Practice Exercises

A. Determine whether each situation involves a permutation or a combination.

1. Seven toppings for a pizza.
2. A classroom sitting arrangement.
3. Fifteen books in a library shelf.
4. Choosing a class president, vice president, and a secretary.
5. Eight outfits chosen from 15 outfits to be modeled.
6. A six-person committee from your math class.

B. Solve each problem completely.

1. From a class of 32 girls and 18 boys, how many study groups of 3 girls and 2 boys can be formed?

2. A five-member committee is being formed from a group of 9 sophomores and 12 seniors. How many committees can be formed given each condition?
   a. all sophomores
   b. 1 sophomore, 4 seniors
   c. 3 sophomores, 2 seniors
   d. any mixture of sophomores and seniors
3. A box of Mrs. Donuts contains 8 honey dipped, 6 bavarians, and 7 chocolate filled donuts. How many ways can 5 donuts be selected to meet each condition?
   a. all bavarian
   b. all chocolate filled
   c. 2 bavarians, 2 honey dipped, 1 chocolate filled
   d. any mixture of donuts

Problem Set

Solve each problem completely.

1. Anabelle would like to invite 9 friends to go on a trip but has room for only 5 of them. In how many ways can they be chosen?
2. A box with 12 articles contains one that is defective. In how many ways can Martin select 5 articles such that:
   a. the defective article is included?
   b. the defective article is not included?
3. A box contains 8 blue balls, 6 white balls, and 4 black balls. In how many ways can we select 4 balls such that:
   a. they are blue?
   b. they are all white?

c. they are all black?

d. two are blue, one is white, and one is black?

4. A group of 11 women and 6 men must select a four-person committee. How many committees are possible if it must consist of the following?

   a. three men and one woman

   b. any mixture of men and women

   c. a man and three women

5. A class consists of 12 boys and 15 girls. How many different committees of four can be selected from the class if each committee is to consist of two boys and two girls?

6. How many choices of 5 pocketbooks to read can be made from a set of nine pocketbooks?