

# EDST5106

6Y\Uj]cifAUbU[YaYbhcZ9IWdh]cbU~GhXYbhg

GYa YghYf Hk c \*\*#\* &\$%

EDST5106 Semester 2, 2018 published at 01-08-2018 //  $^{\odot}$  University of New South Wales, 2018

# 7 ci fgY<sup>·</sup>Cj Yfj ]Yk

## `GHJZZ`7cbHJWh`8YHJ]`g`

#### 7cbj Ybcfg

BUa Y	9a U]`	5j U]`UV]`]m	@cWUhjcb	D∖cbY
HYffm7iaa]b[	0	Uddc]bha Ybh	F cca *‰-ž >c\b; ccXgY** 6i]X]b[	-',)`%-((

#### GWXcc``7cbHJWhi=bZcfaUh]cb

GVX.cc``cZ9XiVWhjcb 5fhg`UbX`GcWjU``GWjYbVYg @YjY``%Z`>c\b'; ccXgY```6i]`X]b[`fl&\$Ł

H. 'Ž\*%'f&Ł'-',) '% ++ 9. 'YXi WUhjcb4 i bgk "YXi "Ui K. 'YXi WUhjcb"Ufhg"i bgk "YXi "Ui

#### 5 HYbXUbWYFYei]fYaYbhg

#### 5XX]h]cbU``GW&cc``cZ'9XiWUh]cb`UhhYbXUbWY`fYei]fYaYbhg

If JG YL dYWYX IN UNUbmighi XYbhYbfc "YX"]b'Ub'98 GH Wei fgY'k ]N IN Y GWLCC "CZ9Xi WUhcb'k ]" a U\_Y'U We a a ]na Ybhihe IN Y]f"YUfb]b[ 'UbX'UhYbX'U" WUggYg']b'Z ""k \YfY WebhYbh]g'XY"]j YfYX ]b'U'ZJWY!he!ZJWY a cXY YL Widh]b'WffU]b'WffW]a gHUbW g'k \YfY UVgYbWY ]g'Xi Y'he ]"bYggža ]gUXj Ybhi fY effi bZefYgYYb WjfW a gHUbW g'k \YfY UVgYbWY ]g'Xi Y'he ]"bYggža ]gUXj Ybhi fY effi bZefYgYYb WjfW a gHUbW g'k \YfY UVgYbWY ]g'Xi Y'he ]"bYggža ]gUXj Ybhi fY effi bZefYgYYb WjfW a gHUbW g'U'gh XYbhg Webhee" 5 a ]b]a i a 'UhYbXUbWY fYei ]fYa YbheZ, \$i \_]g'fYei ]fYX'Zef YUW. Wei fgY" I wiffU]b'WffW a gHUbW gžU'gh XYbha Uma ]gg'i d'he &\$i \_eZU'Wei fgY'k ]N ei hZefa U'Udd']WUhjeb'UbX'i d'he "' i \_eZU'Wei fgY'k ]N 'Zefa U'XeW a YbhUhjeb'fgYbhj ]U'Ya U]"he Wei fgY Webj Ybeft dfej ]X]b[ 'U" TN Y'fYei ]fYa Ybhg'XYHU]YX'VY'ek 'UfY'a Yh''Ghi XYbhg'beha YYhjb[ 'N Y UhYbXUbWY fYei ]fYa Ybhg'ez H\Yfy UkUfXYX'Ub'I bgUhjgZUWefm: U]"fl : EZef'N UhYbXUbWY fYei ]fYa Ybhg'ez K'gg'cZ NY]f'dYfZefa UbWY ]b'NY 'UggYgga YbhHug\_g'effeN Yf'f'ei ]fYa Ybhg'Zef'N Y'Wei fgY"

: cf<sup>·</sup>Z fh\Yf<sup>·</sup>]bZcfa Uh]cb<sup>·</sup>cb<sup>·</sup>9Xi WUh]cb<sup>·</sup>Wci fgY<sup>·</sup>UhhYbXUbWY<sup>·</sup>fYei ]fYa Ybhgžd<sup>·</sup>YUgY<sup>·</sup>fYZYf<sup>·</sup>hc<sup>·</sup>h\Y<sup>·</sup>fYgdYWf]j Y 98GH<sup>·</sup>A ccX<sup>·</sup>Y<sup>·</sup>a cXi <sup>·</sup>YfgŁ<sup>"</sup>

#### 5WUXYa]W=bZcfaUhjcb

: cf`YggYbhJU``ghi XYbh]bZcfa UhJcb`fY`UhJb[`hc.`fYei Yghg`Zcf`YI hYbg]cb/fYj ]Yk `cZa Uf\_g/cVWV dUhJcbU``\YU`h UbX`gUZYhm'YI Ua ]bUhJcb`dfcVWXi fYg/gdYVJU``Vcbg]XYfUhJcb`]b`h\Y`Yj YbhcZ]``bYgg`cf`a ]gUXj Ybhi fY/ ghi XYbhYei ]hmUbX`X]gUV]`]hm'UbX`ch\Yf`YggYbhJU``UVUXYa ]W]bZcfa UhJcbž gYY`<u>\hdg.#k k k "Ufhg"i bgk "YXi "Ui #W ffYbhIghi XYbhg#JVUXYa ]W]bZcfa UhJcb#dfchcVc`g![i]XY`]bYg#</u>

# 7ci fgY<sup>·</sup>8YHJ]`g

## 7 fYX]hDc]bhg\*\*\*

## Kcf\_`cUX

%) \$`\cifg`]bWiX]b[`WUgg`WebHUWi\cifgžfYUX]b[gžWUgg`dfYdUfUH]cbžUggYggaYbHžZe``ck`id`UWNjj]H]Ygž YHW

## Gi a a UfmcZ'h Y'7 ci fgY

H\Y`ZcWg`cZh\]g`WcifgY`]g`cb`Udd`]YX`VY\Uj]cif`UbU`mg]gžUbX`\ck`]h]g`UVWcad`]g\YX`h\fci[\`h\Y`igY`cZ ZibWf]cbU``VY\Uj]cifU``UggYggaYbhUbX`g\_]``g`HU]b]b["

Mci 'k ]```YUfb'UVci hthY'a cXY`gž'hYcf]Ygž'UbX'd\]`cgcd\]Yg'hUhZcfa 'hY'VUg]g'cZgci bX']bWi g]j Y YXi WUhJcbU``UbX'VY\Uj ]ci fU``dfUWf]WY" Mci 'k ]```YUfb'\ck 'hc'UggYgg'VY\Uj ]ci fž'hYUW\'bYk 'g\_]``gž'UbX a UbU[Y'VY\Uj ]ci fž'Vch\'UWUXYa ]WUbX'gcW]U`"'H\Y'ghYb[ h\g`UbX'k YU\_bYggYg'cZWca a cb'gW\cc` dfUWf]WYg'Zcf`XYWfYUg]b[ 'ghi XYbhgfi]bUddfcdf]UhY'VY\Uj ]ci f'k ]```VY'X]gW ggYXž'UbX'ghTUhY[ ]Yg'Zcf dfca ch]b[ 'dfcgcW]U``VY\Uj ]ci f'k ]``VY'XYgWf]VYX" Mci 'k ]``'dfUWf]WY'Wc``YWf]b[ 'UbX'UbU`mg]b[ 'XUhU'UbX'i gY h\]g']bZcfa Uh]cb'hc'k f]hY'VY\Uj ]ci fU``]bhYfj Ybh]cb'd`Ubg"'Mci 'k ]``'U`gc'i gY'h\Y'\_bck`YX[ Y'[ U]bYX']b'h\Y Wci fgY'hc'XYg][ b'UbX']a d`Ya YbhU'gcW]U``g\_]``g'hTU]b]b[ '`Yggcb"

## 5 hih Y WobWi g]cb cZih ]g Woi fgY h Y ghi XYbhik ]``VY UV Y hc

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- ghfi Whi fYX`cVWUg]cbg`Zcf`fYZYWhjcb`cb``YUfb]b[`hc`U``ck`ghi XYbhg`hc`fYZYWhiWf]hjWU``micb`]ggi Yg X]gWiggYX/
- YI HYbg]j Y'cddcfhi b]h]Yg'Zcf'k \c'Y'[fci d'UbX'ga U```[fci d'X]U`c[i Y'UbX'X]gW gg]cbź'U``ck ]b[ ghi XYbhg'h\Y'cddcfhi b]mihc'XYa cbghfUHY'h\Y]f'WUdUW]mhc'Wca a i b]WUHY
- H\YgY`UW{jj ]hjYg`k ]```c\WV f`]b`U`W]a UhY`h\Uh`]g`gi ddcfhjj Y`UbX`]bWi g]j Y`cZU```YUfbYfg"

fYdcfhg"

5ggYgga Ybh& Hc\_Yb YWcbca m

GHJfhXUHY.Bch5dd`]WUV`Y

**8YHJ]`g**. `HUg\_`&'!`5gg][ ba Ybh'!`%) \$\$`k cfXgGh XYbhg`k ]```fYWY]j Y`k f]HYb`ZYYXVUW\_`k ]h\]b`%\$`Vi g]bYgg XUmg`cZgi Va ]gg]cb

5XX]h]cbU``XYHJ]`g.

5ggYgga YbhHJg\_ & 8Yj Y`cda YbhcZU'Hc\_Yb'9Wcbca m

Ghi XYbhgik ]``XYj YicdiUHc\_Ybi9Webea mVUgYXiebiUiYWhi fYiVmh\Yi]bghfi Wref"`H\YidiUbi]giheiVYihmdYXi]b UidfeZygg]ebUiik f]h]b[iighmY"'H\YidiUbik ]``]bWi XY.

%"H\Y'HUF[Yhdcdi`UH]cb &"FYei]fYX'VY\Uj]cifg`fkf]HHYb`dcg]h]jY`mL '"@]ghcZfY]bZcfWYfg`UbX'hc\_Yb`WcghcZYUW\`fAYbiŁ ("K\Uhik]``VY`igYX`Ug`hc\_Ybg )"<ck`hc\_Ybg`k]``VY`ghcfYX

<ck 'hc\_Ybg'WUb'VY'YI WXUb[YX'fk \YfYž'k \Ybž'k \Uh'k]``ch\Yf'ghi XYbhg'VY'Xc]b[3Ł

Hi fb]h]b`gYh]b[.`H\]g`Ugg][ ba Ybh]g`gi Va ]hhYX`h\fci [\`Hi fb]h]b`UbX`gh XYbhg`WUb`gYY`Hi fb]h]b`g]a ]`Uf]hm fYdcfhg"

5ggYgga Ybh'. 6Y\Uj]ci fWXUb[YdfcYWh

GHJfhXUhY. Bch5dd`]WUV`Y

**8YHJ]`g**. `HUg\_'' `!`5gg][ ba Ybh!'' \$\$\$`k cfXgGh XYbhg`k ]```fYWY]j Y`k f]HYb`ZYYXVUW\_'k ]h\]b`%\$`Vi g]bYgg XUmg`cZgi Va ]gg]cb

5XX]h]cbU``XYHJ]`g.

5ggYgga YbhHJg\_''.6Y\Uj ]ci f'7\Ub[Y# i bWf]cbU``6Y\Uj ]ci fU``5ggYgga YbhDfcYWh

7 < CCG9CB9C: H < 9:C@@CK = B;.

="1 g]b[ 'h\Y'hYW\b]ei Yg'cZ5dd`]YX'6Y\Uj ]ci fU`'5bU'mg]gž'UWWYYfUhY'cf'XYWYYfUhY'h\Y'ZfYei YbWmcZU HUf[YhVY\Uj]ci f"'Nci 'UfY'hc'i gY'cbY'cZh\Y'UWWYdhYX'fYgYUfW\'XYg][bg'Zcf'g]b[ 'Y'gi VYWigh X]Yg"'Nci k ]```[ Uh\Yf'VUgY`]bY'XUhU'cb'h\Y'hUf[YhVY\Uj ]ci f'Zcf'cbY'k YY\_'fUh`YUgh) 'XUhU'dc]bhgłz'h\Yb'XYg][ b'UbX ]a d`Ya YbhUb']bhYfj Ybh]cb'Zcf'h\Y'bYI hZci f'k YY\_g"'Nci f'k f]hhYb'dfc'YWik ]``]bWi XY.

%" 8Yg₩]dh]cb`cZh\Y`gi VYWh

- &" CjYfj]Yk `cZgi VYWig`VY\Uj]ci f`fUWUXYa]WUbX`gcWjU``glfYb[h\g`UbX`kYU\_bYggYgŁ
- ' " GłUłY ł\Y dfcV Ya `]b VY \Uj ]ci fU` łY fa g
- (" +bHYfj Ybh]cb'd`Ubž`]bWi X]b[ 'U`Vf]YZfYj ]Yk 'cZh\Y`W ffYbh``]HYfUh fY`↑gh]Zm]b[ 'mci f`W\c]WY`cZ ]bHYfj Ybh]cb

)"; fUd\g

\*" 8]gWgg]cb'cZfYgi`hg

="7\ccgY'U'gh XYbhk ]h\'U'VY\Uj ]ci f'dfcV'Ya "'

% K f]hY`i d`UbYWXchU``cVgYfj Uh]cb`bchYg`Zīca `Ub`cVgYfj Uh]cb`fl \$`a ]b``cb['Ł'`A U\_Y`gi fY`hc`]bWi XY h\Y`gYhi]b[``UbX`Yj Yfmh]b[``h\Uh`]g`[ c]b[`cb`Xi f]b[``h\Y`cVgYfj Uh]cb''

&" A U\_Y Ub 567 WWUfhZfca 'h Y cVgYfj Uhcb bchYg"

' " 7 cbglfi Wibch/gʻZfca 'h/UWXYf'UbX'dUfYbhifUbX'gh XYbhž']ZUdd`]WUV`YE']bh/fj ]Yk g"

- (" 7 fYUHY Ubmch Yf XUHU #cfa g h Uhmci ZYY k ci X VY \Y dZ +bYW ggUfm"
- ) "I g]b[ 'h\Y`XUHU'Zfca 'h\Y`Zcfa g#bHYfj ]Yk gžWca d`YHY'h\Y`: i bWfjcbU``6Y\Uj ]ci fU``5ggYggYa Ybh Zcfa 'fUj U]`UV`Y`cb'h\Y`A ccX`Y`g]HYŁ
- \*" Eg]b[ `U```cZh\Y`]bZcfa Uh]cb`UVcj YžXYg][ b`U`6Y\Uj ]ci f`≢bhYfj Ybh]cb`D`Ub`fl gY`Zcfa `Uj U]`UV`Y`cb A ccX`YŁ'Zcf`h\Y`gh XYbh'

Hi fb]h]b`gYh]b[.`H\]g`Ugg][ ba Ybh]g`gi Va ]hYX`h\fci [\`Hi fb]h]b`UbX`gh XYbhg`WUb`gYY`Hi fb]h]b`g]a ]`Uf]hm fYdcfhg"

# I BGK G7 < CC@C: 981 75H€B FI 6F =7 # 998657? G < 99H

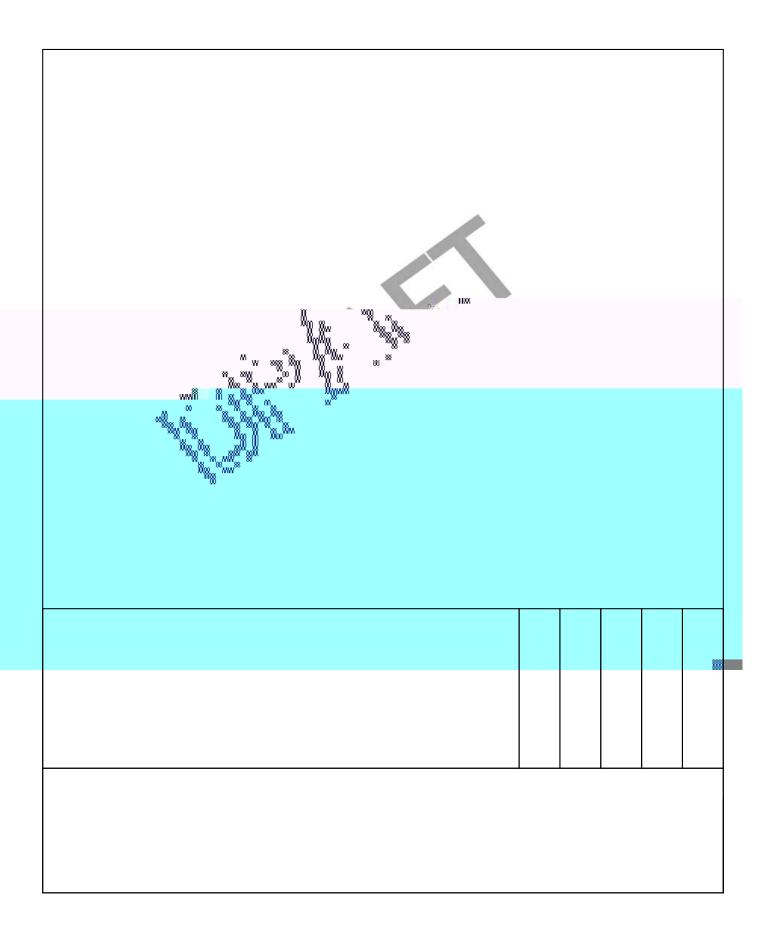
## 98GH) %\$\*

## 5ggYgga YbhHUg\_. GcWJU`g\_]``g``Yggcb

GdYWJZJW7fJHYfJU			∵f!Ł2fŽł		
IbXYfgHUbX`cZ`h\Y`eiYgh]cb`cf`]ggiY`UbX`h\Y`_YmWcbWYdhg ]bjc`jYX					
<ul> <li>i bXYfgHUbX]b[ 'cZh\Y'HUg_'UbX']hg'fY`Uh]cbg\]d'hc'fY`Yj Ubh UfYUg'cZh\Ycfmž'fYgYUfW\'UbX'dfUWf]Wf</li> <li>WUf]hmUbX'UWW fUWm]b'i gY'cZ_YmHYfa g'UbX'WcbWYdhg']b gcW]U`'g_]``g'hfU]b]b[</li> </ul>					
8Ydh\`cZ'UbUmg]g`UbX#cf`Wf]heiY`]b`fYgdcbgY`hc`h\Y`HUg_					

@YWhifYf FYWcaaYbXYX.

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FYWcaaYbXYX. #&\$`f!@`DG`7F`8B`<8Ł

k Y][∖h]b[∴&\$ı

``B6.`fk]g`fjW\_g`]b`fkY`j Uf]ci g`Vcl Yg`UbX`XYg][ bYX`fc`dfcj ]XY`ZYYXVUW\_`fc`gh XYbfg/fkYmUfY`bch[ ]j Yb Yei U``kY][ \h]b`XYfYfa ]b]b[`fkY`fYWca a YbXYX`[ fUXY''`8YdYbX]b[`cb`fkY`bUh fY`cZfkY`UggYgga Ybh'fUg\_ž

# IBGK G7<CC@C: 98175H€BF16F =7 # 998657? G<99H

98GH) %\$\*

5ggYgga YbhHUg\_. 6Y\Uj]cifW\Ub[YdfcYWh

GdYWJZJW7f]HYf]U	∵flŁ—		 	2fŽŁ
bXYfgHJbX`cZh\Y`eiYgh]cb`cf`]ggiY`UbX`h\Y`_YmWcbWYdhg bjc`jYX				
<ul> <li>i bXYfgfUbX]b[ cZh\Y Hug_UbX ]hg fY Uh]cbg\]d hc fY Yj Ubh</li> </ul>				
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@Y₩hifYf

FYWca a YbXYX. \*\*\*\* #&\$`f! @`DG`7F`8B`<8Ł`

k Y][∖h]b[∵.\*&\$ı

"B6. h\]g'h]W\_g']b'h\Y'j Uf]ci g'Vcl Yg'UbX'XYg][bYX'hc'dfcj]XY'ZYYXVUW\_'hc'ghi XYbhg/h\YmUfY'bch[]j Yb Yei U``k Y][\hi]b'XYhYfa]b]b['h\Y'fYWca a YbXYX'[fUXY"'8YdYbX]b['cb'h\Y'bUhi fY'cZh\Y'UggYgga YbhHUg\_ž `YWhi fYfg'a Um'U`gc'WcbhYI hi U`]nY'UbX#cf'Ua YbX'h\YgY'gdYWJ]WYf]hYf]U"''<u>H\Y'fYWca a YbXYX'[fUXY']g</u> <u>hYbHUh]j Y'cb`mž'gi Va 'YWhic 'gHUbXUfX]gUh]cb'dfcWYggYg'UbX'Uddfcj U`Vmh\Y'GW\cc`'cZ'9Xi WUh]cb</u> @YUfb]b['UbX'HYUW\]b['7 ca a ]hHYY"

## Gi Va ]gg]cb cZ5ggYgga YbhHUg\_g

Ghi XYbhgʻUfYʻYI dYWhYXʻhcʻdi hih\Y]fʻbUa YgʻUbXʻghi XYbhibi a VYfgʻcbʻYj YfmdU[YʻcZh\Y]fʻUgg][ ba Ybhgʻ

## Hi fb]hjb Gi Va ]gg]cb

Zmci YbWci bhYf'U'dfcV'Ya 'k \Yb'UhhYa dhjb[ 'hc'gi Va ]hmci f'Ugg][ ba Ybhh\fci [ \ 'Hi fb]hjbž'd'YUgY hY'Yd\cbY'9I hYfbU''Gi ddcfhcb'-', ) '' ' '%cf'Ya U]`'h\Ya 'cb'<u>Yl hYfbU'hY'hgi ddcfh4 i bgk "YXi "Ui</u>"'Gi ddcfh \ci fg'UfY', .\$\$Ua '-'%\$.\$\$da 'cb'k YY\_XUmg'UbX'-.\$\$Ua '-') .\$\$da 'cb'k YY\_YbXg'fl \*) 'XUmg'U'mYUfŁ'' Zmci UfY'i bUV'Y'hc'gi Va ]hmci f'Ugg][ ba YbhXi Y'hc'U'ZJi `hk ]h\ 'Hi fb]hjb'mci 'a UmUdd`m'Zcf'Ub'Yl hYbg]cbž'Vi hmci a i ghfYhU]b'mci f'hjW\_Yhbi a VYf'Zfca '9I hYfbU`'Gi ddcfhfU'cb[ 'k ]h\ 'Ubmch\Yf'fY'Yj UbhXcW a YbhgŁ'hc ]bWi XY'Ug'Yj ]XYbWf'hc'gi ddcfhmci f'Yl hYbg]cb'Udd`]WUhjcb'''Zmci 'Ya U]`'9I hYfbU`'Gi ddcfhimci 'k ]`` Ui hca UhjWU`mfYWf]j Y'U'hjW\_Yhbi a VYfž'Vi h]Zmci 'hY'Yd\cbY'mci 'k ]``bYYX'hc'gdYWJZWU`mUg\_'Zcf'cbY''

### 5WUXYa ]W<cbYghmUbX D`U[ ]Uf]ga

D`U[]Uf]ga `]g`i g]b[`h\Y`k cfXg`cf`]XYUg`cZch\Yfg`UbX`dfYgYbh]b[`h\Ya `Ug`mci f`ck b"`=h\Wb`hU\_Y`a Ubm Zcfa gžZca `XY`]VYfUhY`W\YUh]b[`hc`UWV]XYbhU``mWcdm]b[`Zfca `U`gci fW`k]h\ci hUW\_bck`YX[Ya Ybh'

IBGK '[fcidg'd`U[]Uf]ga ']bhc'h\Y'Zc``ck]b['WUhY[cf]Yg.

7 cdm]b[..i g]b['h\Y'gUa Y'cf'j Yfmig]a ]`Uf'k cfXg'hc'h\Y'cf][]bU``hYI hcf']XYU'k ]h\ci hUW\_bck `YX[]b['h\Y gci fW'cf'i g]b['ei chUh]cb'a Uf\_g"'H\]g'U`gc'Udd`]Yg'hc']a U[Ygž'UfhUbX'XYg][b'dfcYWfgž'Ug'k Y```Ug dfYgYbhUh]cbg'k \YfY'gca YcbY'dfYgYbhg'Ubch\Yf'g']XYUg'cf'k cfXg'k ]h\ci hWfYX]h'

7 c``i g]cb.'k cf\_]b[ 'k ]h\'ch\Yfg'Vi hdUgg]b[ 'cZthY'k cf\_'Ug'U'dYfgcb'g']bX]j ]Xi U``k cf\_"'7 c``i g]cb'U`gc ]bWi XYg'dfcj ]X]b[ 'mci f`k cf\_'hc'Ubch\Yf'gh XYbhVYZcfY'h\Y'Xi Y`XUhYžcf'Zcf'h\Y'di fdcgY'cZh\Ya d`U[ ]Uf]g]b[ 'UhUbmh]a Yž'dUm]b[ 'Ubch\Yf'dYfgcb'hc'dYfZcfa 'Ub'UWUXYa ]WhUg\_žghYU`]b[ 'cf'UV&i ]f]b[ Ubch\Yf'dYfgcb'g'UWUXYa ]Wk cf\_'UbX'Wcdm]b[ ']hž'cZYf]b[ 'hc'Wca d`YhY'Ubch\Yf'dYfgcb'g'k cf\_'cf'gYY\_]b[ dUma YbhZcf'Wca d`Yh]b[ 'UWUXYa ]Wk cf\_"

=bUddfcdf]UhY`W]hUh]cb.`7]h]b[`gcifWYg`k\]WX`\UjY`bchVYYb`fYUXžk]h\cihUW\_bck`YX[]b[`h\Y`″gYWcbXUfm´ gcifWY`Zfca`k\]WX`\_bck`YX[Y`cZh\Ya`\Ug`VYYb`cVHJ]bYX"

8id`]WUh]cb`fl´gY`Zd`U[]Uf]ga ″Ł`gi Va]hh]b[`mcif`ckb`kcf\_ž`]b`k\c`Y`cf`]b`dUfhž`k\YfY`]h\Ug`dfYj]cig`m



'\$`GYdHYa VYf		
K Y _ % . * % 5 % VY / +	<b>85</b>	fDi V <del>i]</del> W <c`]xumi ibciwugg<="" td=""></c`]xumi>
		7 ca d`YhY`h\Y`Zc``ck ]b[ 'cb`]bY`a cXi `Yg.