WRITTEN ASSIGNMENT # 2
MATH 38
DUE: WEDNESDAY: APRIL 6, 2005

1. What is the Chromatic number of a graph? Give a graph with 5 vertices and compute its chromatic number.

2. For what values of k is K_n k-partite?

3. What is a planar graph? Give an example of a graph that is planar and one that is not planar.

4. Write the adjacency matrix for C_5.

5. Write the incidence matrix for K_4.

6. Why isn't G_2 isomorphic to G_3 in the bottom of page 10?

7. What do you have to do to show that two graphs are isomorphic?

8. What do you have to do to show that two graphs are not isomorphic?

9. If G is isomorphic to H, what can you say about $\bar{G}$ and $\bar{H}$? (page 10).

10. In class we showed that there are graphs with 4 and 5 vertices that are self-complementary. Is there a graph with 6 vertices that is self complementary why or why not?

11. Find a graph with 8 vertices that is self-complementary (This is the answer to Seth's question).

12. Give an example of a graph with 6 vertices and 9 edges and give two graphs H_1 and H_2 so that H_1 is a subgraph of G, but H_2 is not.