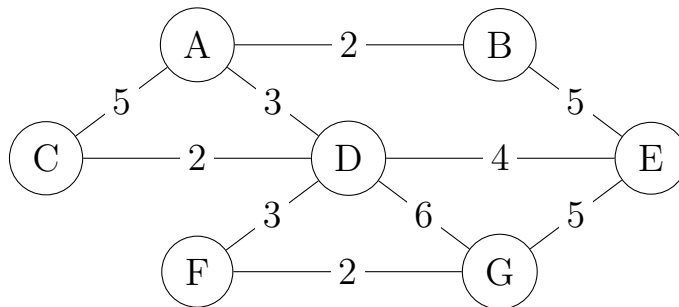


# Shortest Path and Minimum Spanning Tree

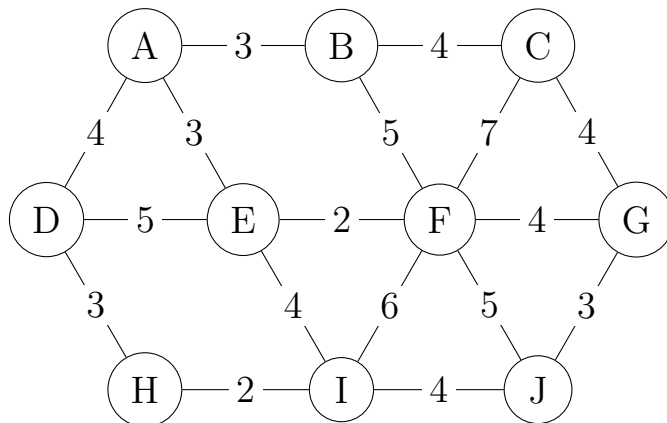
## Question Bank

NOTE: Remember that some graphs have many minimum spanning trees. So if your tree looks different to a solution you can check that the total of all edge weights on your tree is as small as the example tree.

1. For the following graph:

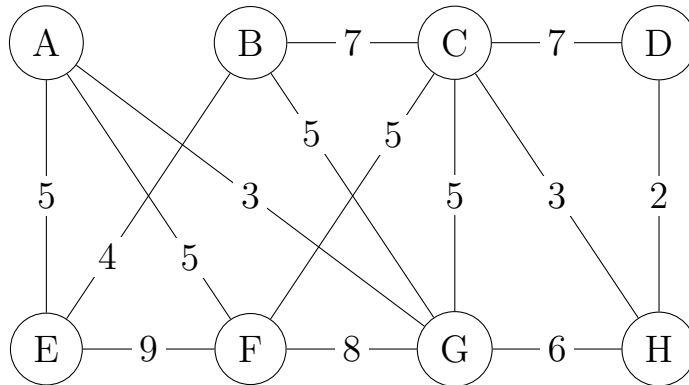


- Find the shortest path from C to G.
  - Find the shortest path from F to B.
  - Draw a minimum spanning tree.
2. For the following graph:



- Find the shortest path from C to D.
- Find the shortest path from H to B.
- Draw a minimum spanning tree.

3. For the following graph:

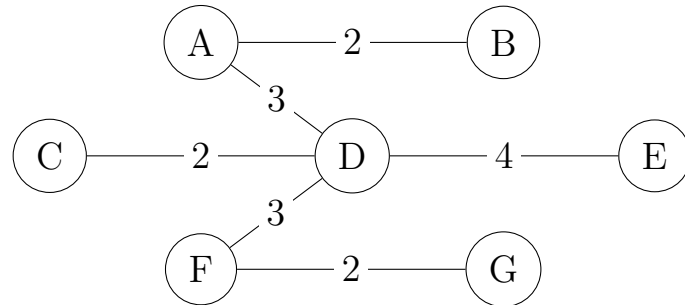


- Find the shortest path from E to C.
- Find the shortest path from D to E.
- Draw a minimum spanning tree.

## Answers

1. a)  $C \rightarrow D \rightarrow F \rightarrow G$ , weight of 7

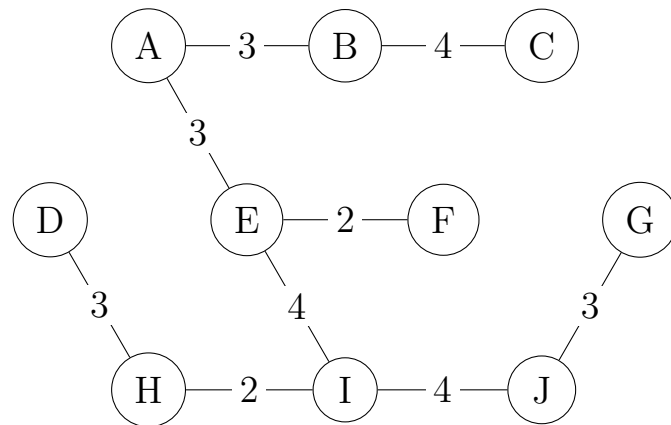
b)  $F \rightarrow D \rightarrow A \rightarrow B$ , weight of 8



c)

2. a)  $C \rightarrow B \rightarrow A \rightarrow D$ , weight of 11

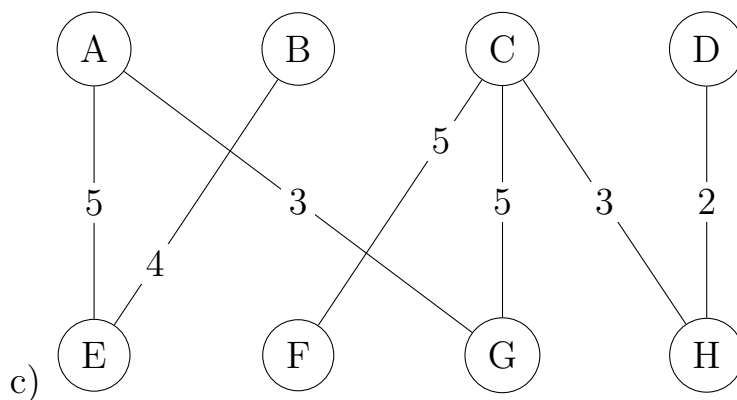
b)  $H \rightarrow D \rightarrow A \rightarrow B$ , weight of 10



c)

3. a)  $E \rightarrow A \rightarrow G \rightarrow C$ , weight of 13

b)  $D \rightarrow H \rightarrow C \rightarrow G \rightarrow A \rightarrow E$ , weight of 18



c)