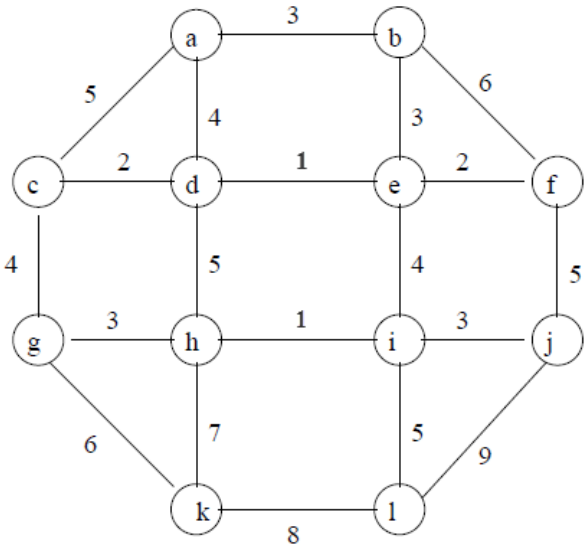
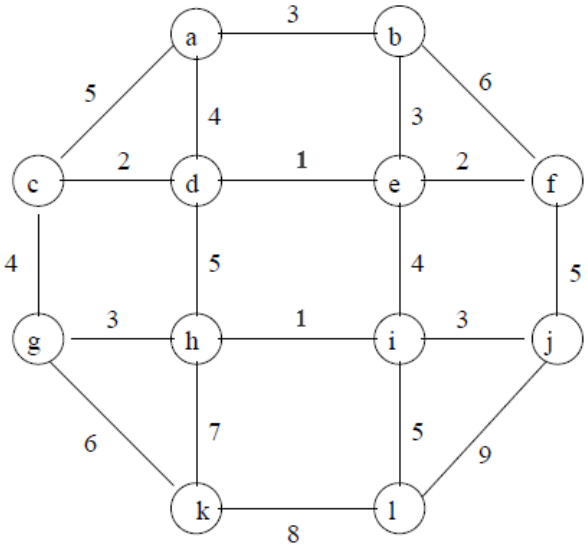
Minimum Spanning Tree Worksheet

Name:_____

1. For the following graph, demonstrate the execution of Kruskal's algorithm. Label the order in which the edges were added. Give a final total weight of the Minimum Spanning Tree produced.



2. For the following graph, demonstrate the execution of Prim's algorithm. Again, label the order in which the edges were added and give a final total weight of the Minimum Spanning Tree produced.



3. A graph G may have many minimum spanning trees. What determines the tree produced in Kruskal's algorithm? What determines the tree produced in Prim's algorithm? In other words, what phases of each algorithm affects what tree will be built?

4. How many unique MSTs exist in a connected, acyclic bipartite graph?

5. Without changing an algorithm for finding a Minimum Spanning Tree, how might we modify the input data to produce a Maximum Spanning Tree