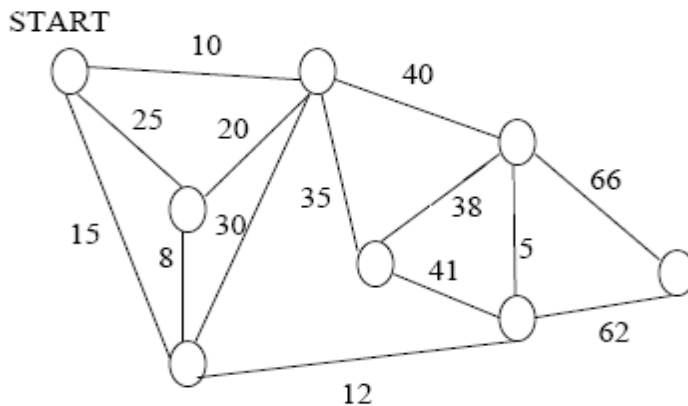
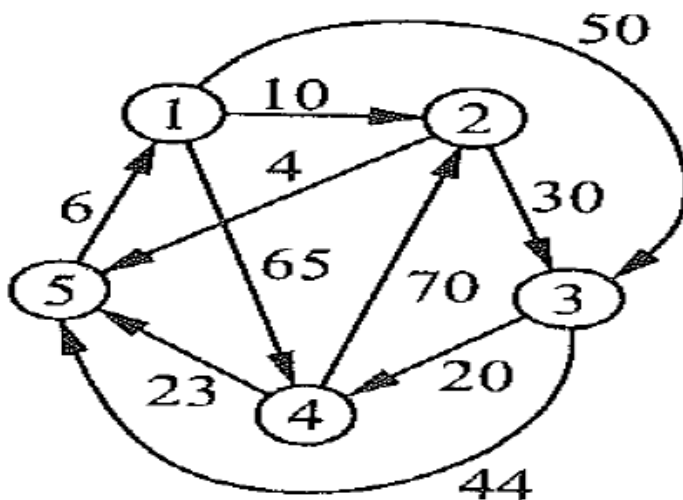


**CS 5300 Advanced Algorithms**  
**HW # 7**

1. Do you think it is possible for a minimum spanning tree to have a cycle? Justify your answer
2. Use Prim's algorithm to find a minimum spanning tree for the following graph:



3. Use Kruskal's algorithm to find a minimum spanning tree for the graph given in question 2.
4. Can Dijkstra's algorithm be used to find the shortest paths in a graph with some negative weights? If so, prove it; otherwise, give a counter example.
5. Use Dijkstra's to find the shortest paths from vertex 1 to all the other vertices for the graph given below:



6. Use Bellman-Ford algorithm to find the shortest paths from vertex 1 to all the other vertices for the graph given in question 5.