Lesson 4 Practice Problems

1. The table shows the results from a survey that asked 100 adults if they had a high school diploma and if their annual income was more than $30,000.

	$30,000 or less	more than $30,000
high school diploma	21	68
no high school diploma	9	2

A person who took the survey is selected at random.

   a. What is the probability that the person has a high school diploma and makes $30,000 or less?

   b. What is the probability that the person has no high school diploma and earns more than $30,000?

2. The table shows data from a science fair experiment that studied the number of eggs that hatched at three different temperatures.

	cool	room temperature	warm
hatched	6	14	23
not hatched	19	11	2

   a. What percentage of the eggs hatched?

   b. What percentage of the eggs that were at the cool temperature hatched?

   c. What percentage of the eggs were not at room temperature?

   d. What percentage of the eggs were at the warm temperature and did not hatch?

3. The table shows information from a survey about the resting heart rate in beats per minute (bpm), for 50 people living at altitudes above and below 10,000 feet.

	below 80 bpm	above 80 bpm	total
above 10,000 ft	3	19	22
10,000 ft or below	16	12	28
total	19	31	50

a. Create a two-way table that shows the relative frequency for each of the values in the table relative to all 50 people in the survey.

b. What is the probability that a person surveyed, selected at random, has a heart rate above 80 bpm or lives above 10,000 ft?
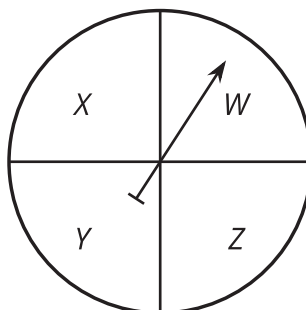
c. What is the probability that a person surveyed, selected at random, has a heart rate above 80 bpm and lives above 10,000 ft?

4. List all the possible outcomes for spinning the spinner and rolling a fair number cube.
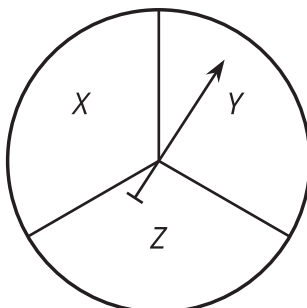
(From Unit 8, Lesson 3.)

5. A student flips a fair coin and then spins this spinner. How would you find the sample space?

(From Unit 8, Lesson 3.)

6. Select **all** of the words for which the probability of selecting the letter A at random is $\frac{1}{4}$

    A. AREA

    B. ACID

    C. ANGRY

    D. APPEASED

    E. AARDVARK

(From Unit 8, Lesson 2.)

7. On an assignment, there are two multiple choice questions with four answers choices each. You have no idea what the correct answer is to either one so you guess.

    a. What is the probability that you get both of them right by guessing? Explain your answer.

    b. What is the probability that you get exactly one of them right by guessing? Explain your answer.

(From Unit 8, Lesson 1.)

8. Here are 2 circles. The smaller circle has radius r, circumference c, and diameter d. The larger circle has radius R, circumference C, and diameter D. The larger circle is a dilation of the smaller circle by a factor of k.
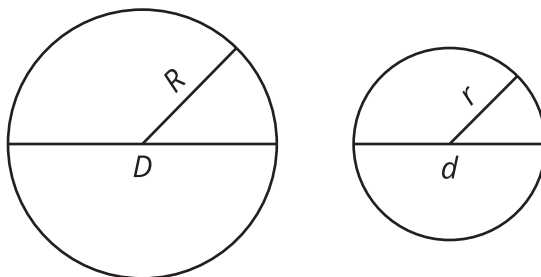
Using the circles, match the pairs of ratios with their values.

A. The ratios $\frac{C}{c}$ and $\frac{R}{r}$ are both equal to _____.

B. The ratios $\frac{C}{D}$ and $\frac{c}{d}$ are both equal to _____.

C. The ratios $\frac{D}{R}$ and $\frac{d}{r}$ are both equal to _____.

1. 2

2. k

3. π

(From Unit 7, Lesson 10.)