUh]cbY

Ug][i fUFY'XYVβ'βhcf]Y

Ugg]WfUh]cbY'g `U'j]fU
H]dc'X]`Ugg]WfUh]cbY

Ug][i fUFY'dYj]U β

Ugg]WfUh]cbY'gub]huf]U
H]dc'X]`Ugg]WfUh]cbY

Ug][i fUFY'XY'gβbβhY

Ugg]WfUh]cbY'U hc
H]dc'X]`Ugg]WfUh]cbY

Ug][i fUFY'U hc

Ugg]WfUh]cbY'dYf'[`]`Ub]a U]'Xca Yg]WY
H]dc'X]`Ugg]WfUh]cbY

Ug][i fUFY'dYbfi 'Ub]a U'Y'XYWéa dUb]Y

Ugg]WfUh]cbY'Wébf'c`]`Zi fhc
H]dc'X]`Ugg]WfUh]cbY

Ug][i fUFY'Éb'W'h'XY'Zi fh

dfchYn]cbY'a i hi c
H]dc'X]`Ugg]WfUh]cbY

Ug][i fUFY]'dch'W'fβ

Ugg]WfUh]cbY'g]`VYb]'XY[`]`ghi XYb]
H]dc'X]`Ugg]WfUh]cbY

Ug][i fUFY'dYbfi `ghi XYb]

⇒ a a][fUh]cbY
6UbW



dc`]nnUWt`Yhtj U
H]dc`X]`Ugg]WfUh]cbY

Ug][i fUFYXY[fi d

Ugg]WfUh]cbY`g]`h]rc`X]`dfcdf]YH¼
H]dc`X]`Ugg]WfUh]cbY

Ug][i fUFYXY`dfcdf]YUHY

Ugg]WfUh]cbY`Wtbfrc`Y]`bcbXUh]cb]
H]dc`X]`Ugg]WfUh]cbY

Ug][i fUFY`Eb`WthXY]`bi bXU]]

Ugg]WfUh]cbY`Wtbfrc`[`]]bWbX]
H]dc`X]`Ugg]WfUh]cbY

Ug][i fUFY`Ea dchf]j U]`bWbX]]`cf

DYf`ei Ubh]`a Ygj`gUf]`WtdYfrc`#U3
8 ca UbXUFY`dYf`ei Ubh]`a Ygj`gUf]`WtdYfrc`#U`XU`fUgg]WfUh]cbY

7¾`W`g bhg bhUg][i fUh3

E i U`Ä]`Wtgrc`XY`fUgg]WfUh]cbY3
8 ca UbXUFY]`Wtgrc`XY`fUgg]WfUh]cbY

7¾`W`g`B`Ug][i fUFYU3