

MthSc 440/640 Problem Set #8

**Due 4/6/12**

1. Consider the network shown on p. 90 of the class notes.

Start from the initial spanning tree having arcs to/from the artificial node and carry out the network simplex method. Show at each step the current flow, the dual variables, the reduced costs, the entering arc, and the leaving arc. Use the standard rules for selecting entering variables.

Explain why the given problem (on 5 nodes) is therefore unbounded.

2. Consider the network shown on p. 93 of the class notes.

Start from the initial spanning tree having arcs to/from the artificial node and carry out the network simplex method. Show at each step the current flow, the dual variables, the reduced costs, the entering arc, and the leaving arc. Use the standard rules for selecting entering variables.

Explain why the given problem (on 5 nodes) is therefore infeasible.