



7-3 Additional Practice

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1. An eighth-grade class rolls a number cube with faces labeled 1 through 6. The results of 50 rolls are recorded in the table below. Find the relative frequency that a number less than 4 is rolled.

Number Cube Rolls

Outcome	1	2	3	4	5	6
Frequency	6	4	8	12	10	10

A number less than 4 was rolled times.

The number cube was rolled times.

The relative frequency of rolling a number less than 4 is %.

2. Ellen flipped a coin 80 times. The coin landed heads up 44 times and tails up 36 times. Compare the theoretical and experimental probabilities of the coin landing tails up.

Theoretical probability = %.

Experimental probability = %.

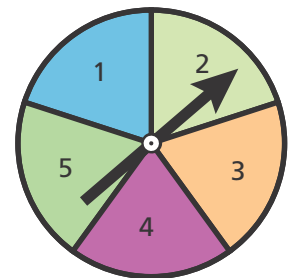
The theoretical probability is
than the experimental probability.

3. After many studies, a researcher finds that the probability that a word-recognition program correctly interprets a hand-written word is $\frac{9}{10}$. How many words out of 40 would the researcher expect the program to correctly interpret?

4. The table shows a student's results from spinning the pointer 30 times.

Spinner Frequency

Outcome	1	2	3	4	5
Frequency	9	5	5	7	4



- a. Find the theoretical and experimental probabilities that the pointer lands in a section with a number greater than or equal to 2.

Theoretical probability = %

Experimental probability = %

- b. **Reasoning** What might have caused the theoretical and experimental probabilities to be different? © MP.2



5. A city council wants to know if residents would like a dog park. They sent a survey to every household in the city. The results of those who responded are shown in the table at the right.

Dog Owners

Number of Dogs in Household	Number of Households
0	513
1	218
2 or more	129

- a. What is an appropriate first step in finding the experimental probability that a household has 2 or more dogs?
- Ⓐ Find the product of the number of households with one dog and the number with two or more dogs.
 - Ⓑ Find the difference of the number of households with two or more dogs and the number with no dogs.
 - Ⓒ Find the sum of the number of households for each category.
 - Ⓓ Find the difference of the number of households with no dogs and the number with one dog or more.
- b. What is the experimental probability that a household has 2 or more dogs?

6. **Higher Order Thinking** The manager of a restaurant wants to add two new side dishes to the menu. She surveys customers about side dish preferences and records the results in the table shown at the right.

Restaurant Menu

Preferred Side Dish	Number of Customers
Baked Potato	127
Steamed Broccoli	44
Asparagus	95
Sweet Potato	104

- a. Find the experimental probability that a customer prefers either baked potato or asparagus.
- b. Find the experimental probability that a customer prefers either steamed broccoli or sweet potato.

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7. Hakeem randomly draws equal-sized cards labeled with letters A, B, C, D, and F from a hat and records the results in the table. Compare the theoretical and experimental probabilities of randomly drawing a card that is labeled with the letter C.

Letter	Frequency
A	36
B	50
C	111
D	59
F	44
Total	300

