Exam 2 Practice Problems

Part III – Counting

1. There are three letters in an airport's abbreviation.
   (a) How many different airport call letters are possible?
   (b) How many are possible if no repeats are allowed?
   (c) How many if three of the same letter is not allowed?
   (d) How many are possible if no repeats are allowed and a vowel must be in the middle?

2. A pizza place has 12 different toppings available for pizza. How many different 2 item pizzas are possible?

3. How many different “words” can be made from the letters in HALLOWEEN?

4. You are dealt 2 cards. How many ways can you be dealt a blackjack? (that is, a sum of 21 where an ace is worth 11 and a 10 and face cards are worth 10).

5. From a class of 18 students a committee of 5 is chosen. One person on the committee is the chair and the others are the members. How many different committees can be chosen?

6. You have 4 different yellow books and 4 different green books. How many ways can the books be arranged on the shelf if the colors must alternate?

7. You have a bag of jelly beans. There are 4 blue, 5 green and 2 pink jelly beans. A sample of 3 is chosen. How many ways to have exactly one blue or exactly two green?

8. How many ways can a hand of 4 cards be dealt if exactly 3 of them are queens?

9. You have advertisement to layout for a full page newspaper ad. The ad features 3 different departments and each department has 4 items for sale. If items from the same department must appear all on the same row, how many different ads are possible?