3.1 EXERCISES

Building Basic Skills and Vocabulary

1. Determine which of the following numbers could not represent the probability of an event. Explain your reasoning.

(a) 0 (b) 0.001 (c) -1 (d) 50% (e) $\frac{745}{1262}$ (f) $\frac{45}{31}$

2. Explain why the following statement is incorrect:

The probability of rain tomorrow is 150%.

3. When you use the Fundamental Counting Principle, what are you counting?

4. Use your own words to describe the law of large numbers. Give an example.

Identifying a Sample Space *In Exercises 5–8, identify the sample space of the probability experiment and determine the number of outcomes in the sample space. Draw a tree diagram if it is appropriate.*

5. Guessing the initial of a student's middle name

6. Tossing three coins

7. Determining a person's blood type (A, B, AB, O) and Rh-factor (positive, negative)

8. Rolling a pair of six-sided dice

Recognizing Simple Events *In Exercises 9–12, determine the number of outcomes in each event. Then decide whether the event is a simple event or not. Explain your reasoning.*

9. A computer is used to randomly select a number between 1 and 2000. Event A is selecting 359.

10. A computer is used to randomly select a number between 1 and 2000. Event B is selecting a number less than 200.

11. You randomly select one card from a standard deck. Event A is selecting a king.

12. You randomly select one card from a standard deck. Event B is selecting a four of hearts.

13. Job Openings An insurance company is hiring for two positions: an actuary and a claims adjuster. How many ways can these positions be filled if there are 9 people applying for the actuarial position and 15 people applying for the claims adjuster position?

14. Menu A menu has three choices for salad, six main dishes, and four desserts. How many different meals are available if you select a salad, a main dish, and a dessert?

15. Security System The access code for a car's security system consists of four digits. The first digit cannot be zero and the last digit must be odd. How many different codes are available?

16. True or False Quiz Assuming that no questions are left unanswered, in how many ways can a six-question true-false quiz be answered?