Homework 5*

CS 719, Semester II, 1996-97

Friday February 21, 1997

1. Figure 11.24(b) gives a feasible solution of the minimum cost flow problem shown in Figure 11.24(a). Covert this solution into a spanning tree solution with the same or lower cost.
2. Consider the minimum cost flow problem shown in Figure 11.26. Using the network simplex algorithm implemented with the first eligible pivot rule, find an optimal solution of this problem. Assume, as always, that arcs are arranged in the increasing order of their tail nodes, and for the same tail node, they are arranged in the increasing order of their head nodes. Use the following initial spanning tree structure: $\mathbf{T} = \{ (1,2), (3,2), (2,5), (4,5), (4,6) \}$, $\mathbf{L} = \{ (3,5) \}$, and $\mathbf{U} = \{ (1,3), (2,4), (5,6) \}$.
3. Using the network simplex algorithm implemented with Dantzig's pivot rule , solve the minimum cost flow problem shown in Figure 11.26. Use the same initial spanning tree structure as used in Problem2.

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*Homework due in class one week after assigned. No late homework accepted.