Unit 1 Objective 6 Remediation

Scientific Notation

Writing numbers in scientific notation.

A number is in scientific notation if it is written as a product of two factors.

The first factor is a number from 1 to 10, including 1 but not including 10.

The second number is a power of 10.

Example 1

Write 2,300,000,000 in scientific notation.

First place the decimal between 2 and 3. The result is the decimal 2.3. Count the number of places that the decimal point was moved in order to form 2.3. Since the decimal point was moved 9 places to the **left**, the exponent of 10 is 9.

$2{,}300{,}000{,}000 = 2.3 \times 10^{9}$

Example 2

Write 0.0000052 in scientific notation.

First place the decimal between the 5 and the 2. The result is the decimal 5.2. Count the number of places that the decimal was moved in order to form 5.2. Since the decimal point was moved 6 places to the **right**, the exponent of 10 is -6.

$0.0000052 = 5.2 \times 10^{-6}$

Write each number in scientific notation.

1) 4,570,000,000_____ 2) .0000023 _____

3) .00458 _____ 4) 62,000,000 _____

5) 70,500,000,000_____ 6) .0000875 _____

7) 5800 _____ 8) .026 _____

9) 35,000,000 _____ 10) .000000072 _____

11) 2,070,000,000,000 _____ 12) .00305 _____

13) 5,677,000,000,000,000,000,000,000,000,000,000_____

14) 0.00000000000000000000007869_____