NAME _____ DATE _____

9-3 Simple Probability (Pages 440–443)

Probability is the chance that some event will happen. It is the ratio of the number of ways an event can occur to the number of possible outcomes. The set of all possible outcomes is called the **sample space**.

Probability	Probability $= \dfrac{\text{number of ways a certain outcome can occur}}{\text{number of possible outcomes}}$ The probability of an event, P(event), is always between 0 and 1, inclusive.

EXAMPLES

A bowl contains 7 slips of paper with the name of a day of the week on each slip.

A If you draw a slip from the bowl, what is the probability that the day contains the letter y ?

The probability of an event that is certain is 1. Since the name of every day of the week contains a "y," this probability is 1.

B What is the probability that you draw a day of the week that contains the letter s ?

Five days of the week have the letter "s." The probability of drawing a day with this letter is $\frac{5}{7}$.

Try These Together

1. What is the probability that a 5 is rolled on a number cube?

HINT: A 5 can occur in only 1 way on a single number cube. There are 6 possible outcomes.

2. Find the probability that a number greater than 6 is rolled on a number cube.

HINT: When an event is certain not to happen, the probability is 0.

PRACTICE

Suppose the numbers from 1 to 20 are written on 20 slips of paper and put into a bowl. You draw a slip at random. State the probability of each outcome.

3. The number is less than 5.

4. The number ends in 5.

5. The number is even.

6. The number is divisible by 3.

7. The number is prime.

8. The digits have a sum of 10.

9. The number is less than 25.

10. The number contains a 1.

There are 5 purple marbles, 7 gold marbles, and 3 red marbles in a bag. Suppose one marble is chosen at random. Find each probability.

11. P(gold) **12.** P(purple) **13.** P(red or gold) **14.** P(not red)

15. **Standardized Test Practice** What is the probability of rolling a number other than a 1 or 2 on a number cube?

A $\frac{5}{6}$ B $\frac{2}{3}$ **C** $\frac{1}{2}$ **D** $\frac{1}{3}$

Answers: 1. $\frac{1}{6}$ 2. 0 3. $\frac{1}{5}$ 4. $\frac{1}{10}$ 5. $\frac{1}{2}$ 6. $\frac{3}{10}$ 7. $\frac{2}{5}$ 8. $\frac{1}{20}$ 9. 1 10. $\frac{11}{20}$ 11. $\frac{7}{15}$ 12. $\frac{1}{3}$ 13. $\frac{2}{3}$ 14. $\frac{4}{5}$ 15. B