CSCI 303 Algorithms

Homework 10

Due: 11:00 in class, November 20, 2001

1. Consider the algorithm $Select(L,k)$ that always chooses the first number in L as its pivot.

   (a) (5 points) Describe an input of size n that makes the algorithm to achieve the $O(n^2)$ time bound.

   (b) (5 points) Describe an input of size n that makes the algorithm to achieve the $O(n)$ time bound.

2. Consider the graph in Figure 9.82 on page 381 in MAW.

   (a) (5 points) Find the minimum spanning tree for the graph using Prim's algorithm.

   (b) (5 points) Find the minimum spanning tree for the graph using Kruskal's algorithm.