CSCE 5150 Analysis of Computer Algorithms
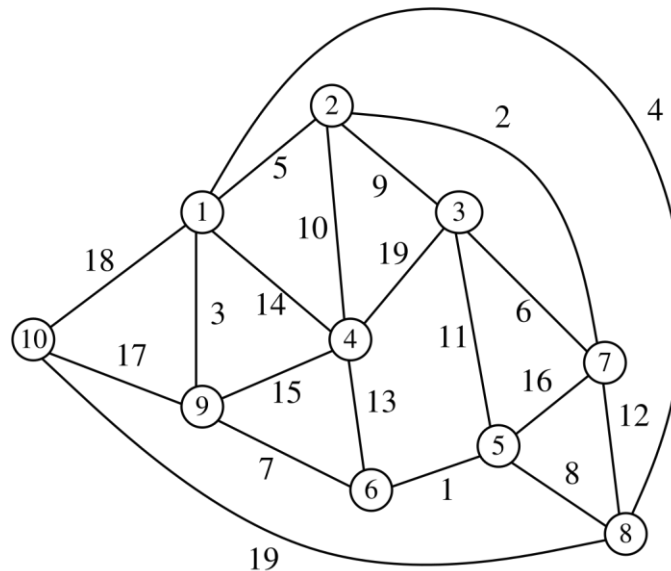
Assignment 3

Due on Canvas

(100 points)

State your answers legibly and concisely. Your solutions will be graded on correctness, elegance, clarity, and originality. Please remember that although group work is permitted, the work handed in must be in your own words.

Question 1 [50 points] Run Prim's algorithm on the following graph, and draw the minimum spanning tree that it finds, and list the edges in the order in which they are chosen (you may use the edge costs for this purpose).

Question 2 [50 points] Show by example that the path between a pair of vertices in a minimum spanning tree of an undirected graph is not necessarily a min-cost path.