Assignment Three

Name:	
Student Number:	

Direction:

Please answer all the questions below and hand in your answers before the due day. All work, must be handed in **on time**.

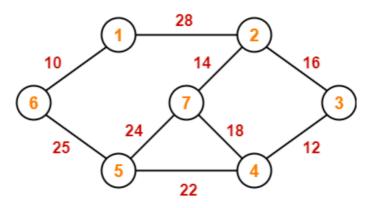
Due day:

June. 14, 2021

Questions:

- 1. Consider two teams, A and B, playing a series of games until one of the teams wins n games. Assume that the probability of A winning a game is the same for each game and equal to p, and the probability of A losing a game is q=1-p (Hence, there are no ties.) Let P(i,j) be the probability of A winning the series if A needs i more games to win the series and B needs i more games to win the series.
 - a. Set up a recurrence relation for P(i,j) that can be used by a dynamic programming algorithm.
 - b. Find the probability of team A winning a seven-game series if the probability of it winning a game is 0.4.
 - c. Write pseudocode of the dynamic programming algorithm for solving this problem and determine its time and space efficiencies.

- 2. Construct the minimum spanning tree (MST) for the given graph and calculate the cost of MST.
 - a. Using Prim's Algorithm



b. Using Kruskal's algorithm

