

**STUDY LINK**  
**7·3**

# Interpreting Scientific Notation



**Scientific notation** is a short way to represent large and small numbers. In scientific notation, a number is written as the product of two factors. One factor is a whole number or a decimal. The other factor is a power of 10.

*Scientific notation:*  $4 * 10^4$

*Meaning:* Multiply  $10^4$  (10,000) by 4.

$$4 * 10^4 = 4 * 10,000 = 40,000$$

*Number-and-word notation:* 40 thousand

*Scientific notation:*  $6 * 10^6$

*Meaning:* Multiply  $10^6$  (1,000,000) by 6.

$$6 * 10^6 = 6 * 1,000,000 = 6,000,000$$

*Number-and-word notation:* 6 million

### Guides for Powers of 10

$10^3$	one thousand
$10^6$	one million
$10^9$	one billion
$10^{12}$	one trillion

Complete the following statements.

1. The area of Alaska is about  $6 * 10^5$ , or \_\_\_\_\_ thousand, square miles.

The area of the lower 48 states is about  $3 * 10^6$ , or \_\_\_\_\_ million, square miles.

2. There are about  $6 * 10^9$ , or \_\_\_\_\_ billion, people in the world.

3. It is estimated that about  $5 * 10^8$ , or \_\_\_\_\_, people speak English as their first or second language.

4. In Bengal, India, and Bangladesh there are about  $2.6 * 10^8$ , or \_\_\_\_\_, people who speak Bengali.

5. At least 1 person in each of  $1 * 10^7$  households, or \_\_\_\_\_, watches the most popular TV shows.

Source: *The World Almanac and Book of Facts, 2000*

### Practice

6.  $5 * (3^2 + 4^2) =$  \_\_\_\_\_

7.  $3 * (9 + 16) =$  \_\_\_\_\_

8.  $2 * (9 + h) = 20$  \_\_\_\_\_

9.  $g = (7^2 - 2^2)$  \_\_\_\_\_

