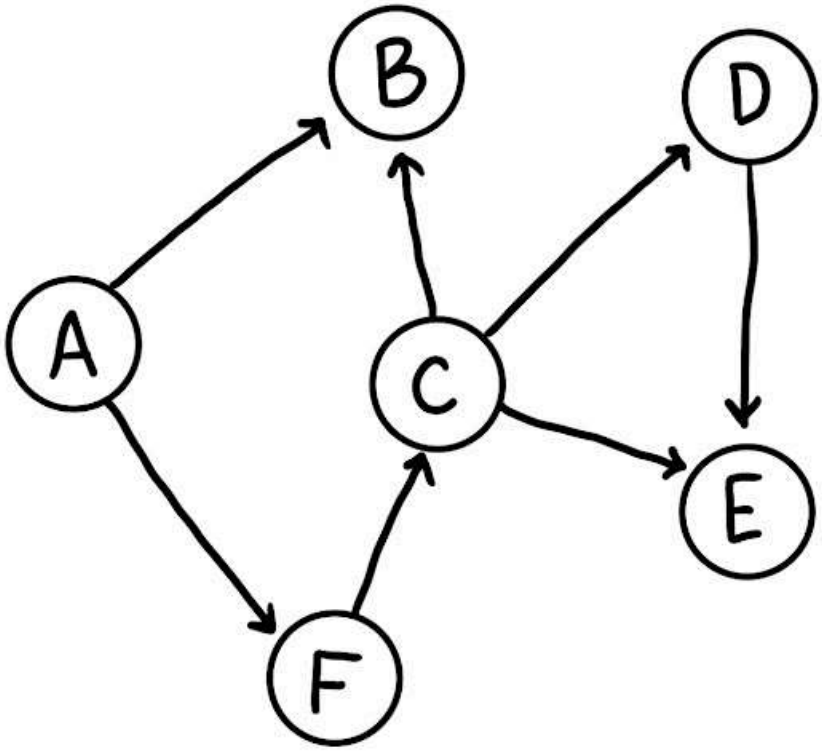
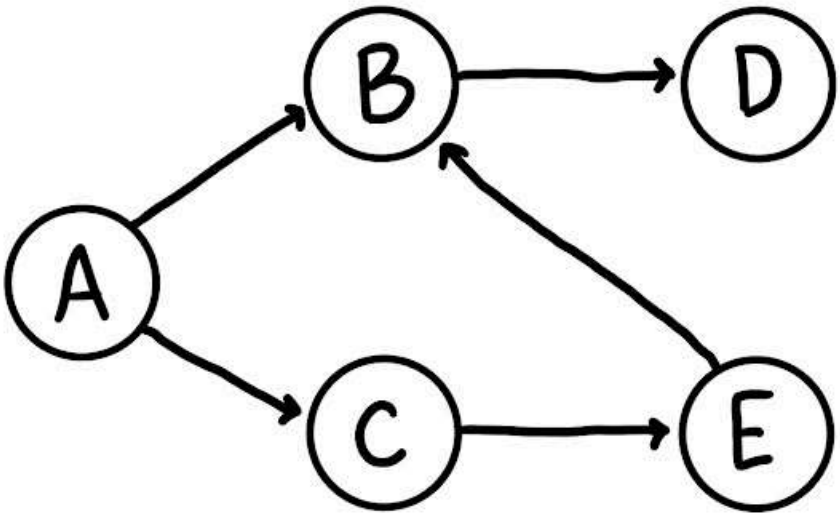
Select the correct topological sort of the following Directed Acyclic Graph. * 2 points



- A, B, C, F, D, E
- A, B, C, D, E, F
- A, F, C, D, E, B
- A, B, F, C, D, E

Brian performs a pre-order traversal on the DAG below, starting at vertex A. * 2 points
Will his output produce a valid topological sort?

Break ties alphabetically.



- ○ Yes
- ○ No

What pre-processing step can we apply to a DAG before running Dijkstra's, * 2 points
in order to obtain the longest path to any vertex in the original DAG?

- ○ Flip the orientation of every edge
- ○ Scale every edge weight by 10
- ○ Multiply the edge weights by -1
- ○ Remove all edges from the graph that are not touching our our start vertex

Jenny is planning out her course schedule. She has a list of classes she needs to take, each with their respective pre-requisites. What algorithm can her problem be **reduced** to? * 3 points

- ○ Depth First Search: Construct a source vertex and a vertex for each class. Then, construct an edge from u to v if class u is a pre-requisite of v. Then run DFS.
- ○ Kruskals: Construct a vertex for each class. For each vertex v, construct an incoming edge with a weight equal to the number of pre-requisites class v has. Then run Kruskals.
- ○ Topological Sort: Construct a vertex for each class. Then, construct an edge from u to v if class u is a pre-requisite of v. Then run Topological Sort.

A copy of your responses will be emailed to yiyunchen@berkeley.edu.

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