WRITTEN ASSIGNMENT # 13
MATH 38
DUE: WED., MAY 4, 2005

Read Section 3.3

1. What is a factor of a graph G, what is a k-factor?

2. What is the difference between a 1-factor and a matching?

3. Is it true that every Eulerian graph contains a 2-factor?

4. What does $o(H)$ denotes?

5. Is it true that every 3-regular graph decomposes into 1-factor and a 2-factor?

6. What is Tutte's condition? State Tutte's 1-factor theorem.

7. The proof of Tutte's theorem uses case by case describe these cases in detail.

8. Using Tutte's theorem how would we show that the graph does not have a 1-factor?

9. Give an example of a graph G so that $\alpha'(G)$ and $\beta(G)$ are not equal.

10. What is the join of two graphs? Draw $C_3 \vee C_3$.

11. How do we prove that every 3-regular graph with no cut-edge has a 1-factor?

12. Give an example of a graph that satisfies Theorem 3.3.9 and an example of a graph that doesn't satisfy the conditions.