

Tutorial 5.A

Advanced Graph Theory

27th August 2014

1. Find a minimum weighted cover in the matrix below.

$$\begin{pmatrix} 4 & 5 & 8 & 10 & 11 \\ 7 & 6 & 5 & 7 & 4 \\ 8 & 5 & 12 & 9 & 6 \\ 6 & 6 & 13 & 10 & 7 \\ 4 & 5 & 7 & 9 & 8 \end{pmatrix}$$

2. Let M be a matching in a graph \mathbf{G} , and let \mathbf{u} be an \mathbf{M} -unsaturated vertex. Prove that if \mathbf{G} has no \mathbf{M} -augmenting path that starts at \mathbf{u} , then \mathbf{u} is unsaturated in some maximum matching in \mathbf{G} .

3. Construct a maximum matching in this general graph.

