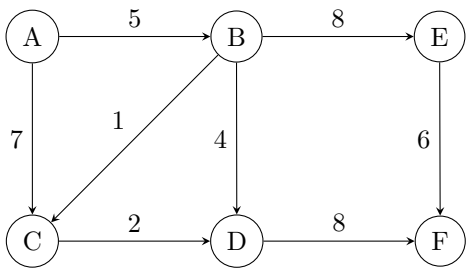

Problem 1. Perform a breadth-first search of the graph starting from vertex A. Give the number of steps to reach *every* other vertex. Additionally, give the order in which the vertices are *first* witnessed; that is, give the order in which they first enter the exploration queue (and not necessarily the order in which they are explored).

Number of steps required:

- A: 0
- B: 1
- C: 1
- D: 2
- E: 2
- F: 3

Order of first enqueued: A,B,C,D,E,F

Problem 2. Use Dijkstra's algorithm on this graph starting from vertex A. Give the cost of the least-cost path to *every* other vertex. Additionally, give the order in which the vertices are *first* witnessed; that is, give the order in which they first enter the exploration queue (and not necessarily the order in which they are explored).

Cost of least cost path originating from A:

- A: 0
- B: 5
- C: 6
- D: 8
- E: 13
- F: 16

Order of first enqueued: A, B, C, D, E, F

Problem 3. Give two valid topological sorts of this graph.
Sort 1: A, B, C, D, E, F
Sort 2: A, B, C, E, D, F