

=a a][fUh]cb
5hgi XYfY



5hgi XYfY! 'l b]j Yfg]hYh

8Ubg_

>Y['j] ' [YfbY]bXg_f]j Yg'dÁ`Yhi b]j Yfg]hYh'
5 b[]j `UhXi ' [YfbYj] ']bXg_f]j Yg

BXYf`UbXg_

=_ 'nci 'a]^[fUU[]bgWf]`j Yb`]b`Yb`i b]j Yfg]hYh'

>Y['j] ' [YfbY`gQ[Y`ZU[YhSSSSSSSSSSSSSSSSSSSS"
5 b[]j `UhXi ' [YfbYj] ' `gQ[Y`YhZU[

=_ 'nci 'a]^[fUU[]bgWf]`j Yb`j ccf`SSSSSSSSSSSSSSSSSSSS"

VUWY`cf
: U[

Yb`VUWY`cf`cd`Y]X]b[

_UbX]XUghi XYfYbXY
: U[

Yb`dcb]f`fUXi`UUh

d\"X"!`gh XYfYbXY
: U[

Yb`XcMtf`UUh

Z `Xh]Xg
: U[

Yb`j`c`h`XgY`cd`Y]X]b[

XY`h]Xg
: U[

Yb`XY`h`XgY`cd`Y]X]b[

cb`]bY
: U[

Yb`cb`]bY`Wfg`g

>Y['j] ' [YfbY`gh XYfY`dÁ`XYhY`i b]j Yfg]hYh]
SSSSSSSSSSSSSSSSSSSS"
5 b[]j `]j`cf`Ub[`X]b`i Xj`Y_g]b[`Yf

=_ 'nci ' [fUU[`UUb`i`k`i b]j Yfg]hYh]hgi XYfYb`j ccf`
SSSSSSSSSSSSSSSSSSSS"

YhgYa YghYf
@Ãb[XY`UZ`cd`c`X`j`YX`i XYb`UbXg_`i b]j Yfg]hYh

Yb`gYa YghYf

Yhgi X]YÁf
@Ãb[XY`UZ`cd`c`X`j`YX`i XYb`UbXg_`i b]j Yfg]hYh

Yb`UUMXYa]gW`UUF

<j UX`Yf`UFVY`XgYgf]_h]cbYfbY`Zcf`gh XYfYbXY3
GdQf[`ca`UFVY`XgYgf]_h]cbYf`Zcf`gh XYfYbXY

K`Uhin]`b`XY`VYdYf_]b[Yb`j ccf`hYk`Yf_gY`_]b[]j ccf`
gh XYbYb3

⇒ a a][fU]cb 5hgi XYfY



G_U`Y[j]gY`cd]Yf`UZXY`cf][]bUY`Xc_i a YbHYf
Y`Yf`gY`j Y`XY`cf][]bUY`Xc_i a YbHYf3
GdÔf[`ca `Xi `g_U`UZ`Yj YfY`XY`cf][]bUY`dUd]fYf`Y`Yf`V`ch`cd]Yf

A cYh[_ `XY`_cd]YQb`cZXY`cf][]bY`Y`XcW`a YbHYb`n`Y`Z
]bX]YbYb3

<j UX`Yf`cd]U[Y`gY`g`fUj YbY`h`i`i` b]j Yfg]HYHYb3
<j UX`Vfi [Yg`b`Á`Xi `UbgÔ[Yf`ca `cd]U[Y`gY`d`Á`i` b]j Yfg]HYHYh

K Uhin]`b`XY`hc`Y`U]b[g ccfk UUFXYb`j Ub`XY`i` b]j Yfg]HY]b3

GYbXYf`⇒a][`Yb`Zcfa Y`cd]U[Y`gY`V`f`Á`Z`Y`gY3
GdÔf[`ca `Xi `j]` `a`cX]U[Y`Yb`Zcfa Y`cd]U[Y`gY`gY`f`Á`Z`Y`gY

NIU`_`Yb`Zcfa Y`Y`hc`Y`U]b[`cb]j Ub[Yb3

; UfUbHYfYf`i` b]j Yfg]HYHYh]bX`_j UfHYf]b[3
GdÔf[`ca `i` b]j Yfg]HYHYh]`VmX`Yf`]bX`_j UfHYf]b[

J ccfn]YhXY`i` b]j Yfg]HY]hicc`_`UW`a`a`cXU]Y3

⇒bX`Y`c`XYf`ZU[Yhic[g`Á`Yb`dfU`_`h`_`dYf]cXY3
GdÔf[`ca `X]bY`i` b]j Yfg]HYhZU[`]bX`Y`c`XYf`Yb`dfU`_`h`_`dYf]cXY

6Yj UhiXYWf`g` gcc`_`Yb`g`U[YdYf]cXY3

9f`XYf`ca`_`cg]b]b[Yf`j` YX`U`hgi` XYfY`gca
i`Xj`Y`_`g]b[ggi`XYfYbXY`d`Á`XYHY`i` b]j Yfg]HYb3
GdÔf[`ca `Xi `Yf`b`Ô`X`hi` `Uh`V`Y`U`Y`Zcf`U`hgi` XYfY`gca `i`Xj`Y`_`g]b[ggi`XYfYbXY`d`Á`XYHY`i` b]j Yfg]HYh

N]`b`Yf`g`i`X]Y`_`cg]b]b[ccf`i`]hk`]ggY`]b[ggi`XYbHYb`U`b`i`k`
i` b]j Yfg]HY]b3

<j cfXUb`_`Ub`Y[`ZÔ[`Y`a`]b`UbgÔ[b]b[g`Z`f`Ya [Ub[3
GdÔf[` `j` cfXUb`Xi` `Ub`gY`X]b`UbgÔ[b]b[g`Z`f`Ya [Ub[

<cY`_`Ub`_`XY`j` ccf`i`]h[Ub[`j` Ub`a`]`b`U`ba`Y`X]b[gdfcWg
VY`_`^`_`Yb3

<j UX`Yf`gdfc[_`fUj YbY3
GdÔf[`]bX`h` ` `j` `Y`_`fUj `h` `gdfc[`XYf`g`U`cd`Zm`XYg`Zcf`U`h`_i` bbY`V`]j` Y`cd]U[Yhd`Á`i` b]j Yfg]HYHYh

K Uhin]`b`XY`Ø`U`U`Ø`U`j` YfY]g]Yb3

<j cfXUb`Yf`SSSSSSSSSSSS`gng]Y`a` Yb3
GdÔf[`h` `]b`Zcfa`U]cb`ca` `gng]Y`a` Yh

<cY`k`Yf`_`h` `Yh`SSSSSSSSSSSS`gng]Y`a` 3

gi`X]Ydc]bh
J`i`fXYf]b[gng]Y`a

VfYX]hng]Y`a

VYXÔa`a`Y`gY
J`i`fXYf]b[gng]Y`a

VYccfXY]b[gng]Y`a

: Áf`Y[`Yb`_`U`UX`Ya]g`_i`Xg`_f]Zhg]Xgh]`a`]h
i`Xj`Y`_`g]b[gcd`c`X3
GdÔf[`ca `Xi `g]Xgh]`X]hi`Xj`Y`_`g]b[gcd`c`X`j` `Z`Á`Yb`_`U`UX`Ya]g`_i`Xg`_f]Zh

?`f]`[`]`_`Yb`_`U`UX`Ya]g`_W`_U`Z`g`_W`f]Z`h`c`d` `Y`h`Y]b`XY`j` Ub`a`]`b`
i`]hk`]ggY`]b[3

⇒ a a][fU]cb 5hgi XYfY



< j cfXUb`Yf`i bXYfj]gb]b[gZcfa Yb3
GdÔf[`h` i bXYfj]gb]b[gZcfa Yb

K Y`Y`Yf`a Yh`cXYb`k cfXYb`Yf` [Wfi]_h3

9f`XYf`SSSSSSSSSSSSSS`3
GdÔf[`h` i bXYfj]gb]b[gZcfa Yb

N]`b`Yf`SSSSSSSSSSSSSS`3

ZcfY`Â`gb]b[Yf
? i fgj gmdY

`Yh]b[Yb

gYa]bUfYf
? i fgj gmdY

gYa]bUfg

i bXYfj]gb]b[
? i fgj gmdY

hi hcf]Ug

_cbZYfYbWf
? i fgj gmdY

VcbZYfYbh]Yg

< j]`_Y`ZU[`h` VmXYg`d`Á`gca a Yfg_c`Y3
GdÔf[`ca`]bZcfa U]cb`ca` XY`ZU[`XYf`h` VmXYg`d`Á`gca a Yfg_c`Y

K Y`_Y`Wfg`ggYb`V]YXYb`XY`g` a a Yf`g`Wcc`g`UUb3

< j cfbÁf`U`Z`c`XYg`Y`g`Ja]bYfbY3
GdÔf[`j` cfbÁf`XYf`Yf`Y`g`Ja]bYf

K UbbYf`k cfXYb`XY`Yi`Ua`Ybg[`Y`ci`XYb3

< j cf`_Ub`Y[`Z]bXY`]bZcfa U]cb`ca` ZU[YbY3
GdÔf[`j` cf`Xi` `_Ub`Z]bXY`]bZcfa U]cb`ca` ZU[YbY

K Uf`_Ub`_]`bZcfa U]Y`cj`Yf`U`Y`VYgM`_VUFY`Wfg`ggYb`j`]bXYb3

9f`XYf`Yb`gdcfng`U`d`Á`i`b]j`Yfg]hYhY3
GdÔf[`ca` XYf`Yf`Yb`gdcfng`U`d`Á`i`b]j`Yfg]hYhY

< YZhiXY`i`b]j`Yfg]h]hYb`gdcf`h`Wb`h`fi` a` 3

< j cfXUb`_Ub`Y[`XY`hU[`Y`]`gi`XYbhYfZcfYb]b[Yf3
GdÔf[`j` cfXUb`Xi` `_Ub`XY`hU[`Y`]`gi`XYbhYfZcfYb]b[Yf

< cY`_Ub`_]`hch`Yb`gi`XYbhYb] YfYb][]b[`h`cYf`YXYb3

< j UX`Yf`XYb`Ubg`Á`XY`Y`Y`Yca`_cg]b]b[`]`O`m`C3
GdÔf[`YZYf`XY`Ubg`Á`XY`Y`Y`Yca`_cg]b]b[Yf`]`VmYb

K Uhin]`b`XY`[`Yg`WU`hY`_cg]Yb]j`ccf`Y`Y`b`g`cb`XYf`Y`ci`X`]b`@`h`U`C3

5hgi XYfY!`Gdfc[_i fgYf 8Ubg_

BXYf`UbXg_

=a a][fUh]cb 5hgi XYfY

< j] _Y'gdfc[_Ub'Y['ghi XYfY'dA'g_c`Yb3
GdÔf[`v]] _Y'gdfc[`Xi _Ub'ghi XYfY'dA'g_c`Yb

K Y_Y'fYb'_Ub]_ ghi XYfYb'Uub'i k 'gWcc`3

9f'XYf'Yb'd'UWF]b[ghYghZcf'UhVYXÔa a Y'a]h
bj] YU 3
GdÔf[`ca `XYf'Yf'Yb'd'UWF]b[ghYghZcf'UhVYXÔa a Y'X]hb]j YU

=gYf'Yb'd'Uhg]b[ghcYfrij ccf'a]'b'b]j YU 'HY'VdU'Yb3

? Ub'Y['g_]ZHY'h`YhUbXYhb]j YU `v]]g'XYb'Y[
XY'hU[Yf']]_Y'dUggYf'h`a][3
GdÔf[`ca `Xi _Ub'g_]ZHY'b]j YU `v]]g'Xi]_Y'Yf'h`ZFYXga YX'XYhXi `XY'hU[Yf']

? Ub]_ 'bc['cj YfgWU_Y'Yb'bUUF'Yb'UbXYf'b]j YU 'Ug`Yh
v i]X][Yb]j YU 'b]Yh`Yh'i]gY'g3

< Uf'Xi `Yb'XYhU `YfYhVYg_f]j Y'g'UZ'ZU[Yh3
GdÔf[`ca `XYf'Yf'Yb'XYhU `YfYhVYg_f]j Y'g'UZ'ZU[Yh

< YZhi `Yb [YX'YhU]`YfXY'VYgWf']j]b[j Ub'XY'Wfg g3

< j UX'Yf'XYhia U_g]a U'Y'UbhU `XY'hU[YbXY'ghi XYfYbXY
df''ZU[3
GdÔf[`v] UX'XYhia U_g]a U'Y'UbhU `UZ'XY'hU[YbXY'ghi XYfYbXY'Yf'df''ZU[

K Uh]g`Yhia U]a i a 'UubhU'ghi XYb'Yb'dYf'_'Ug3

< j] _Y'ZUW]jHYf'Z]bXYg'XYf'dA'g_c`Yb3
GdÔf[`v]] _Y'ZUW]jHYf'XYf'Z]bXYg'dA'g_c`Yb

K Uh]b'XY'VYgW]_VUFY'ZUW]jHY]HYb]b i k 'gWcc`3

5 ffUb[YfYf' =c[gA'Y_g_i fg]cbYf3
GdÔf[`ca 'g_c`Yb'c[gA'UffUb[YfYf'Y_g_i fg]cbYf

Cf [Ub]gYf'Yb'f' `Y'cc_`Yi Wfg]Yg3

< j] _Y'dfc[fUa a Yf'h`VnXyg`Yf3
GdÔf[`v]] _Y'dfc[fUa a Yf'XYf'h`VnXyg

K Y_Y'dfc[fUa a Ufg]YX'Yb'f' `Y'Uub3

5hgi XYfY! 'Gh]dYbX]Yf 8Ubg_

BYXYf`UbXg_

>Y[`Yf`Yf'Zcf'UhgdÔf[Y'h`a i `][`YXYfbY'Zcf
gh]dYbX]Yf
GdÔf[`YZHYf'a i `][`YXYfbY'Zcf'gh]dYbX]Yf

=_ 'mci `a]^ [fUU[]bZcfa YfYb'cj Yf'Vi fnYb"

< j] _Y'cf[Ub]gU]cbYf'_Ub'Z]bUbg]YfY'a]hgi X]i a 3
GdÔf[`YZHYf`v]] _Y'cf[Ub]gU]cbYfz'XYf'_Ub'Z]bUbg]YfY'X]hgi X]i a

K Y_Y'cf[Ub]gU]Yg_i bbYb'a]'b'ghi X]Yg]Z]bUbV]YfYb3

>Y[`Uf'Vfi [`Zcf'Ô_cbca]g_`A`d'h`
SSSSSSSSSSSS"
5 b[]j `UhXi `Uf'Vfi [`Zcf'Ô_cbca]g_`A`d

=_ `W'bccX'Uub'Z]bUbV]ÇY`i `dj ccf 'SSSSSSSSSSSS"

=a a][fUh]cb 5higi XYfY



gi X]Y[YVmfYf

]bgWf]j]b[g]YX

GdÔf[YfzXi \UFV\cj ZcfÔ_cbca]g_gÔtY'h`

`Yj Yca _cgb]b[Yf

_cgb]b[ccf`Yj YbgcbXYf\ci X

GdÔf[YfzXi \UFV\cj ZcfÔ_cbca]g_gÔtY'h`

VÔfbYdUgb]b[

_]bXYfcdj Ub[

GdÔf[YfzXi \UFV\cj ZcfÔ_cbca]g_gÔtY'h`

<j]_Y'gU[g'g]dYbX]Yf'Yf'h` [Âb[Y][Y3

K Y_Y'g'ccfHb'gi X]WYi fnYb'n]'b Yf VYgW]_VUf3

GdÔf[\j]_Yb'gU[g'g]dYbX]YfzXYf'Yf'h` [Âb[Y][Y

5higi XYfY! ; cX_YbXY'gy'UZi XYb`UbXg_Y'i XXUbbY'gyf

8Ubg_

BXYf`UbXg_

>Y[j]' [YfbYj U]XYfY'a]hUZgi HbXY

=_nci '[fUU['a]'b'X]d'ca Uj U]XYfYb]'b'OUbXQ

Y_gLa YbgYj]g]'OUbXQ

5 b[]j 'UhXi '[YfbYj]' j U]XYfY'X]hUZgi HbXY'Y_gLa YbgYj]g]'OUbXYh

< UF'=Yb`]'gh'cj Yf'Wfh]Z]WfYXY'cj YfgÂHhYfY'Zcf
Qgdfc[Q3

< YZhi 'Yb`]'ghj Ub'VYQ][XYj YfHjYfgj ccf \YhOUUQ3

GdÔf['ca 'XYf'Yf'Yb`]'gh'cj Yf'Wfh]Z]WfYXY'cj YfgÂHhYfY]'XYhgdfc['Xi \UFV\cj Zcf

<j cf'_Ub'Y[ZÁ'YhÂ_j]j UYbgWfh]Z]_Uh3

K UUF'_Ub]'_Yb[Y]^_k UUFX][\Y]Xg]HhYghj Yf_f]'Yb3

GdÔf[\j cf'Xi '_Ub'ZÁ'YhÂ_j]j UYbgWfh]Z]_Uh