7-2: Understand Theoretical Probability

1. Sample answer: You can use the theoretical probability of an event and proportional reasoning to predict about how many times an event is expected to occur in a given number of trials.

2. The sum equals 1; Sample answer: Since all sections are either green, blue, yellow, or red, it is certain that the pointer will land in a section that is one of these colors.

3. Sample answer: Each outcome has an equal chance of occuring because each is an equal part of the total possible outcomes.

4. $\frac{1}{6}$

5. $\frac{1}{2}$

6. About 4 times

7. $\frac{2}{8} = \frac{1}{4}$

8. $\frac{1}{2}$
   125

9. 60; 12

10. a. $\frac{1}{6}$
    b. $\frac{1}{3}$
    c. 50 times

11. About 20 times

12. a. $\frac{1}{2}$ $\frac{3}{10}$
    $\frac{1}{5}$

    b. The 15% discount; Sample answer: Using theoretical probability and proportional reasoning to make predictions for 300 customers, 150 will likely receive a 15% discount, 90 will likely receive a 20% discount, and 60 will likely receive a 30% discount.

13. A, D, E

14. 1,375