

# Looking Ahead to Chapter 9

## Focus

In Chapter 9, you will learn how to identify prime and composite numbers, factor composite numbers by using prime factorizations, and write numbers in scientific notation. You will also work with powers and learn properties of powers, as well as different forms of  $n$ th roots of numbers.

## Chapter Warm-up

Answer these questions to help you review skills that you will need in Chapter 9.

Use mental math to find the value of  $x$ .

1.  $3x = 81$

2.  $5x = 105$

3.  $17x = 85$

Write each expression as a power.

4.  $(8)(8)(8)(8)$

5.  $11 \cdot 11 \cdot 11 \cdot 11 \cdot 11 \cdot 11$

6.  $(-13)(-13)(-13)$

## 9

Evaluate each power.

7.  $2^6$

8.  $5^2$

9.  $10^4$

Read the problem scenario below.

You work for a cooking supply manufacturer and you are in charge of making circular pizza pans. Your boss would like to know the area of each circular pan to get an idea of the amount of material that will be needed for each of the pizza pans. Note that the area of a circle is  $A = \pi r^2$ , where  $r$  is the radius of the circle. Use 3.14 for  $\pi$ .

10. What is the area of a pizza pan that has a radius of 3 inches?
11. What is the area of a pizza pan that has a radius of 6 inches?
12. One pizza pan has a radius of 7 inches. Another pizza pan has a radius of 5 inches. How much more area does the first pizza pan have than the second pizza pan?

## Key Terms

factors ■ p. 422

prime number ■ p. 423

composite number ■ p. 423

prime factorization ■ p. 423

power ■ p. 425

exponent ■ p. 425

product ■ p. 425

quotient ■ p. 425

positive exponent ■ p. 429

negative exponent ■ p. 430

zero exponent ■ p. 430

standard form ■ p. 433

scientific notation ■ p. 433

cube root ■ p. 444

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$n$ th root ■ p. 445

radicand ■ p. 445

rational exponent ■ p. 447

radical ■ p. 447