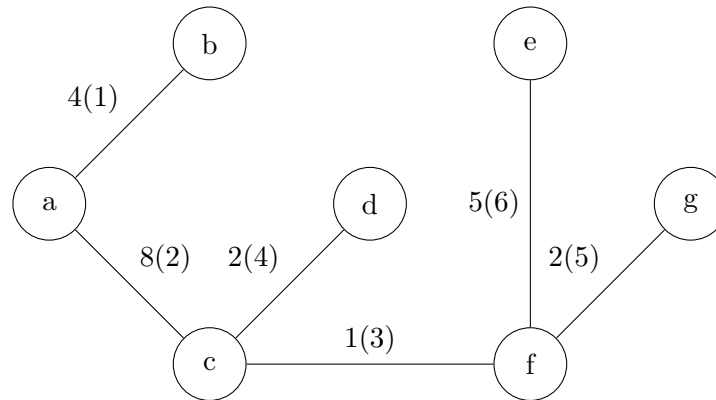
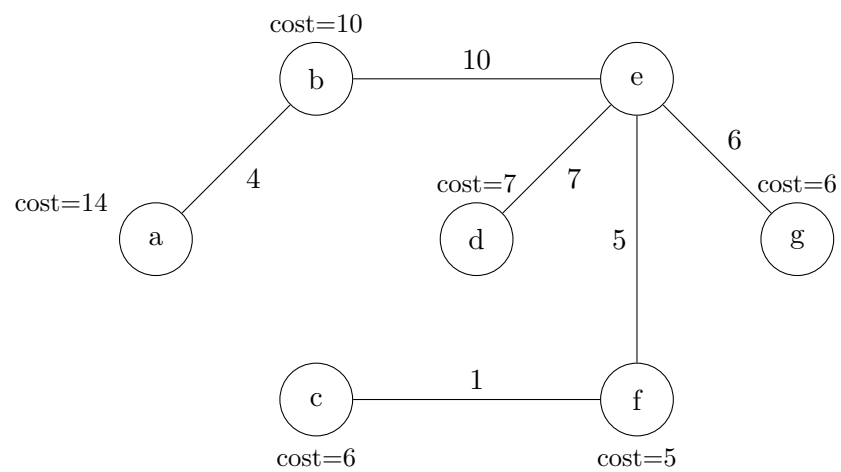


1.

a)



b)



2.

Assume there is a graph G such that the graph resulting from running this algorithm G' is not a MST of G . G' prime cannot have any cycles since if there is a cycle in G' the largest edge in the cycle will be removed before the algorithm finishes, since it can be removed without leaving any disconnected components. This means that G' is at least a spanning tree of G . if G' is not a minimum spanning tree that means there must be a edge e in G' that can be removed and replaced with a path p in G that connects the two components connected by e , and the sum of the weights in $|p| < |e|$. This can't be the case though because if it was e would have been removed from G' before any of the edges in p were visited, since removing e would still keep the components connected through p and e must have a weight larger than every edge in p . This contradicts G' not being a MST of G and proves that this algorithm results in a MST of G

3.