

Exercise #12

(範圍: Graph Theory)

1. How many regions are there in any planar drawing of a connected planar graph with 15 vertices and 34 edges? (10%)
2. Is $K_{3,2}$ a planar graph? Why? (10%)
3. Prove the second corollary on page 96 of lecture notes. (15%)
4. P. 666: 4 (only for (c) and (d)). (10%)
5. For the graph of Figure 11.72(b), give all maximal cliques of sizes greater than two. Which is the maximum clique? (10%)
6. How to modify a maximum clique algorithm (i.e., an algorithm that can find a maximum clique of a graph) so that it can be used to find a minimum vertex cover of a graph? (10%)
7. Prove the theorem on page 124 of lecture notes. (15%)
8. P. 658: 4 (only for Example 13.12). (20%)