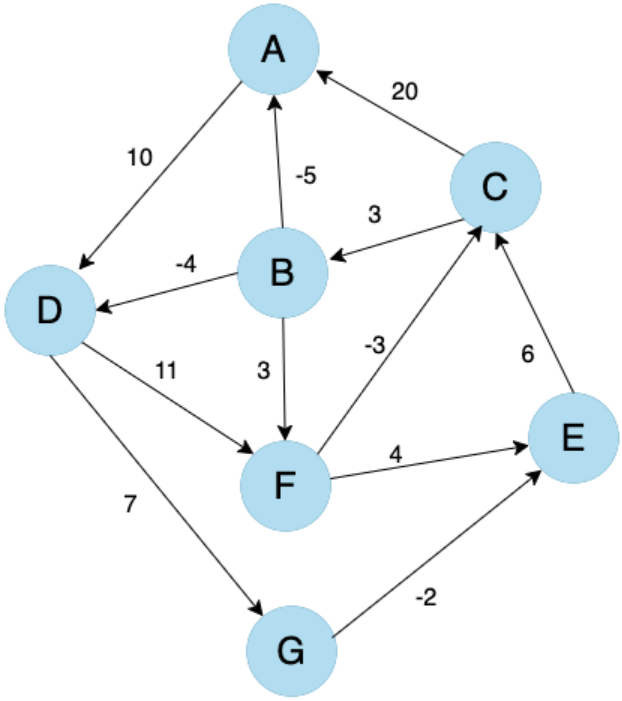
CMSC 142 Homework 5
Deadline: May 20, 2025 (Tuesday) @ 7am
By Pair



Given the graph above, do the tasks below.

1. Create a spanning tree. If there are multiple neighbors, select the vertex to traverse first with the lesser weight. Assume that the source vertex is A.
    a. BFS Traversal
    b. DFS Traversal
2. Find the minimum spanning tree of the graph using the following algorithms:
    a. Kruskal's Algorithm
    b. Prim's Algorithm
3. Find the all-pairs shortest path of the graph using Johnson's Algorithm. Show the following:
    a. The shortest paths from the (new) source vertex using Bellman-Ford Algorithm.
        i. Specify the number of iterations done
        ii. You may just show the final table containing the costs / distances from source to each vertex and the previous node
    b. Show the reweighted edges after performing the Bellman-Ford Algorithm
    c. Perform Dijkstra's algorithm on the following vertices:
        i. A
        ii. G
        iii. F
    d. Reweight and compute the original distances