1. **Consider a directed graph with distinct and nonnegative edge lengths and a source vertex s. Fix a destination vertex t, and assume that the graph contains at least one ss-t path. Which of the following statements are true? [Check all that apply.]**
2. **Consider a directed graph G with a source vertex s, a destination t, and nonnegative edge lengths. Under what conditions is the shortest s-t path guaranteed to be unique?**
3. **Consider a directed graph G = (V,E) and a source vertex ss with the following properties: edges that leave the source vertex ss have arbitrary (possibly negative) lengths; all other edge lengths are nonnegative; and there are no edges from any other vertex to the source ss. Does Dijkstra's shortest-path algorithm correctly compute shortest-path distances (from ss) in this graph?**
4. **Consider a directed graph G and a source vertex s. Suppose G has some negative edge lengths but no negative cycles, meaning G does not have a directed cycle in which the sum of the edge lengths is negative. Suppose you run Dijkstra's algorithm on G (with source ss). Which of the following statements are true? [Check all that apply.]**
5. **Consider a directed graph G and a source vertex s. Suppose G contains a negative cycle (a directed cycle in which the sum of the edge lengths is negative) and also a path from s to this cycle. Suppose you run Dijkstra's algorithm on G (with source s). Which of the following statements are true? [Check all that apply.]**