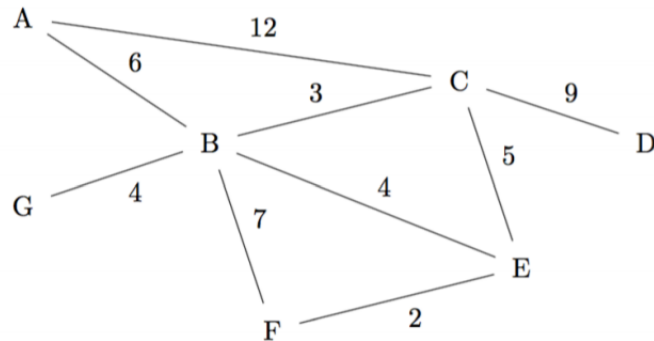


Introduction to MSTs



- (a) For the graph above, list the edges in the order they're added to the MST by Kruskal's and Prim's algorithm. Assume Prim's algorithm starts at vertex A. Assume ties are broken in alphabetical order. Denote each edge as a pair of vertices (e.g. AB is the edge from A to B)

Prim's algorithm order:

Kruskal's algorithm order:

- (b) Is there any vertex for which the shortest paths tree from that vertex is the same as your Prim MST? If there are multiple viable vertices, list all.
- (c) True/False: Adding 1 to the smallest edge of a graph G with unique edge weights must change the total weight of its MST
- (d) True/False: The shortest path from vertex A to vertex B in a graph G is the same as the shortest path from A to B using only edges in T , where T is the MST of G .
- (e) True/False: Given any cut, the maximum-weight crossing edge is in the maximum spanning tree.