Math 378 Spring 2011
Assignment 1

To Hand In:

Brualdi Ch. 3: 4,5,6,7[†],10,16,17,18,19b

[†]Hint: Since no difference is divisible by 100, the remainders when the integers are divided by 100 are distinct. Now form some pairs.

Not To Hand In:

Brualdi Ch. 3: 14, 15, 19a

Extra Problems

1. Find the value of the Ramsey number $r(2, 2, 2, 6)$. (4 colors).

2. Use Ramsey's Theorem to prove that for each pair of positive integers m and n, there exists a positive integer N such that every sequence of N distinct real numbers has either an increasing subsequence of length m or a decreasing subsequence of length n.

3. Find a sequence of 36 distinct positive integers that has no monotone subsequence of length 7. This means our theorem is best possible.