**Find the number.**

1. C(7, 3) 2. C(9, 8) 3. C(n, n – 1) 4. C(7, 0)

**Find the number of possible color arrangements for the 12 given disks, arranged in a row.**

5. 5 black, 3 red, 2 white, 2 green

6. Ten people wish to play in a basketball game. In how many different ways can two teams of five players be formed?

7. Consider any eight points such that no three are collinear. How many lines are determined?

8. A student has five different math books, four different history books, and eight different fiction books. In how many different ways can they be arranged on a shelf if books in the same category are kept next to one another?

9. A football squad consists of three centers, ten linemen who can play either guard or tackle, three quarterbacks, six halfbacks, four ends, and four fullbacks. A team must have one center, two guards, two tackles, two ends, two halfbacks, a quarterback, and a fullback. In how many different ways can a team be selected from the squad?

10. A committee of 3 men and 2 women is to be chosen from a group of 12 men and 8 women. Determine the number of different ways of selecting the committee.

11. To win a state lottery game, a player must correctly select six numbers from the numbers 1 – 49.

(a) Find the total number of selections possible. (b) Work part (a) if a player selects only even numbers.

12. In a round-robin tennis tournament, every player meets every other player exactly once. How many players can participate in a tournament of 45 matches?

13. The winner of the seven-game NBA championship series is the team that wins four games. In how many different ways can the series be extended to seven games?

14. An ice cream parlor stocks 31 different flavors and advertises that it serves almost 4500 different triple scoop cones, with each scoop being a different flavor. How was this number obtained?

15. A fast food restaurant advertises that it offers any combination of eight condiments on a hamburger, thus giving a customer 256 choices. How was this number obtained?