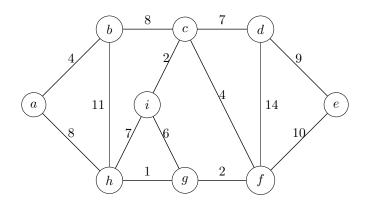
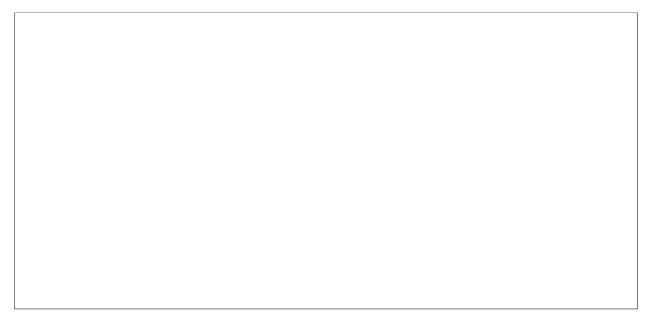
## DSC 40B - Discussion 09

## 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.