4.R.5 Exercises

Concept Check

True/False. Determine whether each statement is true or false. If a statement is false, explain how it can be changed so the statement will be true. (**Note:** There may be more than one acceptable change.)

1. The exponent in the number 1.4×10^4 indicates that the decimal point should be moved 4 places to the right.

2. The exponent in the number 2.5×10^{-3} indicates that the decimal point should be moved 3 places to the right.

3. The number 3.53×10^5 is less than 8.72×10^{-4}.

4. The number 4000 written in scientific notation is 0.4×10^4.

Practice

Write the following numbers in scientific notation.

5. 86,000

6. 0.0000000002368

Write the following numbers in decimal form.

7. 4.2×10^{-2}

8. 3.067×10^{10}

First write each of the numbers in scientific notation. Then perform the indicated operations and leave your answer in scientific notation.

9. $0.0003 \cdot 0.0000025$

10. $23{,}400{,}000{,}000 \cdot 5{,}500{,}000{,}000$

Applications

Solve.

11. One light-year is approximately 9.46×10^{15} meters. The distance to a certain star is 4.3 light-years. How many meters is this?

12. The mass of an atom of gold is approximately 3.25×10^{-22} grams. What would be the mass of 2000 atoms of gold? Express your answer in scientific notation.