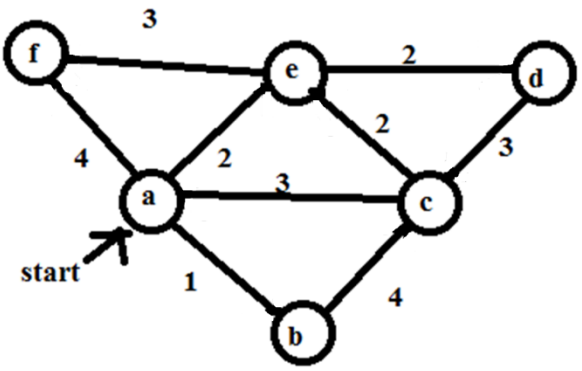
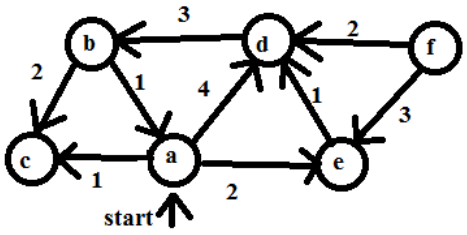
HW10 – Chapter 9

1. Perform Prim's on the following graph.
    a. Show the tree in **node(neighbor, weight)** form (e.g. **b(a,1)** is the edge a to b of weight 1), see slides (just list of the edges in the above form).
    b. Show the state of the priority queue before every addition to the tree.
    c. Indicate on the graph which edges are part of the MST
    d. Start at a



2. Dijkstra's Algorithm: Perform Dijkstra's on the following graph
    a. You must start at a – since this is a *single source* shortest path algorithm
    b. You must show the state of the priority queue before each addition to the path
    c. Indicate on the graph the paths (circle edges part of a path)



3. Give the Huffman Codes for the following alphabet.
    a. Show your work
    b. Give the final tree (with labelled edges)
    c. Give the final codes for each character
    d. I suggest sorting the characters by frequency before building the trees.

char	**p**	**code**
m	0.15	
n	0.14	
o	0.21	
p	0.09	
q	0.05	
r	0.20	
u	0.16	