CS340 Analysis of Algorithms
Fall 2025

Lab:	**5**	**Professor:**	**Elizabeth Dinella**
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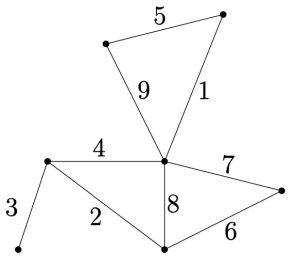
Title:	**MST**	**URL:**	**https://bmc-cs-340.github.io**

Answer the following questions for the graph on the right. Assume that s, the source/start vertex is the bottom left vertex. The numbers on the edges are the edge weights.



1. Trace Kruskal's algorithm on the graph. For each interation, list the contents the Union-Find data structure and the current MST
2. Trace Prim's from s. For each interation, list contents of the priority queue and the current MST.
3. Add an edge and its weight to the graph so that the MST changes. Highlight the new minimum spanning tree.
4. Is it always true that the shortest path tree is the same as the minimum spanning tree? If yes, argue why yes. If not, find a counter example.