Discrete Mathematics 21-228
Assignment #3 Due Tuesday, May 25

1. Prove the Binomial Theorem.

2. Let F_n be the n^{th} Fibonacci number. Prove:

$$\sum_{i=1}^{n} F_{2n} = F_{2n+1} - 1$$

3. page 63, problem 3.8.7

4. What is the coefficient of $x^3y^6z^2$ in the expansion of $(x + y + z)^{11}$?

5. Assume that every pair of people are either friends or enemies. Show that at a party of 6 people, there must be a group of 3 people that are all friends, or a group of 3 that are all enemies. Show that this is not necessarily true at a party of 5 people.