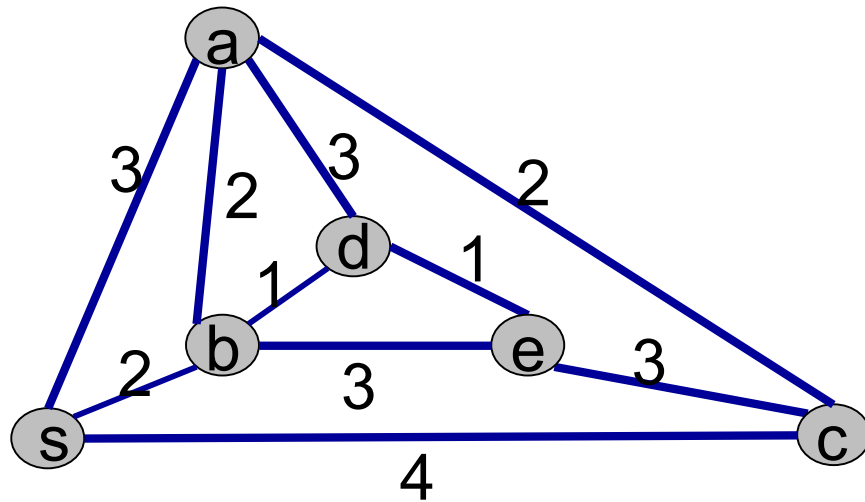


# CS200 Spring 2017 written homework 3

name:

id:

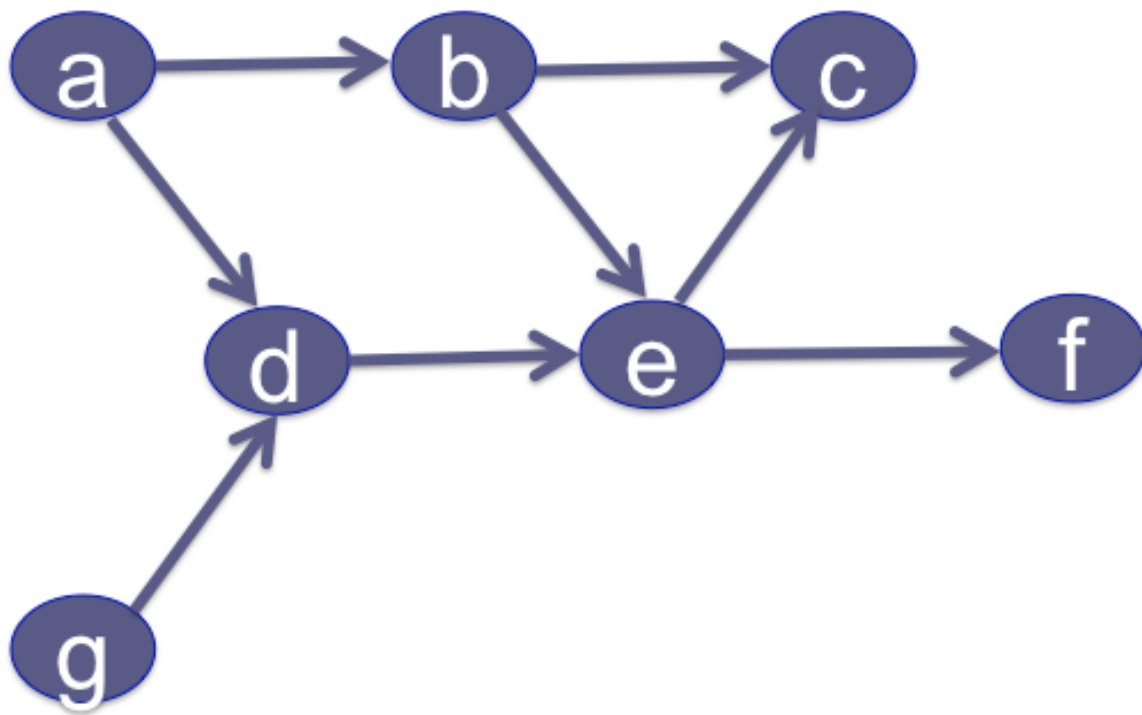
1. Given the following graph



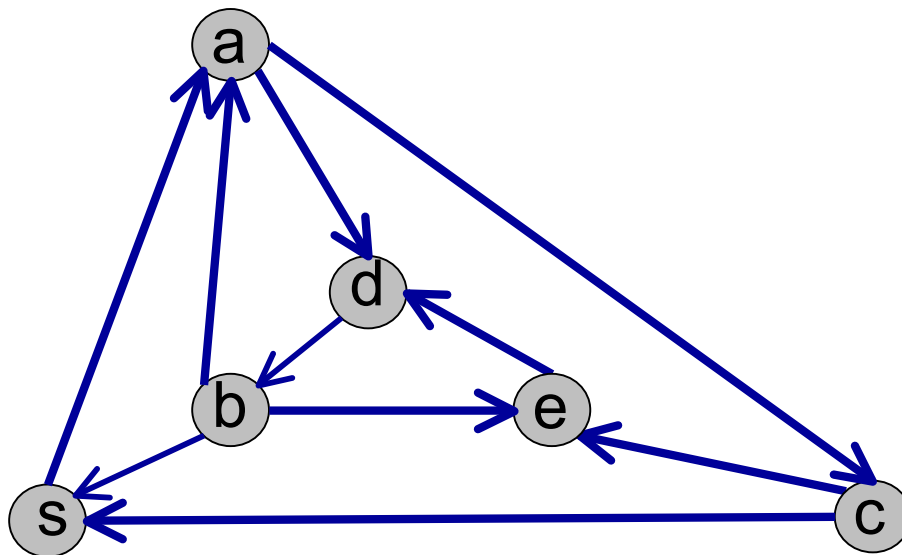
(a) Show the shortest path tree starting at S

(b) Show the Minimum Spanning Tree

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



3. Given the following graph



a) Show the BFS algorithm using a Queue, starting at node s. For each step show the queue. If a node has multiple successors, enqueue the letter earlier in the alphabet first.

Queue

BFS node visited

[s]

b) Write the sequence of nodes traversed by the DFS algorithm starting at node s. The DFS priorities are: the earlier the letter in the alphabet the higher the priority.

c) Can the graph be topologically sorted?