

Name

group row col....

1. Graph G_1 is planar. [YES] [NO] Prove your answer.
2. Graph G_2 is planar. [YES] [NO] Prove your answer.
4. Preset algorithm base on "party" to find a perfect matching or show there is no perfect matching.
Instance: A: 1,2,3,4,9, B: 1,2,3, C: 1,2,3, D: 1,2,3, E: 4,5, F: 1,6,7, G: 2,6, H: 5,6,8, I: 3,4,5.
5. Proof that if in G there is at most 5 vertices of degree bigger or equal to 5 then G is 5-colourable.
6. Let G be a planar bipartite graph. How many edges can be in G at most if G has n vertices. Prove that $\delta(G) \leq 3$.
7. Prove that if G is planar 3-regular graph such that every face is a triangle then the number of vertices is equal to the number of faces.
8. Find maximal flow and minimal cut in the network: