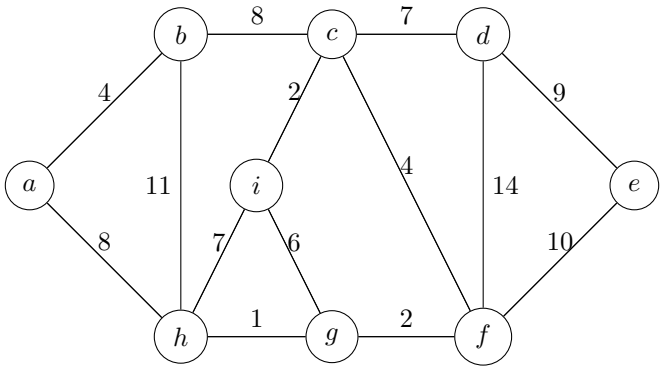
DSC 40B - Discussion 09

Problem 1.

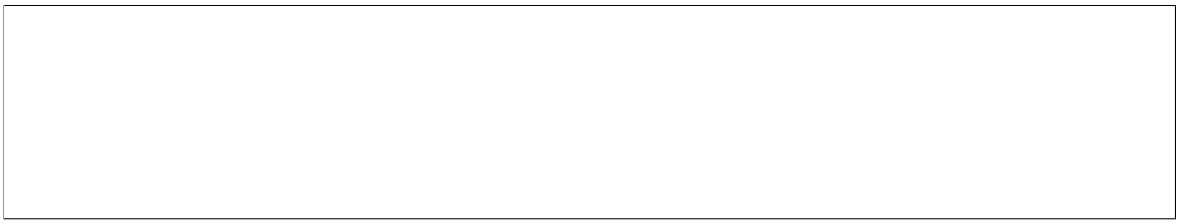
Compute the minimum spanning tree for the following graph using Kruskal's algorithm. (Also compute the MST using Prim's algorithm and compare the results.)



Problem 2.

Suppose we are given both an undirected graph G with weighted edges and a minimum spanning tree T of G.

a) Describe an efficient algorithm to update the minimum spanning tree when the weight of one edge e in T is decreased.



b) Describe an efficient algorithm to update the minimum spanning tree when the weight of one edge e not in T is increased.

c) Describe an efficient algorithm to update the minimum spanning tree when the weight of one edge e in T is increased.

d) Describe an efficient algorithm to update the minimum spanning tree when the weight of one edge e not in T is decreased.