# Problems to section 8 of Algebraic Graph Theory by N.Biggs

March 20, 2006

1. Prove additional result 8a
2. Get upper and lower bounds for eigenvalues of graph $K_{lmn}$ for which the adjacency matrix is

$$\mathbf{A} = \begin{pmatrix} 0_{lxl} & J_{lxm} & J_{lxn} \\ J_{mxl} & 0_{mxm} & J_{mxn} \\ J_{nxl} & J_{nxm} & 0_{nxn} \end{pmatrix}$$

3. Get upper and lower bounds for eigenvalues of graph $C_{lmn}$ for which the adjacency matrix is

$$\mathbf{A} = \begin{pmatrix} J_{lxl} - I_{lxl} & 0_{lxm} & 0_{lxn} \\ 0_{mxl} & J_{mxm} - I_{mxm} & 0_{mxn} \\ 0_{nxl} & 0_{nxm} & J_{nxn} - I_{nxn} \end{pmatrix}$$

4. Find upper bound for $\mu_1$ along the lines of 8c .