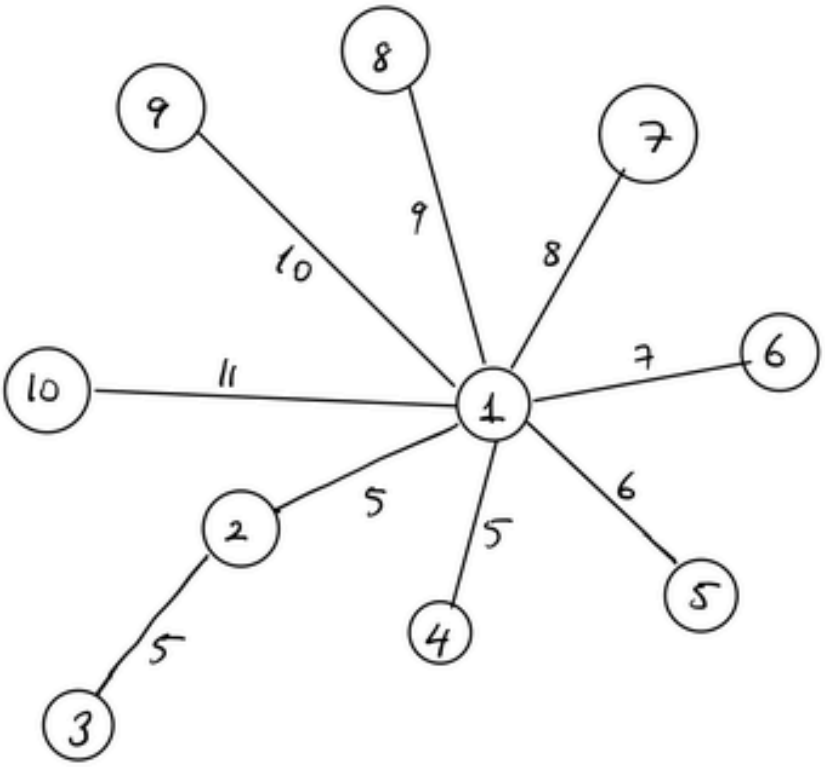
Title: Graphs
Author : Mustafa Mert Gülhan
ID: 22201895
Section : 1
Homework : 4
Description : Answers to Q1,Q2

Question 1:



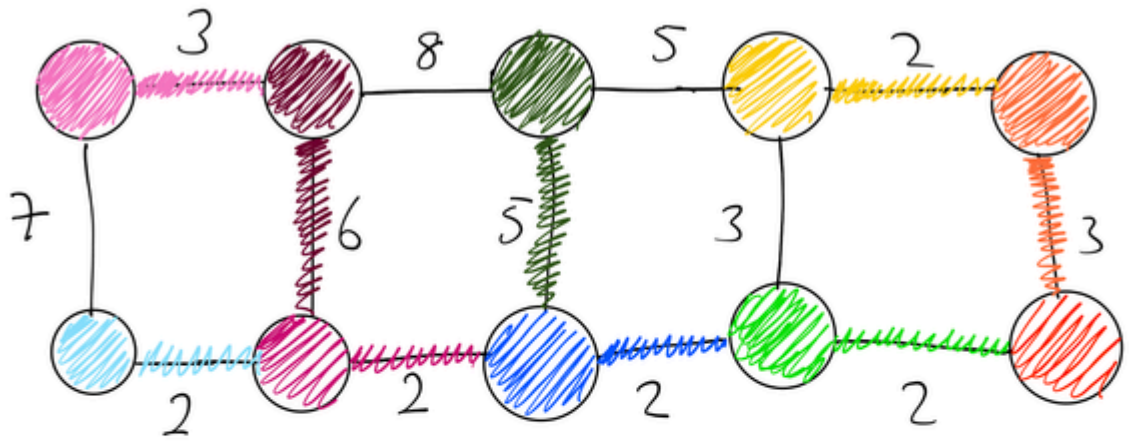
This is the MST for the given complete graph.

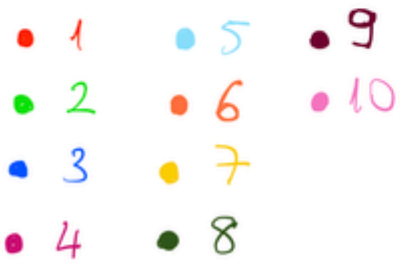
Total Weight of Edges is:

5+5+5+6+7+8+9+10+11 = 66

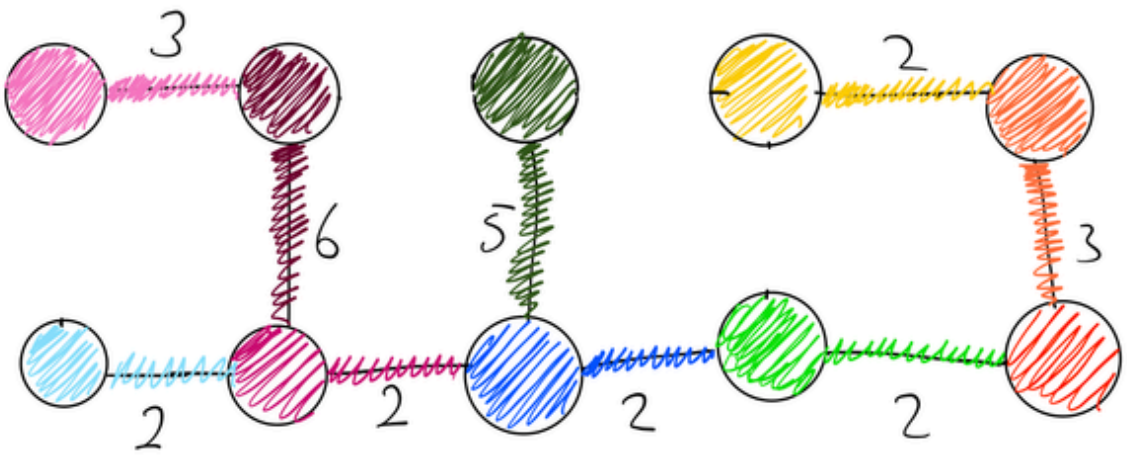
Question 2:

We need to find the Minimum Spanning Tree for minimizing the wiring by connecting every room with a wire. Both Kruskal's and Prim's algorithms are suitable for finding the MST. Let's apply Prim's.





I have chosen the rightmost bottom vertex to start. Then for every iteration of the loop in Prim's algorithm (which finds the least-cost edge from a visited to unvisited vertex) I used different colors to show it.



Then this is the final result that minimizes the cost of wiring which is equal to:

2+2+2+2+3+6+5+3+2 = 27