

Lesson 4.1 Study Guide and Intervention**Scientific Notation**

A number is in scientific notation when it is written as the product of a number and a power of ten. The number must be greater than or equal to 1 and less than 10.

- To write a number in standard notation, you apply the order of operations. First evaluate the power of ten and then multiply.
- To write a number in scientific notation, move the decimal point to the right of the first nonzero number. Then, find the power of ten by counting the number of places moved.

Example 1 Write 6.1×10^3 in standard notation.

$$\begin{aligned}6.1 \times 10^3 &= 6.1 \times 1,000 \\ &= 6.1 \underbrace{000}_3 \\ &= 6,100\end{aligned}$$

$$10^3 = 1,000$$

Move the decimal point 3 places to the right.

Example 2 Write 62,500 in scientific notation.

$$\begin{aligned}62,500 &= 6.250 \times 10,000 \\ &= 6.25 \times 10^4\end{aligned}$$

Move the decimal point 4 places to get a number between 1 and 10.

Exercises

Write each number in standard notation.

1. 7.25×10^2

2. 2.5×10^3

3. 9.95×10^5

4. 8.80×10^4

5. 3.18×10^6

6. 6.12×10^3

Write each number in scientific notation.

7. 325

8. 9,210

9. 200

10. 5,120

11. 561

12. 1,230

13. 6 million

14. 53 thousand

15. 8 hundred