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MINE3230 // Term 2, 2023 // published at 24-05-2023 © UNSW Sydney, 2023

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5gg][ba Ybh&f5&L ``A]b]b[`GcZk UfY`5gg]gHUbWY`f&\$i L`H\]gʻdUfh]gʻVY`VUgYX`cbʻUʻZ ``!gWUY`UWi Uʻ cfY`VcXmV`cW_`a cXY``UbX`fY`Yj UbhYWcbca]V#YWkb]WU``dUfUa YhYfg''`5gg]ghYX`Vma]b]b[`gcZk UfYž ghi XYbhgʻg\ci `X`[YbYfUhY`Ub`Uddfcdf]UhY`hYWkb]WU`#YWcbca]Wa cXY``hc`XYhYfa]bY. '%Lh\Y`i`hja UhY`d]hž&L h\Y`Yj Ybhi U``hfUbg]hjcb``Yj Y``VYlk YYb`C dYb`D]hUbX`L bXYf[fci bX`cdYfUhjcbgž' L'h\Y`YWcbca]WZcchdf]bhf]Z]hdfcWYYXgLž`UbX`(L'h\Y`dfcXi Wjcb`UbX`XYj Y`cda YbhgW\YXi `Y''`Ghi XYbhgʻg\ci `X`U`gc`]bWi XY`U`XYHU]`YX YWcbca]WYj U`i Uhjcbž`]bWi X]b[`%LYWcbca]Wj U`i Uhjcbž'&L'ZjbUbWjU`Z` 'hYWkb]WU`a cXY`ž' L'f]g_`UgyYgga Ybhž UbX`(L'fYWca a YbXUhjcbg''H\Y`UggYgga YbhVcbg]XYfgʻ%)`a]b`]bhYfj]Yk`'k Y][\]b[``)\$i ``cZh\Y`5gg][ba Ybh a Uf_`ff%\$i L''`5`Zcfa U``fYdcfh]g`YI dYWhYX`Zcf`[fUX]b[ž'UbX`h\Y`XYHU]`YX`a Uf_g`X]ghf]Vi hjcb`Zcf`YUWX`Hug_`k]`` VY`dfcj]XYX`Ug`dUfhcZh\Y`dfc YWigHUhYa Ybhz`k Y][\hjb[``)\$i ``cZh\Y`5gg][ba Ybha Uf_`ff%\$i L''

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- K 8 --]bX]WUHYg'H\YfY']g'Ub']ggi Y'k]H\ cbY'cf'a cfY'Ugg][ba Ybh/cf
- K 7 '-- 'k \]WX ']bX]WUHYg'mci '\Uj Y'Udd`]YX'Zcf'GdYW]U`'7 cbg]XYfUH]cb'Xi Y'hc']``bYgg'cf'a]gUXj Ybhi fY UbX'h\Y'Wci fgY'fYgi `hg'\Uj Y'bchVYYb'Z]bU`]gYX"

=b`Y]ħ\Yf`Yj Ybh`]ħk ci `X`VY`mci f`fYgdcbg]V]`]mħc WcbħUWħ\Y`7 ci fgY`7 cbj YbYf`Ug`gccb`Ug`dfUWfWUV`Y`Vi h bc``UħYf`ħ\Ub`Zj Y`f) Ł`XUmg`UZħYf`fY`YUgY`cZħ\Y`Wći fgY`fYgi `ħ`=Zmci `Xcb'ħWcbħUWħ\Y`Wcbj YbYf`cb`ħ]a Yž mci `a UmVY`fYei]fYX`ħc`fY!gi Va]ħUb`Ugg][ba Ybħcf`fY!g]ħħ\Y`Z]bU``YI Ua `UbX`a UmfYgi `ħ`]b`mci `ZIJ`]b[`ħ\Y • UV]`]hmihc`j`]Yk`ghfYUa]b[`j`]XYc`f\][\`cf``ck`XYZ]b]h]cb`I_BGK``HJ`cdh]cbgŁ

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

$5WW gg]b[^7cifgYAUW f]UgH fci[AccXY$

7 ci fgY'ci h]bYgžgi ddcfha UhYf]U`gʻUfY'i d`cUXYX'hc'A ccX`Yž'h`Y'i b]j Yfg]mighUbXUfX`@YUfb]b[A UbU[Ya YbhGmghYa 'f@A GŁ'' =b`UXX]h]cbžcb!`]bY`Ugg][ba Ybhigi Va]gg]cbg`UfY'a UXY'i g]b['h`Y Ugg][ba YbhXfcdVcI 'ZJVJ]]midfcj]XYX`]b`A ccX`Y'' 5``Ybfc``YX'ghi XYbhg`UfY`Ui hca Uh]WU``mi]bWi XYX`]b A ccX`Y'Zcf`YUW\`Wci fgY'' Hc`UWWYgg'h`YgY`XcW'a Ybhg`UbX`ch`Yf`Wci fgY`fYgci fW'gž'd`YUgY'j]g]h` <u>k k k "a ccX`Y'hY`h'i bgk "YXi "Ui</u>

FZ[e UagdeWagf? WeWfe agf VWeUd[bf[a`aXU'SeeWe Sf fZWVSfWfZW5agdeWA gf? W[e bgT?[eZWžFZW `SfgdWaXU'SeeWe _ Sk UZS`YWVgd? Y fZWFWd_ SXWdfZW5agdeWA gf? W[e bgT?[eZWž? aaV WeZag*V TW Ua`eg*fWW Xad fZWgb fa VSfWU'See VWeUd[bf[a`ež;XfZWdW[e S`k[Ua`e[efW Uk[`fZWVWeUd[bf[a`aX SUf[h[f[We TWfi VW' fZWG`[hWde[fk f[_WfST*WS`V fZW5agdeWA gf? W/Se gbVSfWW[`?aaV*Wfi fZW VWeUd[bf[a`[`fZW5agdeWA gf? W? aaV*WSbb?[Wež

< ck KY7 cbHJWhMci

5W_bck `YX[Ya YbhcZ7ci bhfm

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

5ddYbX]I. '9b[]bYYfg'5ighfU`]U'f195EDfcZYgg]cbU`'9b[]bYYf'7cadYhYbWm GHJbXUfX

Dfc[fUa`≢əhYbXYX`@YUfb]b[`CihWcaYg			
?bck`YX[Y`UbX`g_]```VUgY			
D9%"%7cadfY\Ybg]jYžt\YcfmVUgYX1bXYfgtUbX]b[`cZt\Y1bXYfd]bb]b[`bUhifU``UbX d\mg]WU``gW]YbWYg`UbX1t\Y1Yb[]bYYf]b[`ZibXUaYbtU`g`Udd`]WUV1Y1hc1t\Y1Yb[]bYYf]b[`X]gW]d`]bY			