

## Review Exercises

*Do the following review exercises to practice with tree diagrams, the fundamental counting principle, and simple probability. When you are done, check your answers with the answer sheet and investigate independent probability.*

Directions: Draw a tree diagram and find the number of possible outcomes.

1. The continental breakfast at Homefire Inn has toast, muffin, or bagel with coffee, milk, or juice.
2. Cheerleading outfits come in 3 sizes, small, medium, and large. The letters come in 2 styles, script and block. The outfits come in 3 colors, blue, red, and green.
3. Holiday Autorama found that customers preferred vans, station wagons, and sports cars in red, white, and gray. Use a tree diagram to show what kinds of vehicles they should keep in stock.

Writing: Explain to someone new in our class how to create and use a tree diagram to find the sample space of a situation involving two events.

Directions: Use the fundamental counting principle to find the number of outcomes.

4. A number cube is rolled. Then a coin is tossed. How many outcomes are possible?
5. At Ben's Cafeteria, dinner consists of one main dish, one vegetable, and one beverage. The main dish choices are chicken, steak, or fish. The vegetable choices are corn, green beans, or broccoli. The beverage choices are juice or milk. How many dinners are possible?
6. A quiz has ten true-false questions. How many outcomes for giving answers to the ten questions are possible?
7. A quiz has five true-false answers and five multiple-choice questions. If each multiple-choice question has four choices, how many outcomes are possible?

Writing: Explain how to use the fundamental counting principle. What advantage does it have over a tree diagram?

Directions: There are 3 blue marbles, 6 red marbles, 2 green marbles, and 1 black marble in a bag. Suppose you select one marble at random. Find each probability.

8.  $P(\text{blue})$
9.  $P(\text{black})$
10.  $P(\text{green})$
11.  $P(\text{red})$
12.  $P(\text{not green})$
13.  $P(\text{blue or red})$
14.  $P(\text{green or black})$
15.  $P(\text{neither red nor green})$
16.  $P(\text{yellow})$
17.  $P(\text{not orange})$

Create a spinner for a board game that has more than three equal sections, and the probability of the spinner stopping on blue is 0.5.