

## Independent and Dependent Events

Would each of the following be an example of independent or dependent events? Explain why or why not in a complete sentence.

- [1] Rolling a standard six sided die two times.
- [2] Drawing two cards from a deck of standard playing cards, without replacing the first card.
- [3] Three students trying to guess a secret number from 1 to 10 that their teacher has chosen.
- [4] Spinning a spinner numbered from 1 to 8 three times.

A bag contains 15 blue marbles, 8 red marbles, and 3 green marbles. Two marbles are chosen at random from this bag, with the first **NOT** being replaced.

- [5] What is the probability that both marbles will be blue?
- [6] What is the probability that both marbles will be red?
- [7] What is the probability that neither marble will be blue?

Another bag contains 11 yellow marbles, 3 orange marbles, and 1 purple marble. Two marbles are chosen at random from this bag, with the first being replaced.

- [8] What is the probability that both marbles will be yellow?
- [9] What is the probability that both marbles will be orange?
- [10] What is the probability that neither marble will be purple?

Answer each of the following.

- [11] Stacey's drawer contains three red socks and six blue socks. Suppose that she chooses three socks at random. What is the probability she obtains a **matching pair** of socks?
- [12] You are playing a boardwalk game in which you throw three darts at the dartboard shown below, and win \$3.00 if all three darts hit shaded squares. However, each time you hit a shaded square, it then changes to a white square for all future dart throws. What is the probability that you will win \$3.00 playing this game?

