1. True or False: If all edge weights are one, and the graph is undirected, then the single-source shortest path problem can be solved by performing a depth-first-search starting from the source vertex \( s \).

2. True or False: If all edge weights are one, and the graph is undirected, then the single-source shortest path problem can be solved by performing a breadth-first-search starting from the source vertex \( s \).

3. The single-source shortest path problem is only defined (i.e., makes sense) for weighted graphs which do not have ______ negative weight cycles. Assuming the single-source shortest path problem is defined for a given graph, Dijkstra's shortest path tree algorithm is only guaranteed to work correctly if the graph is further restricted to ______ positive weighted graphs.

4. Dijkstra's algorithm is similar to ______ Prim-Jarnik's ______ algorithm for computing minimum spanning trees and runs in ______ \( O((n + m) \log n) \) time.

5. True or False: Consider the graph shown below. Dijkstra's algorithm can be used to solve the single-source shortest path problem on this graph, and the algorithm will run in \( O(n^2) \) time.