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## Math 378 Spring 2011 Assignment 2

To Hand In:

Brualdi Ch. 2: 1, 7, 9, 13, 19, 20, 28, 31, 35 (just 3-combinations), 38, 45, 51, 57<sup>†</sup><sup>†</sup>, 63

<sup>†</sup>For this question you need to know that there are 5 cards in a poker hand.

Also, for #32, look at the book's answer to the problem. Explain where it comes from. Explain why  $\frac{12!}{3!4!5!}$  is also the answer.

Also, for #36, explain the book's answer.

## Extra Problems

1. If you randomly choose 10 elements from a multiset with 5 elements, all with infinite multiplicities, ie.  $\{\infty A, \infty B, \infty C, \infty D, \infty E\}$ ,

(a) What is the probability your chosen set contains no A's?

(b) What is the probability your chosen set does not contain at least one of each of the five different elements?

2. (a) How many ways are there to choose 3 distinct integers from the set  $S = \{1, 2, ..., 30\}$ ?

(b) How many ways are there to choose 3 distinct integers from S where no two (or more) of them are consecutive?