Spanning Tree – No of nodes

$G(N, E)$ → $G'(N, N-1)$ → Connected, No cycle/loop.

No. of edges

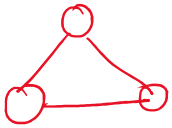
Graph (G). → Spanning Tree



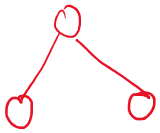
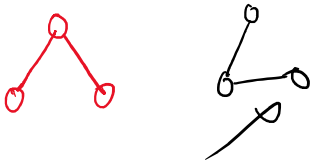
n = 1.



n = 2



n = 3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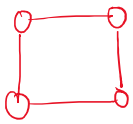
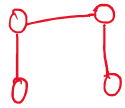
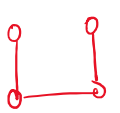

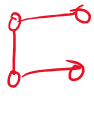
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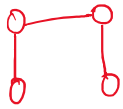


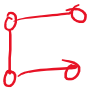
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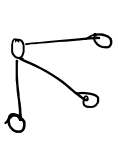
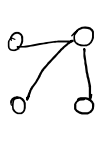
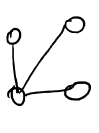
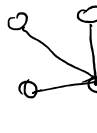
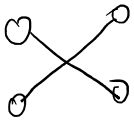
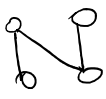
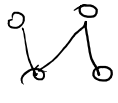
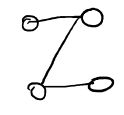
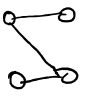
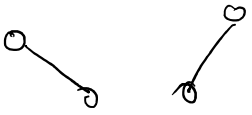
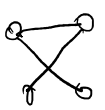
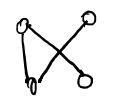
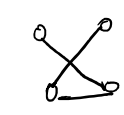
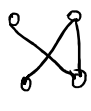
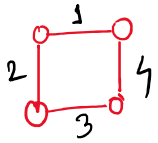
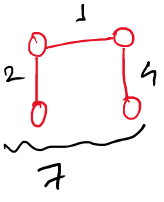















Minimum Spanning Tree


n = 4.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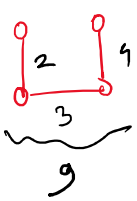
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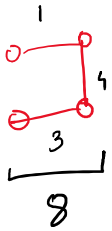
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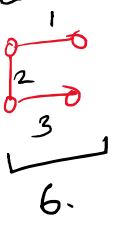
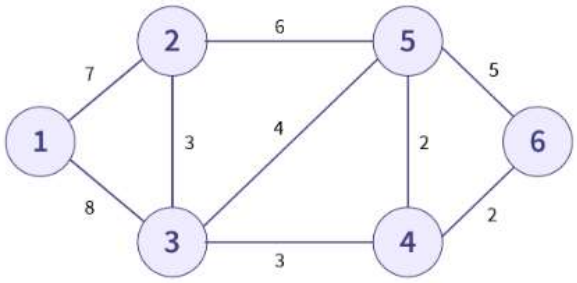
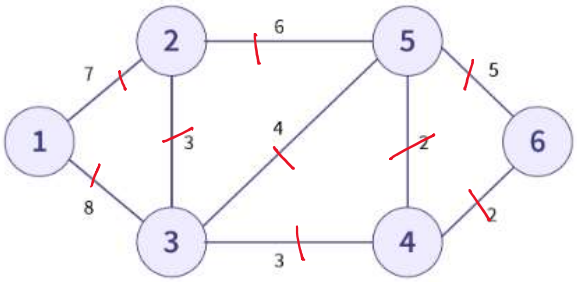

6.

Kruskal's algorithm is a greedy algorithm in graph theory that is used to find the Minimum spanning tree.

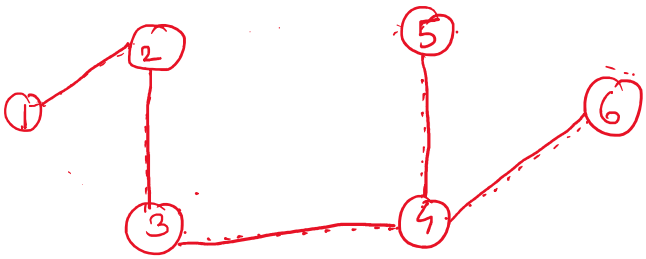


Graph G

- Sort all the edges of the graph in ascending order of their weights.
- Check the edge with minimum weight, if including it in the answer forms a cycle discard it, otherwise include it in the answer.
- Repeat the above step until we have chosen $V - 1$ edges.



Graph G



Node A	Node B	Weight
4	5	2 ✓
4	6	2 ✓
2	3	3 ✓
3	4	3 ✓
3	5	4 × cycle.
5	6	5 × cycle
2	5	6 × cycle.
1	2	7 ✓
3	1	8

Total Wt = 17 //