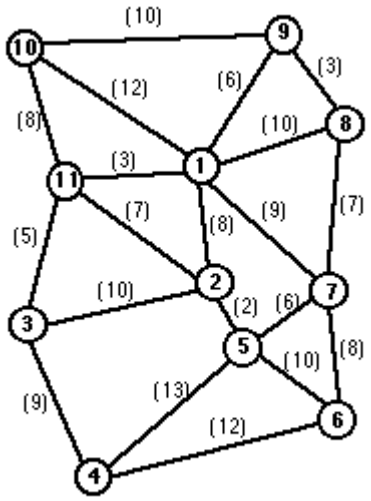
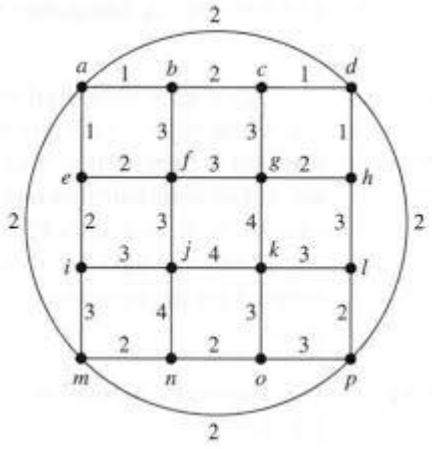
Graph theory Assignment problems

1) Let G be a graph of order 8(vertices) and size 15(edges) in which each vertex is of degree 3 or 5. How many vertices of degree 5 does G have. Construct one such graph G.
2) Find the Minimum Spanning Tree by using prims algorithm



3) Find the minimum spanning tree by using kruskal's algorithm.



4) Find the Shortest route from 1 -11 by using Djkstra's algorithm

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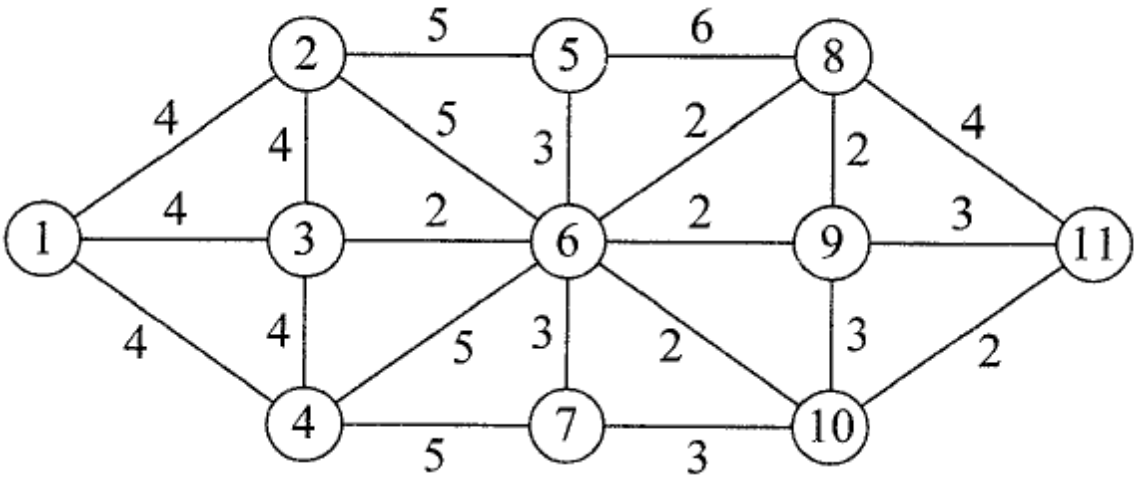
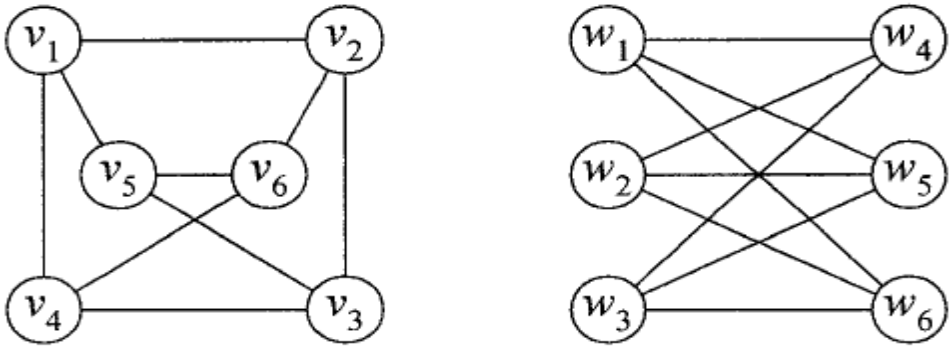
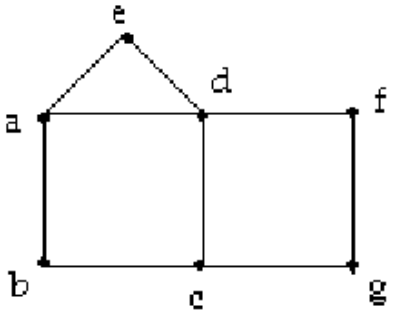


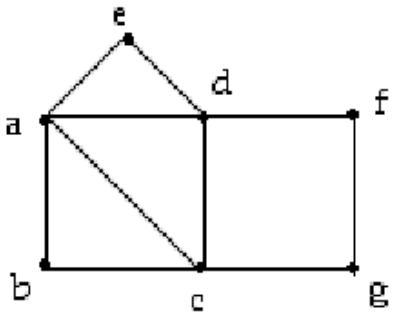
5) Prove that if G is isomorphic then Complement of G is also isomorphic.
6) Determine the following graphs are isomorphic or not



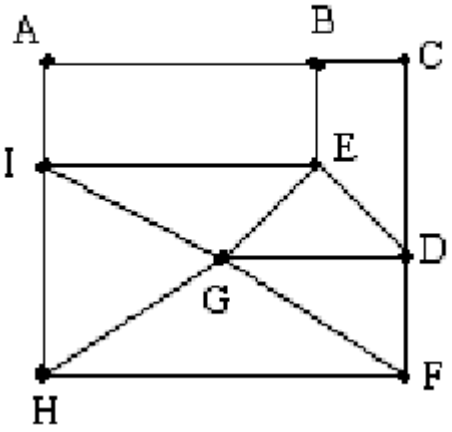
7) Represent the compound propositions $(\neg p \wedge (q \leftrightarrow \neg p)) \vee \neg q$ using ordered rooted tree. Write the expressions in prefix notation, postfix notation and infix notation.
8) Euler circuit

Do either of these graphs contain an Euler circuit? If so, find one.





B) Find the Hamiltonian circuit in the following graph



9) WALKS, PATHS, CIRCUITS

In the graph below, find five paths starting at *a* and ending at *e*. Find five paths starting at *c* and ending at *g*. Find four circuits based at *b* and at *k*.