

# Finding Probabilities

NCTM Standards 5, 7, 8, 9

Mika is going to draw 1 card at random from the following deck.

1	4	9	16	25	36
49	64	81	100	121	144

- 1 For each event listed at the right, write a fraction to describe the probability of this event happening.

Event	Probability
a Number is less than 40	$\frac{6}{12}$ , or $\frac{1}{2}$
b Units digit is 1 or 9	
c Units digit is 2, 3, or 7	
d Number is greater than 50	
e Number is a multiple of 3	

- 2 Make a deck of cards to match those above and conduct the experiment. Draw a card and record your result in the table below. Return the card to the deck and shuffle well. Repeat for a total of 20 draws.

Draw	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Card Drawn																				

- 3 Assign a probability for each event based on your experiment in Problem 2.

Event	Experimental Probability
a Number is less than 40	$\frac{\square}{20}$
b Units digit is 1 or 9	
c Units digit is 2, 3, or 7	
d Number is greater than 50	
e Number is a multiple of 3	

**For another experiment, you will draw a card at random from a deck whose cards are numbered with the cubes of numbers from 1 to 10. Write the possible outcomes on these cards.**

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**4** Complete the following statements and give reasons that correspond to this experiment.

- a** I am CERTAIN to draw \_\_\_\_\_.  
Why? \_\_\_\_\_
- b** The probability is greater than  $\frac{1}{2}$  that I will draw \_\_\_\_\_.  
Why? \_\_\_\_\_
- c** The probability is less than  $\frac{1}{2}$  that I will draw \_\_\_\_\_.  
Why? \_\_\_\_\_
- d** It is IMPOSSIBLE that I will draw \_\_\_\_\_.  
Why? \_\_\_\_\_

**5** Imagine that you conduct this experiment. Write 2 questions about the probability of some event occurring. Then answer your question. (One example is given.)

Q: What is the probability that I will draw an even number?

A:  $\frac{5}{10}$ , or  $\frac{1}{2}$

Q: \_\_\_\_\_ A: \_\_\_\_\_

\_\_\_\_\_

Q: \_\_\_\_\_ A: \_\_\_\_\_

\_\_\_\_\_



**6 Challenge** Look at LAB p. 273. How well did the predicted probabilities (Problem 1) match the experimental probabilities (Problem 2)? Explain why you think they did or did not match.

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