Algorithms
Computer Science 140 & Mathematics 168
Instructor: B. Thom
Fall 2003
Homework 11a
Due on 11/13/03 (in class)

1. [**14 Points**] **Review of Network Flow Proofs.** In class we proved four fundamental theorems which, in the end, allowed us to show that our network flow algorithm does indeed find a maximum flow from s to t. These four theorems were:

   (a) The Cut Theorem

   (b) The Capacity Theorem

   (c) The Max-Flow Min-Cut Theorem

   (d) The "Greed is Good" Theorem for Network Flows

   Note that our proofs and approach are easier than those given in the book. Your task is to carefully write out the proofs for the first three of these theorems **as presented in class.** Your grade will be based largely on how clearly and precisely you write your proofs.