Worksheet 9-2 – Math 7

Theoretical and Experimental Probability

1. A number cube is rolled 24 times and lands on 2 four times and on 6 three times.

    a. Find the experimental probability of landing on a 2.

    b. Find the experimental probability of *not* landing on a 6.

    c. Compare the experimental probability you found in part a to its theoretical probability.

    d. Compare the experimental probability you found in part b to its theoretical probability.

2. ENTERTAINMENT Use the results of the survey in the table shown.

    a. What is the probability that someone in the survey considered reading books or surfing the Internet as the best entertainment value? Write the probability as a fraction.

    b. Out of 500 people surveyed, how many would you expect considered reading books or surfing the Internet as the best entertainment value?

    c. Out of 300 people surveyed, is it reasonable to expect that 30 considered watching television as the best entertainment value? Why or why not?

Best Entertainment Value	
Type of Entertainment	**Percent**
Playing Interactive Games	48
Reading Books	22
Renting Movies	10
Going to Movie Theaters	10
Surfing the Internet	9
Watching Television	1

3. A spinner marked with four sections blue, green, yellow, and red was spun 100 times. The results are shown in the table.

    a. Find the experimental probability of landing on green.

    b. Find the experimental probability of landing on red.

    c. If the spinner is spun 50 more times, how many of these times would you expect the pointer to land on blue?
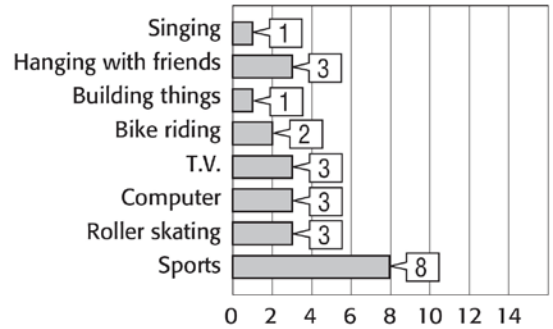
Section	Frequency
Blue	14
Green	10
Yellow	8
Red	68

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Theoretical and Experimental Probability

HOBBIES For Exercises 1–4, use the graph of a survey of 24 seventh-grade students asked to name their favorite hobby.
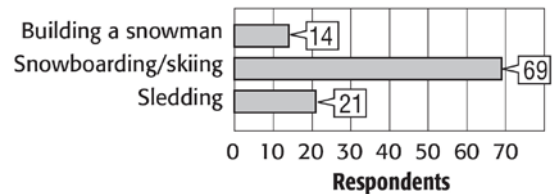
What is your favorite hobby?

Singing	1
Hanging with friends	3
Building things	1
Bike riding	2
T.V.	3
Computer	3
Roller skating	3
Sports	8

0 2 4 6 8 10 12 14

1. What is the probability that a student's favorite hobby is roller skating?	**2.** Suppose 200 seventh-grade students were surveyed. How many can be expected to say that roller skating is their favorite hobby?
3. Suppose 60 seventh-grade students were surveyed. How many can be expected to say that bike riding is their favorite hobby?	**4.** Suppose 150 seventh-grade students were surveyed. How many can be expected to say that playing sports is their favorite hobby?

WINTER ACTIVITIES For Exercises 5 and 6, use the graph of a survey with 104 responses in which respondents were asked about their favorite winter activities.

What is your favorite winter activity?

Building a snowman	14
Snowboarding/skiing	69
Sledding	21

0 10 20 30 40 50 60 70
Respondents

5. What is the probability that someone's favorite winter activity is building a snowman? Write the probability as a fraction.	**6.** If 500 people had responded, how many would have been expected to list sledding as their favorite winter activity? Round to the nearest whole person.