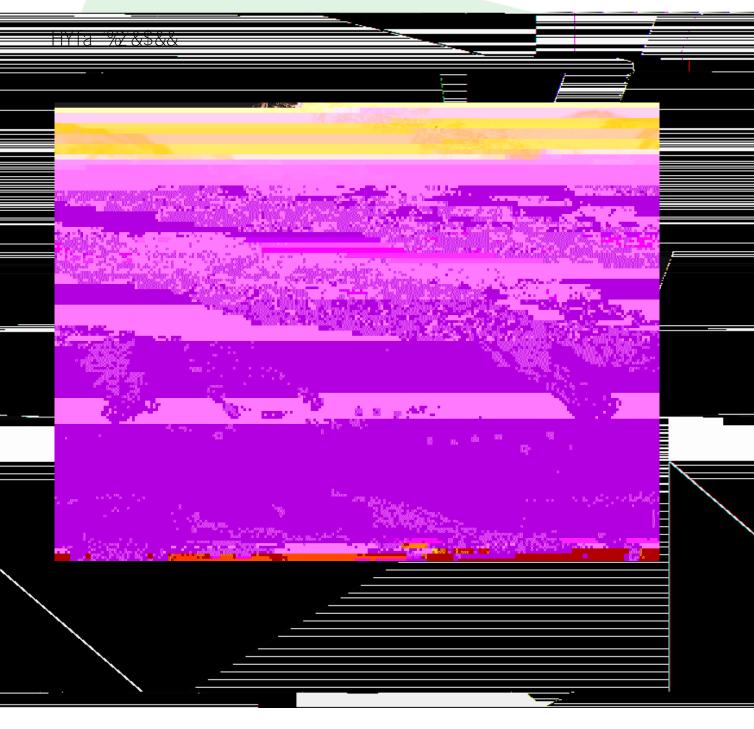
# PTRL4010

# =bHY[fUHYX'C]``UbX'; Ug': ]Y`X'9j U`i UH]cb'5



PTRL4010 // Term 1, 2022 // published at 02-02-2022 © UNSW Sydney, 2022

VFI

# 7 ci fgY<sup>-</sup>Cj Yfj ]Yk

### GHJZZ7cbHJWh78YHJ]`g

#### 7cbj Ybcfg

BUa Y	9a U]`	5j U]`UV]`]m	@cWUhjcb	D\cbY
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#### GWX.cc``7cbHJWhi=bZcfaUhjcb

GW&cc``cZA]bYfU`g`UbX`9bYf[mFYgcifWfg C`X`AU]b`6i]`X]b[ž`@YjY``%z`%)-`f?%)Ł IBGK`GM8B9MBGK`&\$)&5IGHF5@=5

9b[]bYYf]b['Gh XYbhGYfj]Wfg' 9.'<u>a YfY"hYUW\]b[4 i bgk "YXi "Ui</u> K .' 7 ci fgY`8YHJ]`g I b]hg`cZ`7fYX]h`\*` Gi a a UfmcZ'h\Y`7ci fgY

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#### HYUWX]b[ GhfUhY[]Yg

: ]Y`X`Yj U`i Uh]cb`]g`Ub`YggYbh]U``dUfhcZc]``UbX`[Ug`Z]Y`X`XYj Y`cda Ybh"Ghi XYbhg`bYYXg`hc``YUfb`\ck`hc ]bhY[fUhY`h\Y]f`i bXYfgHUbX]b[`cZj Uf]ci g`dfUW]WYg`]b`dYhfc`Yi a `Yb[]bYYf]b[`]bWi X]b[`Z]Y`X`[Yc`c[m ]bj Ygh][Uh]cbž'gY]ga ]Wz`fYgYfj c]f`Yb[]bYYf]b[`UbX`fYgYfj c]f`W\UfUWYf]gUh]cb`UbX`Udd`mh\Ya`cb`U`gYhcZ fYU``XUhU`hc`XYj Y`cd`[Yc`c[]WU``UbX`fYgYfj c]f`dfcdYfhma cXY`g`h\Uh]g`fYei]fYX`Zcf`c]``UbX`[Ug`g]a i`Uh]cb UbX`dfcXi Wf]cb`gmghYa`XYg][b"`

■ Th Y Th YcfYHJWD``dUfhcZh Y Wci fgY`gh XYbhg``YUfb`UVci hih Y Z bXUa YbhU``h Ycf]Yg`Ug`k Y```Ug`h Y a Uh Ya UhJWD`žghUhJghJWD``UbX`Wca di hUhJcbU``UbU`mgYg`cZc]``UbX`[ Ug`ZJY`X`Yj U`i UhJcb"`H\]g`]g`YggYbhJU``Zcf i bXYfghUbX]b[`Th Y`i bXYfd]bb]b[`Z bXUa YbhU`g`UbX`dfUWJWD``a Yh\cXg`cZ[Yc`c[]WU``UbX`dfcdYfhm a cXY``]b["`

#### 5XX]h]cbU`7cifgY = bZcfaUh]cb

Ghi XYbhgʻ[ U]bʻ\UbXglcbʻYI dYf]YbWi cZh\YiWca dʻYhYʻ[ Yc`c[ ]WU`a cXY``]b[ `UbX`Yj U`i Uh]cb`cZUb`c]``UbX [ UgʻZ]Y`X"'6ch\`]bX]j ]Xi U``UbX`hYUa `k cf\_gʻUfY`fYei ]fYX'hc`XY`]j Yf`U`gi WWiggZ ``ci hWca Y`cb`h]a Y"`=b dUfh]Wi `Ufž`hYUa k cf\_`]g`Ub`]a dcftUbhWca dcbYbhcZh\]g`Wci fgY"'H\]g`]g`YggYbhJU``]b`]bXi gffmdfUWiJWi'g k \YfY`h\Y`gi WWigg`cZYj Yfmdfc YWi\YUj ]`mfY`]Yg`cb`Wca a i b]WUh]cb`VYfk YYb`hYUa `a Ya VYfg"'H\YfYZcfYž ghi XYbhg`UfY`fYei ]fYX'hc`Zcfa`h\Y`[ fci dg`cZZci f`a Ya VYfg`Uhh\Y`VY[ ]bb]b[ `cZh\Y`gi VYWi'5`` gi Va ]gg]cbg`YI dYWh\Y`Z]bU``gi Va ]gg]cb`]g`[ fci d`gi Va ]gg]cb`fZ]bU``gi Va ]gg]cb`]g`]bX]j ]Xi U`t"`H\Y UggYgga Ybh`]g`VUgYX`cb`Vch`hYUa `UbX`]bX]j ]Xi U``dYfZcfa UbWi''`H\YfYZcfYž'gh`XYbhg`g\ci``X`VY`j Yfm WUfYZ``k ]h\`h\Y]f`hYUa `a Ya VYf'gYYWijcb"

H\Y'gi VYWik]``ghUfhik]h.'h\Y'[Yc`c[]WU`fYj]Yk "`Ghi XYbhg`k]```gYUfW\'h\fci [\`h\Y`YI]ghb[`VcXmcZh\Y `]hYfUh fY'hc`a U\_Y'h\Ya gY`j Yg`ZJa]`]Uf`k]h\'h\Y`cj YfU```[Yc`c[mcZh\Y'UfYU'ffY[]cbU``[Yc`c[mtUbX'h\Yb a cfY`ZcW g`cb`Z]Y`X`[Yc`c[mt`=b`h\Y`Z]Y`X`[Yc`c[mgYW]cbžghi XYbhg`k]```bYYX'hc`fYj]Yk 'h\Y`[Yc`c[]WU` ]bZcfa Uh]cb`Uj U]`UV`Y`Uhh\Y`Z]Y`X`gWU`Y`UbX``]b\_`]hhc`fY[]cbU``[Yc`c[mh\fci [\`XYhU]``UbU`mg]g`cZX]ZYfYbh fYdcfhq`dfcj]XYX"

C bY cZh Y a U]b ghYdg ]b [ Yc c [ ]WU a cXY ]b[ ]bj c j Yg h Y gY]ga ]W]bhYfdfYhUhcb gdYW]U mhc d]W\_i d \cf]ncbg UbX ZJi 'hg 5g gY]ga ]W]bhYfdfYhUhcb ]g dUfhcZ; Ycd\mg]Wg Wci fgYžh Y XYhU]`cZGY]ga ]W ]bhYfdfYhUhcb k ]``bchVY X]gW ggYXžVi hj ]XYcg cZ]bhYfdfYhUhcb k ]``VY dfcj ]XYX Zcf ghi XYbhg' ZJa ]`]Uf]hm k ]h D9HF 9@gcZhk UfY = b h Y bYI hdUfhcZ[ Yc c [ ]WU a cXY ]b[ žh Y [ Yc c [ ]WU ghfi Whi fYg fhcbYgž UnYfgž YhWEUfY Wcbghfi WhYX UbX dYhfcd\mg]WU a cXY ]b[ "]g h Yb dYfZcfa YX"

9j Ybhi U``mžghi XYbhg`k]``VY`[]j Yb`U`gdYW]Z]W]bX]j ]Xi U``hUg\_'hc`]bWi XY`]b`h\Y]f`D9HF 9@a cXY`"`H\Y`Z]bU` fYdcfhgi a a Uf]g]b[`U```]bZcfa Uh]cb`UbX`a cXY``fi bg`a i ghVY`gi Va ]hhYX`cb`A ccX`Y`VmgdYW]Z]YX`XYUX`]bY" 5```ch\Yf`fYdcfhg`UfY`[fci d`fYdcfhg`fYUW\`[fci d`k]```gi Va ]hcbY`fYdcfh±"`H\Y`a UI ]a i a `cZ%\$!dU[ Y fYI Wi X]b[`fYZYfYbVWgE`]g`U``ck YX`Zcf`Yj YfmfYdcfh'`H\YfY`k]``VY`U`gc`Ub`]bX]j ]Xi U``UggYgga Ybhcb [Yc`c[]WU``a cXY`"

H\Y`ghYd!Vm\ghYd`hfU]b]b[`k]```U`gc`VY`WcbXi WhYX`hc`[YhZ]``m`ZJa]`]Uf`k]h\`D9HF9@`gcZhkUfY`h\fci[\cih h\Y`Wci fgY`UbX`YIYfW]gYg`UfY`dYfZcfa YX`Uh`YjYfmigYgg]cb"

# 5ggYgga Ybh

5ggYgga Ybh'HJg_	K Y][ \h	8iY`8UHY	7cifgY`@YUfb]b[ CihWcaYgʻ5ggYggYX
%" <sup>·</sup> FYdcfh <sup>·</sup> %	%\$I	\$- #\$' #&\$&&`%&.\$\$`DA	%ž &ž ( ž )
&"`Glfi Wi fU``UbX`DYlfc! d\mg]WU``a cXY``F Ydcfh	&\$1	'\$#\$'#&\$&&`%&.\$\$`DA	%ž&ž'ž(ž)
'"`D9HF9@`AcXY``8YVUHY	&\$I	Bch5dd`]WUV`Y	%ž".&ž"
(":]bU`FYdcfh	)\$I	\$'#\$)#&\$&&`%&.\$\$`DA	%ž &ž`'ž'(ž')

#### 5ggYgga Ybh% FYdcfh%

#### 8i Y`XUhY. `\$- #\$' #&\$&&`%&.\$\$`DA

FYdcfh'%

#### 5ggYgga Ybh&. Ghfi Whi fU`UbX`DYhfc!d\mg]WU`a cXY``FYdcfh

#### 8i Y'XUhY.'' \$#\$' #&\$&&`%&.\$\$`DA

Glfi Wi fU``UbX`DYlfc!d\mg]WU``a cXY``F Ydcfhif[ fci d`UggYgga YbłŁ

#### 5ggYgga Ybh' . D9HF 9@A cXY`8YVUhY

D9HF 9@A cXY``8YVUHY`f]bX]j ]Xi U``UggYgga YbHz

#### 5ggYgga Ybh(.: ]bU`FYdcfh

#### 8i Y'XUhY. \*\$' #\$) #&\$&&\* %&. \$\$\* DA

: ]bU``FYdcfh`f]bX]j ]Xi U``UggYgga YblŁ

	•

FYgcifWYg DfYgWf]VYX`FYgcifWYg`

#### @UVcfUhcfmK cf\_g\cd =bZcfa Uh]cb

I BGK 'A ]bYfU`gʻUbX`9bYf[ mF Ygci fWYgʻ9b[ ]bYYf]b[ 'dfcj ]XYgʻV`YbXYX``YUfb]b[ 'i g]b[ 'h.Y`cb`]bY`A ccX`Y @A Gʻf@YUfb]b[ 'A UbU[ Ya YbhGmghYa Ł'' =i]gʻYggYbf]U``h.Uhmci `\Uj Y`UVWYgg`hc`U`D7 'cf`bchYVcc\_ Wca di hYf''A cV]`Y`XYj ]WYgʻgi W.`Ugʻga Ufhd\cbYg`UbX`hUV`Yhg`a UmWca d`]a Ybh``YUfb]b[ ž'Vi hUWWygg`hc`U D7 'cf`bchYVcc\_`Wca di hYf`]gʻU`gc`fYei ]fYX"`BchY`h.Uhgca Y`gdYW]U`]ghYb[ ]bYYf]b[ 'gcZk UfY`]gʻbch Uj U]`UV`Y`Zcf`A UWWca di hYfg''

- A ]b]b[ '9b[ ]bYYf]b[ 'Ghi XYbhg. 'C A 6'; (, #(-
- DYhfc`Yi a '9b[]bYYf]b['Ghi XYbhg. H9H6'@, ' (

⊨fi]gʻfYWca a YbXYXʻh\Uhimci `\Uj YʻfY[i `Uf`]bhYfbYhUWWYggʻhcʻdUfh]W]dUhY`]bʻZcfi a `X]gW gg]cbʻUbX`[fci d k cf\_"'Hc`fi bʻA ccX`Y`a cghYZZYWf]j Y`mžimci `g\ci `X`\Uj Y.

- VfcUXVUbX'WcbbYWfjcb'f&) \* '? V]h#gYWcf'ZJghYfŁ
- UV]`]hmhc`j`]Yk`ghfYUa]b[`j`]XYc`f\][\`cf``ck`XYZ]b]h]cb`l\_BGK``HJ`cdh]cbgŁ

A cfY`]bZcfa Uh]cb`UVci hgmghYa `fYei ]fYa Ybhg`]g`Uj U]`UV`Y`Uhk k k "ghi XYbh'i bgk "YXi "Ui #a ccX`Y!gmghYa ! fYei ]fYa Ybhg"

# Gi Va ]gg]cb cZ5ggYgga YbhHUg\_g

H\Y'GW\cc``\Ug'XYjY`cdYX'U'[i]XY`]bY'hc'\Y`d'mci'k\Yb'giVa]hhjb['U'WcifgY'Ugg][baYbh'

K Y YbWci fU[ Y mci 'hc'fYhJ]b'U'WcdmicZYj YfmUgg][ ba Ybhigi Va ]hhYX'Zcf'UggYgga YbhZcf'mci f'ck b'fYWcfX Y]h\Yf']b'\UfXWcdmicf'Y'YWfcb]WZcfa "

5```UggYgga Ybhg`a i gh\Uj Y`Ub`UggYgga YbhWcj Yf`g\YYhUHUWXYX"

# 7cifgY'Wcad`Yh]cb

7 ci fgY Wea d`Yhjcb`fYei ]fYg`gi Va ]gg]cb`cZU```UggYgga Ybh`]hYa g"`: U]`i fY`hc`gi Va ]hU```UggYgga Ybh`]hYa g a UmfYgi `h`]b`h\Y`Uk UfX`cZUb`I bgUhjgZUWcfm: U]`i fY`fI : Ł`[fUXY`Zcf`h\Y`7 ci fgY`i b`Ygg`gdYWjU` Webg]XYfUhjcb`\Ug`VYYb`gi Va ]hhYX`UbX`Uddfcj YX"`D`YUgY`bchYž`U`Wea dYhYbWm\i fX`Y`cZ) \$i ``]g`Udd`]YX`hc h\Y`ZjbU``UggYgga Ybh'

### @UhY Gi Va ]gg]cb cZUb 5gg][ ba Ybh

: i ```a Uf\_g`Zcf`Ub`Ugg][ ba YbhUfY`cb`mdcgg]V`Y`k \Yb`Ub`Ugg][ ba Ybh`]g`fYWY]j YX`Vmh\Y`Xi Y`XUhY''`

K Y'i bXYfgHUbX'h\Uh'Uh'h]a Yg'mci 'a Umbch'VY'UV'Y'hc'gi Va ]h'Ub'Ugg][ ba Ybh'cb'h]a Yž'UbX'h\Y'GW\cc``k ]`` UWWca a cXUhY'UbmZU]f'UbX'fYUgcbUV'Y'YI hYbg]cb"'K Y'k ci `X'fYWca a YbX'mci 'fYj ]Yk 'h\Y'I BGK 'GdYW]U` 7 cbg]XYfUh]cb'[ i ]XY`]bYg'-'gYY'gYWf]cb'VY`ck "

@UhY`gi Va ]gg]cb`k ]```bchVY`UVWYdhYX`UbX`k ]```VY`Wcbg]XYfYX`Ug`bc`gi Va ]gg]cb"

### GdYWJU``7cbg]XYfUh]cb

 $\label{eq:linear_constraint} \begin{aligned} & \mathsf{Nci}^{\mathsf{Wb}} Udd`mZcf`gdYW]U``Wcbg]XYfUH]cb`H\fci [ \`<u>H\Y`Bi WYi g`Gh XYbh<i V</u>`k \Yb`]``bYgg`cf`cH\Yf W]fW a gHUbWfg`]bHYfZYfY`k ]h`mci f`UggYgga YbhdYfZcfa UbWf"`G]W_bYggž`a ]gUXj Ybh fY`cf`ch\Yf W]fW a gHUbWfg`VYmcbX`mci f`Wcbhfc``a Um$ 

- DfYj Ybhimci Zfca 'Wca d'Yhjb[ 'U'Wci fgY'fYei ]fYa Ybh
- ? YYd mci Zfca UthYbX]b[ UbUggYggUVYYUWjj ]m
- Ghcdimci igi Va ]hh]b[ iUggYggUV'Yik cf\_'Zcf'U'Wci fgY
- G][b]]WUbhmUZYWhinci f`dYfZcfa UbW`]b`UggYggUV`Y`k cf\_žVY`]hU`Zcfa U``YbX!cZgYa YghYf YI Ua ]bUh]cbž`U`WUgg`hYghž`U``UVcfUhcfmhYghž`U`gYa ]bUf`dfYgYbhUh]cb`cf`Ubmch\Yf`Zcfa `cZ UggYgga Ybh

K Y`Ug\_`h\Uhimci `d`YUgY`WebhUWih\Y`7 ci fgY`7 cbj Ybcf`]a a YX]UhY`mcbWY`mci `\Uj Y`Wea d`YhYX`h\Y`gdYW]U` Webg]XYfUh]cb`Udd`]WUh]cbžbc``U]\Yf`h\Ub`cbY`k YY\_`Zca `gi Va`]gg]cb"#

‰

- | BGK "@YUfb]b[ "7YblfY"! "<u>k k k "`Wi bgk "YXi "Ui</u>
- 7 ci bgY``]b[ 'gi ddcfh! '<u>k k k "Wci bgY``]b[ "i bgk "YXi "Ui</u>

9ei ]HUV`Y`@YUfb]b[ 'GYfj ]Wfg

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

Mci f``YWi fYf`UbX`h\Y`I b]j Yfg]mik ]``YI dYWinci f`gi Va ]hYX`Ugg][ ba Ybhg`UfY`hfi `minci f`ck b`k cf\_"`I BGK \Ug`j YfmWYUf`[ i ]XY`]bYg`cb`k \Uhd`U[ ]Uf]ga `]g`UbX`\ck `hc`Uj c]X`]h'`D`U[ ]Uf]ga `]g`i g]b[ `h\Y`k cfXg`cf ]XYUg`cZch\Yfg`UbX`dfYgYbh]b[ `h\Ya `Ug`nci f`ck b"`D`U[ ]Uf]ga `]g`U`mdY`cZ]bhY``YWi U``h\YZh'`+i`WUb`hU\_Y a UbmZcfa gž`Zīca `XY`]VYfUhY`W\YUh]b[ `hc`UVW]XYbhU``mVcdm]b[ `Zīca `U`gci fWY`k ]h\ci hUW\_bck `YX[ Ya Ybh' H\Y`I b]j Yfg]mi\Ug`UXcdhYX`Ub`YXi WUh]j Y`UddfcUV\'hc`d`U[ ]Uf]ga `UbX`\Ug`XYj Y`cdYX`U`fUb[ Y`cZ fYgci fWYg`hc`gi ddcfhigh XYbhg''`5```h\Y`XYhU]`g`cb`d`U[ ]Uf]ga ž`]bWi X]b[ `gca Y`i gYZ ``fYgci fWYgž`WUb`VY Zci bX`Uhi<u>k k k "qh XYbh'i bgk "YXi "Ui #d`U[ ]Uf]ga</u> "

5```A]b]b[`'9b[]bYYf]b['gh XYbhg`UfY`fYei]fYX`hc`Wcad`YhY`U`gh XYbhXYWUfUh]cb`Zcf`UWUXYa]W]bhY[f]hm k \]WX`]g`ci h]bYX`]b`h\Y`Ugg][ baYbhWcj Yf`g\YYhg"`6mg][ b]b[``h\]g`XYWUfUh]cbž`mci``U[ fYY`h\Uhmci f`k cf\_`]g mci f`ck b`cf][]bU``k cf\_"

-Zmci 'bYYX'gca Y'UXX]h]cbU``gi ddcfhk]h\ 'mci f`k f]h]b[ 'g\_]`gž'd`YUgY'WcbhUWh\Y'@YUfb]b[ '7 YbhY'cf'j]Yk gca Y'cZh\Y'fYgci fW'g'cb'h\Y]f`k YVg]hY. <u>k k k "`Wi bgk "YXi "Ui</u>"'H\Y'@YUfb]b[ '7 YbhY']g'XYg][ bYX'hc`\Y`d mci ']a dfcj Y'mci f'UWUXYa ]Wk f]h]b[ 'UbX'Wca a i b]WUh]cb'g\_]``g"'Gca Y'gh XYbhg'i gY'h\Y'7 YbhY'gYfj ]WYg VYWUi gY'h\Ym'UfY'Z]bX]b[ 'h\Y]f'Ugg][ ba Ybhg'U'W\U``Yb[ Yž'ch\Yfg'VYWUi gY'h\Ymk Ubhhc']a dfcj Y'Ub'U'fYUXm gi WWYggZ ``UWUXYa ]WdYfZcfa UbWY"

# 5₩UXYa]W≢bZcfaUh]cb

# 7 ci fgY FYgi `hg

: cf<sup>·</sup>XYHJ]`gʻcbʻl BGK ʻUggYgga Ybhdc`]Whž'd`YUgYʻj ]g]h'<u>kkk"gh XYbHʻi bgk"YXi "Ui #JggYgga Ybh</u>

- VfcUXVUbX WcbbYWgcb f&) \* \_\_V]h#gYWcf ZJghYfŁ

 $\label{eq:constraint} \begin{array}{l} K_{1}^{*}(UV_{bck}^{*})X_{1}^{*}(V,V) = K_{1}^{*}(V,V) = K_{1}$ 

# 5ddYbX]I. '9b[]bYYfg'5ighfU`]U'f195ŁDfcZYgg]cbU`'9b[]bYYf'7cadYhYbWm GHJbXUfX

Dfc[fUa +bhybXYX @YUfb]b[ Cihwca Yq ? bck `YX[ Y 'UbX'q\_]``'VUqY D9%"%7cadfY\Ybq]iYžh\YcfmVUqYXibXYfqHUbX]b[cZh\YibXYfd]bb]b[bUhifU`UbX d/mg]WU`:gW]YbWYg`UbX`h\Y`Yb[]bYYf]b[`Z bXUa YbHU`g`Udd`]WUV`Y`hc`h\Y`Yb[]bYYf]b[`X]gW]d`]bY D9%"& 7 cbW/dhiU`i bXYfqHUbX]b[ cZh\Y`a Uh\Ya Uh\Wažbi a Yf]WU`UbU`mg]qžqHUh|qh\WažUbX Weadi hYf'UbX']bZcfaUh]cb'gW]YbWYg'k\]WX'i bXYfd]b'h\Y'Yb[]bYYf]b['X]gW[d`]bY D9%" + + XYdh i bXYfqHbX]b[ cZqdYWU`]qhVcX]YqcZ bck YX[Yk]h bhY'Yb[]bYYf]b[ X]qWd`]bY D9%"('8]qWFfba YbhcZ\_bck YX[YXY]Ycda YbhUbXfYqYUfWXX]fYWfcbg'k ]h.jb'h.Y Yb[]bYYf]b[`X]gWJd`]bY D9%") ? bck `YX[Y`cZYb[]bYYf]b[ `XYg][b`dfUW]WY`UbX`WcbhYl hi U``ZJW/cfg`]a dUWf]b[ `h\Y Yb[]bYYf]b['X]qW[d`]bY D9%"\* I bXYfqHJbX]b[ cZh\Y'qWcdYždf]bW]dYgžbcfa gžUWVci bHJV]]]h]Yg'UbX'Vci bXg'cZ qi qHU]bUV`Y`Yb[]bYYf]b[`dfUWfWY`]b`H\Y`qdYW[Z]WX]qW[d`]bY 9b[]bYYf]b['Udd`]WUh]cb'UV]`]m D9&"%5dd`]WUhjcb`cZYghUV`]g\YX'Yb[]bYYf]b[`a Yh\cXg`hc`Wca d`YI 'Yb[]bYYf]b[`dfcV`Ya qc`i]b[ D9&"&: `i YbhUdd`]WUhcb'cZYb[]bYYf]b[ 'hYWkb]ei Ygžhcc`g'UbX'fYgci fWfg D9&"' 5dd`]WUhjcb'cZgmghYa UhjWYb[]bYYf]b['gmbh\Yg]g'UbX'XYg][b'dfcWYggYg D9&"( '5dd`]WUHcb'cZgmghYaUHWUddfcUWXYg'hc'h\Y'WcbXiWiUbX'aUbU[YaYbhcZYb[]bYYf]b[ dfc Y₩q DfcZYgg]cbU`UbX dYfgcbU`Uhf]Vi hYg D9' "%'9h\]WU``WcbXi WiUbX'dfcZygg]cbU``UVWci bHUV]`]hm D9' "&'9ZYW)j Y'cfU`'UbX'k f]HYb'Wca a i b]WUh]cb']b'dfcZygq]cbU`'UbX'`UmXca U]bg D9' "' 7 fYUhi Yžibbci Uhi YUbXidfc!UWi YXYa YUbci f D9' "( 'DfcZygg]cbU``i gY'UbX'a UbU[ Ya YbhcZ]bZcfa Uhcb D9' ") CfXYfma UbU[Ya YbhcZgYZzUbX dfcZygq]cbU`WcbXi Wh D9' "\* 9ZYWAJ Y HYUa 'a Ya VYfg\]d UbX HYUa 'YUXYfg\]d