MM2 – Chapter 15 – Section 3

Pre-Class Question:

What is P(6,2) and C(6,2)? Why are these numbers different? What is the difference between Combinations and Permutations?

Class Worksheet

1. There are 10 questions on an exam, you are required to do 8 of the questions. How many different ways can you choose them?

2. There are 10 chairs and 8 people are seated. How different ways can they be arranged?

3. Prove the following:

$$(1+x)^N = \sum_{r=0} C(N,r)\ x^r$$

4. You put 6 balls into 3 boxes. Multiple balls can go in the same box.
    a. How many different ways can you arrange these?
    b. What is the probability that the following arrangement will be realized: Box 1 has four balls, Box 2 has 1 ball, and Box 3 has 1 ball?