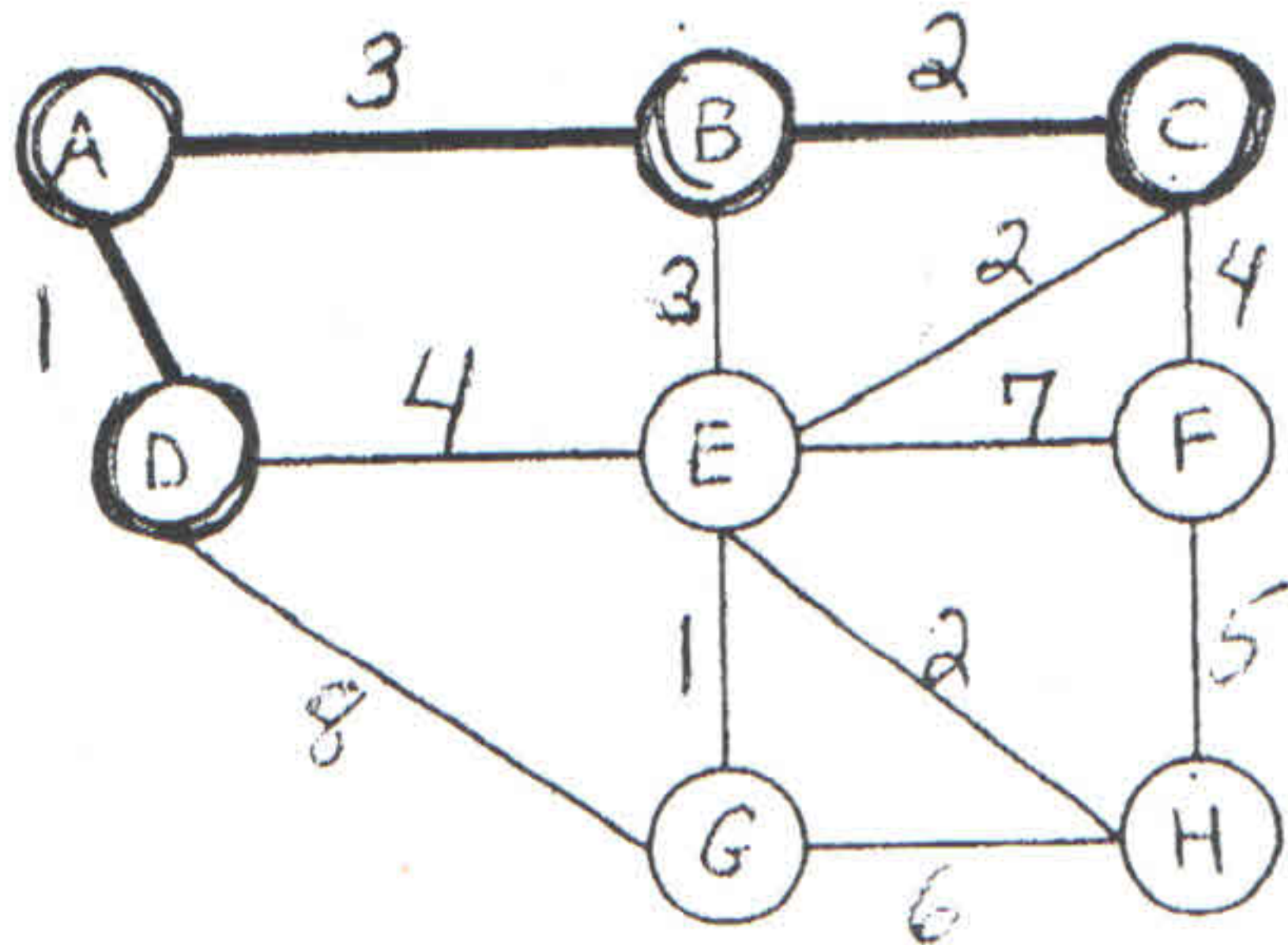Part 1:   We are running Prim's Minimum Spanning Tree algorithm on the following graph. We began with node A. The edges that are **bold** were already processed.

Which edge would be added next to Prim's MST? _____ , _____

After adding the edge, what is the list of fringe vertices: _____ . _____

Part 2: Show Dijkstra's shortest path tree for the graph in Part 1, beginning with node A.

Question #3 DFS and BFS:

a) Perform a Depth-First Search of the following digraph. List the order in which vertices are visited, and show the data structure as it is used by the algorithm.

b) Give the topological ordering of the nodes of the graph.

c) Perform a Breadth-First Search of the digraph. List the order in which vertices are visited, and show the data structure, and its values, as the algorithm proceeds.