CS 485 Assignment 5, due March 3

1. Consider generating a random graph by flipping two coins, one with probability p_1 of heads and the other with probability p_2 of heads. Create an edge if either coin comes down heads. The graph generated will be in G(n,p) for what value of p.

2. Create some mathematical structure and a property that has a phase transition. One possibility would be to generalize Su Doku to have a parameter n.

4. Find a closed form for the generating function for the infinite sequence of prefect squares 1, 4, 9, 16, 25, ...

5. Given that $\frac{1}{1-x}$ is the generating function for the sequence 1,1,1,..., for what sequence is $\frac{1}{1-2x}$ the generating function for.