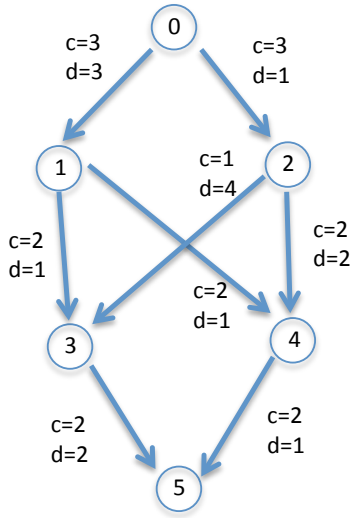
Department of Electrical and Computer Engineering
EECE 4452: Advanced Engineering Algorithms

Homework #7

Solve the following problems.

1. Use the Ford-Fulkerson algorithm to find *all* maximum flows for the following network. Show every step of your algorithm and each residual network.



2. For each flow, use the max-flow, min-cut theorem to prove that the flow is a maximum flow.

3. Use the cycle-cancelling algorithm to transform one of the maximum flows you found above into a minimum-cost flow with the same value. Use at least one cycle-canceling step and show the change in the cost of the flow.

4. Use a result from class to prove that the flow is a minimum-cost flow.