Exponents and Exponential Functions


### 8.1 Apply Exponent Properties Involving Products

8.2 Apply Exponent Properties Involving Quotients

### 8.3 Define and Use Zero and Negative Exponents

### 8.4 Use Scientific Notation

8.5 Write and Graph Exponentia Growth Functions
8.6 Write and Graph Exponential Decay Functions

## Before

In previous chapters and courses, you learned the following skills, which you'll use in Chapter 8: evaluating expressions involving exponents, ordering numbers, writing percents as decimals, and writing function rules.

## Prerequisite Skills

## VOCABULARY CHECK

1. Identify the exponent and the base in the expression $13^{8}$.
2. Copy and complete: An expression that represents repeated multiplication of the same factor is called $\mathrm{a}(\mathrm{n}) \stackrel{?}{\text { ? }}$

## SKILLS CHECK

Evaluate the expression. (Review p. 2 for 8.1-8.3.)
3. $x^{2}$ when $x=10$ 4. $a^{3}$ when $a=3$
5. $r^{2}$ when $r=\frac{5}{6}$
6. $z^{3}$ when $z=\frac{1}{2}$

Order the numbers from least to greatest. (Review p. 909 for 8.4.)
7. 6.12, 6.2, 6.01
8. $0.073,0.101,0.0098$

Write the percent as a decimal. (Review p. 916 for 8.5 and 8.6.)
9. $4 \%$
10. $0.5 \%$
11. $13.8 \%$
12. $145 \%$
13. Write a rule for the function. (Review p. 35 for 8.5 and 8.6.)

| Input | 0 | 1 | 4 | 6 | 10 |
| :--- | :--- | :--- | :--- | :--- | :--- |
| Output | 2 | 3 | 6 | 8 | 12 |



