CS 201 Graph algorithms – Dijkstra's shortest paths

1. Find the shortest paths from A to all other vertices in this graph using Dijkstra's algorithm. Label each vertex with the length of the shortest path from A as well as its predecessor vertex.



CS 201 Greedy algorithms – Kruskal's and Prim's minimum spanning trees

2. Find a minimum spanning tree for this graph using Kruskal's algorithm. Kruskal's algorithm starts with |V| single-node trees; repeatedly selects the smallest weight edge that does not create a cycle; adding the selected edge merges two trees into one.



What is the sum of the weights overall?

3. Find a minimum spanning tree for this graph using Prim's algorithm. Prim's algorithm maintains a single tree; at each iteration adds an edge that has smallest weight among all edges where one endpoint is in the tree and the other endpoint is not.



What is the sum of the weights overall?