I b]j YfgU``Cf`UbXc`]g`[ c]b[ `U```ci h`k ]h\ `]hg`ZYgh]j ]h]Ygž'ZYUhi f]b[ `U fY]a U[]bYX'J]``U[Y'cZ'5a]hm']b'h\Y'GUb': fUbW]qWc'UfYU'cZ'h\Y dUf\_"\*+hg`h\Y`dYfZYWh`gdch`hc`gcU\_`]b`h\Y`bcghU`[]Wj]VYg`k]h\ `]a ]hYX!h]a Y`ZccXžXf]b\_gžUbX`a YfW\UbX]gY`h\Uh`dUm`hf]Vi hY`hc h\Y ]Wcb]Wg\Uf\_ Z]`a " 5g =bg]XY I b]j YfgU` fYdcfhgžh\]g WY`YVfUh]cb`]g`bch'i gh'U`cbY!XUm'UZZU]f/`]hg`dUfh`cZ`U`gi a a Yf!

#### Ubb]j YfgUfmh\]g a cbh\"

< c``mk ccXžI G5 ! 5g h\Y gi a a Yf \YUhg i džI b]j YfgU``Cf`UbXc FYgcfh]g'Vi nn]b[ 'k ]h\ YI W]hYa Ybh'cj Yf'gYj YfU` a U'cf'Yj Ybhg'UbX WY`YVfUh]cbg"'H\Y'k YY\_cZ'\$ bY`&' ž&\$&) žVf]b[g'U'[fUbX'cdYb]b[ Zcf'h\Y'a i W\!Ubh]W]dUhYX'9d]WI b]jYfqYž'Ug'k Y```Ug'U'gdYW]U`  $cVqYfjUbWY^{Z}cf^{h}Y^{Z}]^{a} + JkqZ^{k} ]WV^{g}WY^{Y}fUh]b[^{h}h^{h})$ 



I b]j YfgU`dUf\_g'WY`YVfUhY'h\Y') \$h\'Ubb]j YfgUfmcZ'sUk g'k ]h\ h\Ya YX`Yj Ybhgža YfW\UbX]gYžUbX`gdYW]U``YI dYf]YbWYg Zfca '> bY &' ž & \$ &) "

# I b]j YfgU``DUf\_g'I b`YUg\ '9d]W 7YYVfUh]cbgZcf>Ukg/ <math>(\$' - /) $h^{\circ}$

UXa ]gg]cb"

5gʻdUfhʻcZʻh\YʻZYgh]j ]h]YgžʻI b]jYfgU``Cf`UbXcʻ]gʻU`gcʻdfci X`m WY`YVfUh]b[ `Df]XYʻA cbh\ʻk ]h\`]hgʻ @cjYʻ]gʻI b]jYfgU` `WJa dU][ b" H\Ya YXʻZccXžʻXf]b\_gžʻUbXʻYI W]h]b[ `a YfW\UbX]gY`UfY`cbʻcZZYfž ]bWi X]b[ `gdYW]U``@cjY`]gʻI b]jYfgU``B][ \hgʻUhʻh\YʻFYXʻ7cWcbi h 7`i VʻYjYfmʻH\i fgXUmžʻ: f]XUmžʻUbXʻGUhi fXUmʻh\fci [ \ci hʻi bYž U``ck ]b[ `[ i YghgʻcjYfʻ&%ʻhcʻXUbWYʻh\Yʻb][ \h'Uk Umʻk ]h\ʻZfYY

# 5b = b Wig]jY 7Y YVfUh]cb

: cf`a cfY`XYhU]`gž`<mark>K 8K `BYk g`HcXUm`</mark>\Ug`h\Y`Wca d`YhY``]gh`cZ a YfW\UbX]gYž`]bWi X]b[`i b]ei Y`]hYa g``]\_Y`h\Y`6YUW\`=g`7`cgYX`d]b UbX`U`Wc``YWh]V`Y`gdccb`ZYUhi f]b[`h\Y`Ubb]j YfgUfm``c[c"

- ≯Jk g`) \$h\ 5bb]j YfgUfm7cc`Yf6U[ 'ff (\$Ł
- ≯Jk gʻ) \$h\ 5bb]j YfgUfm 6i ₩\_Yh < Uh ff ' \$Ł
- Jkg') \$h\ 5bb]j YfgUfm'G\Uf\_D`ig\ Hcm'fl &&Ł
- ≯Jk g<sup>\*</sup>) \$h\ 5bb]j YfgUfmJ!bYW\_G\]fh fl ' +Ł
- ≯Jk g`) \$h\ 5bb]j YfgUfm HUb\_ Hcd ff ' +Ł

 $H \setminus Y^{-}Z^{-} \xrightarrow{} Wc \xrightarrow{} YWh ] c b^{-}] b Wi XYg.$ 

6i hih Uhgibch U````H Ya YfW UbX]gYicddcfhi b]h]YgiUfYiU`gc ]a dfYgg]j Y'': UbgiWUbiW ccgYiZfca iUij Uf]YhmicZi]hYa giXYg][bYXihc Wca a Ya cfUhYih YiUbb]j YfgUfmži]bWi X]b[iUixUk gi) \$h 5bb]j YfgUfmiG]ddYfiUbXiUifUb[YicZiUddUfY`igi W iUgihUb\_ihcdgiUbX \Uhg''i =h giUihfYUgi fYihfcj YiZcfiWc``YWhcfgiUbXiZUbgiU`]\_Y''5j U]`UV`Y Zfca iA Umi&'ihciximi\*žih YgYi]hYa giUfYiZm]b[icZZih Yig YijYgiUh h Yil b]j YfgU`iCfiUbXciFYgcfhiUbXiI b]j YfgU`iGhi X]cgi<c``mk ccX''

=\\\X`HYU`UbX`ch\Yf`h\Ya YX`Xf]b\_g"`

 $5 cb[g]XY'hY']a a Yfg]j Y'hYa YX'YI dYf]YbWYž'[i Yghg'WUb'gbUW_cb'gdYW]U``m'WfUZhYX'X]gYg'`]_Y'hYY'6i W_Yh'cZ'6U]h'UbX'@cVghYf HU]`mU_]ž'k UgY]b['hYa 'Xck b'k]hY'hYYfYZfYgY]b['5a]hm'=g`UbX$ 

# : Ygh]j Y C ZZYf]b[g Zcf Jk g : Ubg

`cb[ dUfhm`h\Uh`ghUfhg`bck UbX`fi bg`i bh]`'YUf`m`≯`m°

@cc\_]b[ 'Zcf'gca Y'a U[ ]WU``a ca Ybhg3': fca '\$ bY'&' 'hc'5i [igh'%\$ž a YYh'9`d\UVU'UbX'; `]bXU'Uh' K ]W\_YX.'H\Y'9I dYf]YbWY" '5bX'Zcf h\cgY'k \c'WUb h'[Yh'Ybci [\`cZ'h\Y'h\f]``ž'W\YW\_'ci h'A'; 5B'&"\$ž fibb]b[ 'Zfca '\$ bY'%\$'i bh]``h\Y'YbX'cZ'h\Y'a cbh\"

#### @cc\_]b[ : cfk UfX hc A cfY

H\YfY g'Yj Yb'a cfY'cb'h\Y'\cf]ncbž'Ug'h\Y'YI W]hYa Ybh'Vi ]`Xg'Zcf h\Y'⇒``m'&'dfYa ]YfY'cZ' ⇒ fUgg]WK cf`X. `FYV]fh\" '=g`UbX'cZ 5Xj Ybhi fY'k ]```ZYUhi fY'h\Ya YX'd\chc'cdg'UbX'YI Wi g]j Y'ZccX ]hYa g'Uh'H\Y'6i f[Yf'8][g'hc'Wca a Ya cfUhY'h\]g'fY`YUgY"'A cfY UhhfUWh]cbg']b'h\Y'dUf\_ž']bWi X]b[ 'bYk 'UXX]h]cbg'UbX fYZi fV]g\a Ybhgž'UfY'U`gc'gYh'hc'Yb\UbWY'h\Y'gi a a Yf'YI dYf]YbWY"

K \Yh\Yf`mci fY`Ub`UXfYbU`]bY`1 b\_]Yž`U` \$Uk g `gi dYfZUbž`cf`1 gh k Ubh`hc`Yb^cm`h\Y`ZYgh]j Y`Uha cgd\YfYž`h\]g`]g`h\Y`dYfZYWh`h]a Y`cZ mYUf`hc`j ]g]h`I b]j YfgU``Cf`UbXc`FYgcfh"`K ]h\`gca Yh\]b[`cb`cZZYf Zcf`Yj YfmcbYž`]h g`WfmghU``WYUf.`h\YfY g`U`k \]f`k ]bX`cZ`Zi b`k U]h]b[ hc`VY`\UX`h\]g`gi a a Yf°

8 Y hU]`g	
Cfh	<c``mkccxžig5< th=""></c``mkccxžig5<>
EiY``Yb	• k k k "]bg]XYi b]j YfgU`"bYh
	<ul> <li>V`c[ "X]gWcj Yfi b]j YfgU`"Wca</li> </ul>
	• k X k b h"Wca

#### 6Ygi WiYb'G]Y'i bg'Ui Z.'a Y]b!k ]Yb"bYh