1. Taking the vertex \textbf{a} as your starting point, perform a \textit{depth first traversal} of the directed graph below. Draw the resulting spanning tree.

In the depth first traversal, the edges are added in the order:

(a,b), (b,d), (a,c), (a,e)

2. Taking the vertex \textbf{a} as your starting point, perform a \textit{breadth first traversal} of the directed graph below. Draw the resulting spanning tree.

In the breadth first traversal, the edges are added in the order:

(a,b), (a,c), (a,e), (b,c)

3. Taking the vertex \textbf{a} as your starting point, apply Dijkstra’s shortest paths algorithm, described in section 12.5.2 of Kruse/Ryba to the weighted, directed graph below. Draw the graph composed of the graph nodes and the edges selected by that algorithm.

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Due: 23:59:59 pm on Friday, August 4
4. Taking the vertex \( a \) as your starting point, apply Prim’s minimal spanning tree algorithm, described in section 12.6.2 of Kruse/Ryba to the weighted, directed graph below. Draw the resulting minimal spanning tree.