Assignment - 2   Due: February 3, 2014

Math 448/748, Spring 2014 - Network Flows

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1. Math 748 students are encouraged to typeset solutions using LATEX.

2. Late assignments will not be marked and will earn zero credit.

3. The worst assignment score will be dropped when calculating final grades.

4. On the due date of the assignment, either we will collect the assignment and mark two questions or there will be a quiz with two questions selected from the assignment due that day.

5. Try not to print this assignment.

Problems for Math 448 and Math 748

1. Page 158, 5.2, 5.6

2. Page 159, 5.10

3. Use Bellman-Ford algorithm to compute shortest path from node 1 to all other nodes in the graph Figure 5.10 (b), Page 158.

4. Page 162, 5.30

5. Discuss an $O(n^3)$ algorithm that computes shortest path from node s to node t such that the algorithm should select among all shortest paths, one with smallest cardinality.

6. Construct an example to show that $d[i, j] \leq d[i, k] + d[k, j]$ for all triples (i, j, k) is not sufficient for all pair shortest path optimality. (Refer to Theorem 5.5).

Problems for Math 748 only

7. Page 160, 5.20, 5.22