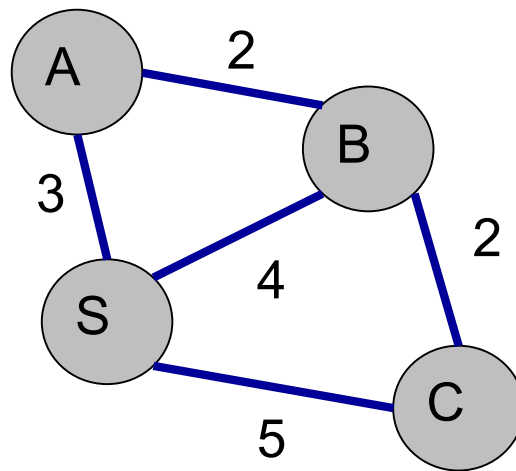# CS200 Fall 2016 written homework 3
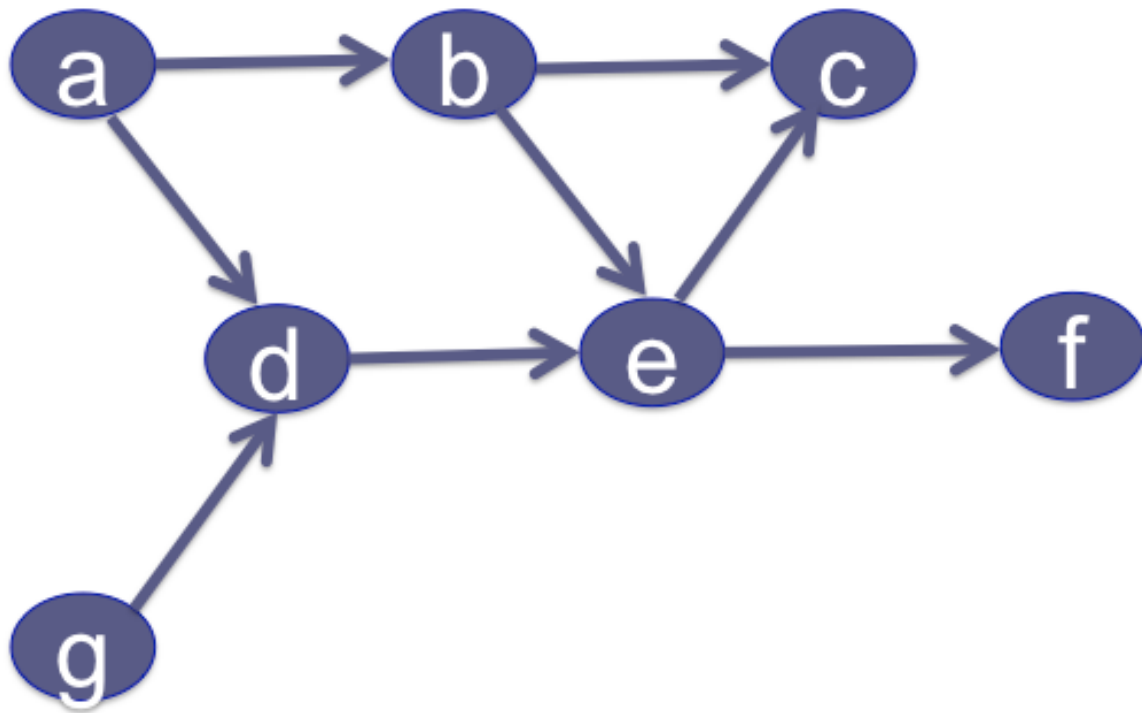
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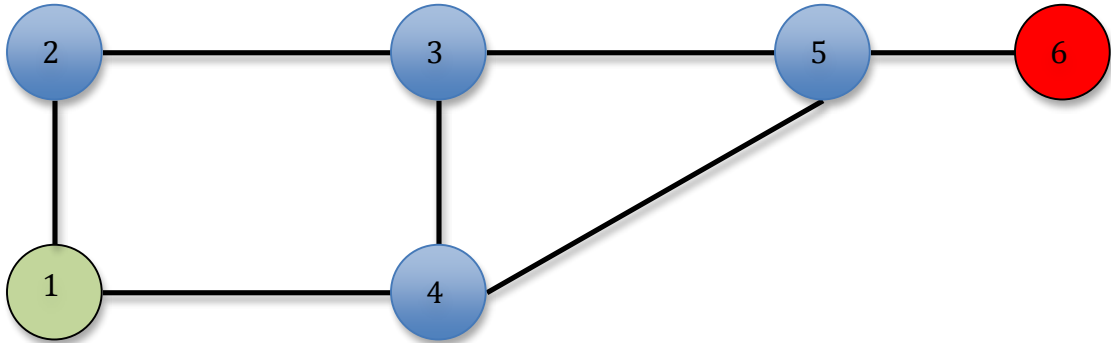1. Given the following graph

(a) Show the shortest paths starting at S

(b) Show the Minimum Spanning Tree

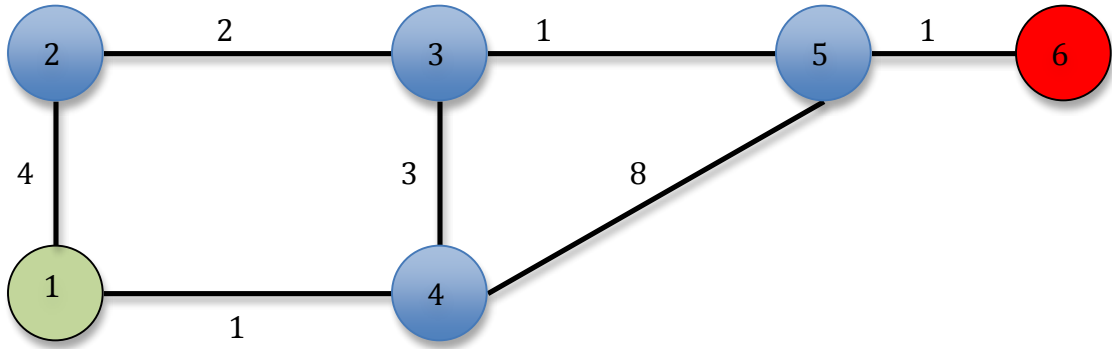2. Enumerate all distinct topological sortings of the following DAG:

3. Given the following graph

(a) Write the sequence of nodes traversed by the DFS algorithm starting at node 1. The DFS priorities are the inverse of node labels, i.e. the smaller the label, the higher the priority. How many steps does it take to reach node 6?

(b) Now suppose edges are given the following weights

Compute shortest distances from node 1