Assignment 7

Due on 2021-10-15, 23:59 ET.

Question 1: Consider the problem of finding maximum flow in a network. State MINT and MAXF. How to solve the problem if the network is directed?

Question 2: Consider the linear programming formulation of the problem of finding maximum flow in a directed network. What type of constraints does the problem have?

Question 3: Consider a linear programming formulation of the problem of finding maximum flow in a directed network. How do you convert the constraints into inequalities?

Question 4: Consider the problem of finding minimum spanning tree in a weighted graph. What type of constraints does the problem have?

Question 5: Consider the problem of finding a shortest path from a source node to a destination set. Suppose we increase the weight of one edge in the graph by 1 unit. How does the shortest path may change in the modified graph?

Question 6: State True or False: Consider the directed path problem where every edge has a positive weight. Then the directed path from source to destination may have a negative weight.

Question 7: Consider the problem of finding a shortest path from a source node to a destination set. Suppose we increase the weight of one edge in the graph by 1 unit. How does the shortest path may change in the modified graph?

Question 8: Consider the problem of finding a shortest path from a source node to a destination set. Suppose we increase the weight of one edge in the graph by 1 unit. How does the shortest path may change in the modified graph?

Question 9: Suppose we perform a primal dual of a problem in Linear Programming. After few iterations we are unable to solve the dual problem. Then your conclusion is:

Question 10: Suppose we perform a primal dual of a problem in Linear Programming. After few iterations we are unable to solve the dual problem. Then your conclusion is:

Question 11: Suppose we perform a primal dual of a problem in Linear Programming. After few iterations we are unable to solve the dual problem. Then your conclusion is: