Definitions:

Basic Counting Law: pg. 271

Permutation: pg. 273

n Factorial: pg. 223

Number of Permutations: pg. 273

Number of Permutations of n objects taken r at a time: pg. 275

Combination: pg. 277

Number of Combinationss of n objects taken r at a time: pg. 277

Examples:

Basic Counting Law: (# 4 pg. 283) Suppose there are six horses running in a race. How many different outcomes (orderings from first to sixth place) are possible? Ignore the possibility of a tie.

A Deck of Cards: (# 8 pg. 283) Find the number of ways to draw a four-card hand with two kings and two aces. (*Hint:* Combinations will be useful.)

Passwords: (#17 pg. 283) Suppose a bank password must consist of five digits or letters (they can be mixed).

(a) How many such passwords are possible?

(b) How many such passwords begin with the letter B?

Art Contest: (pg. 282) Suppose there are 24 entries in an art contest. First, second, and third place awards will be given along with five honorable mention awards. In how many ways can these awards be made?