Math 1313
Mixed Problems from Sections 6.3 and 6.4

In the following problems, we will simply recognize the type of problem it is.

1. Each year a company gives 3 of its employees free trips. One is to Mexico, one is to the Caribbean Islands and one is to Hawaii. If the company has 50 employees, in how many ways can the winners be chosen?

2. How many ways are there to choose 6 books from a collection of 15 books? (Assume all the books are different.)

3. A high school cafeteria has the following items on its menu: 4 appetizers, 5 entrees, 3 salads, 5 desserts, and 2 flavor drinks. In how many ways can a student put together a meal consisting of an appetizer, an entrée, a salad, a dessert, and a drink?

4. A company needs to fill 5 positions for engineers. They receive 10 applications. Assume all applicants are equally qualified to fill the positions. In how many ways can the positions be filled from the applicant pool?

5. Ten people arrive at a ticket counter at the same time to buy concert tickets. In how many ways can they line up to buy tickets?

6. A high school Spanish club needs to create a social committee consisting of 7 members. If the club has 30 members, in how many ways can the committee be formed?

7. A coin is tossed 30 times. How many possible outcomes are there?

8. Corrie has five framed pictures she wants to arrange on a table from left to right. In how many ways can she arrange the 5 pictures from left to right? (Assume all the pictures are different.)

9. A high school Spanish club needs fill the positions of president, vice-president, treasurer, secretary, and historian. If the club has 30 members, in how many ways can the positions be filled?

10. In how many ways can an honor society with 16 senior members and 10 junior members choose a committee of 3 seniors and 2 juniors?

11. An honor society consists of 16 senior members and 10 junior members. A committee of 7 is to be selected. In how many ways can the committee consists of at most 2 senior members?

12. A coin is tossed 30 times. In how many outcomes do at least 29 tails occur?