



Chapter 1 Real Numbers

Lesson 1-7 Compute with Scientific Notation

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 Evaluate $\frac{1.14 \times 10^6}{4.8 \times 10^{-6}}$. Express the result in scientific notation.

$$\begin{aligned}\frac{1.14 \times 10^6}{4.8 \times 10^{-6}} &= \left(\frac{1.14}{4.8} \right) \left(\frac{10^6}{10^{-6}} \right) && \text{Associative Property} \\ &= (0.2375)(10^{6-(-6)}) && \text{Divide 1.14 by 4.8. Use the Quotient of Powers law.} \\ &= (0.2375)(10^{12}) && \text{Simplify.} \\ &= 2.375 \times 10^{11} && \text{Rewrite in scientific notation.}\end{aligned}$$

 Evaluate $(1.03 \times 10^9) - (4.7 \times 10^7)$. Express the result in scientific notation.

$$\begin{aligned}(1.03 \times 10^9) - (4.7 \times 10^7) &= (103.0 \times 10^7) - (4.7 \times 10^7) && \text{Write } 1.03 \times 10^9 \text{ as } 103.0 \times 10^7. \\ &= (103.0 - 4.7) \times 10^7 && \text{Distributive Property} \\ &= 98.3 \times 10^7 && \text{Subtract 4.7 from 103.0} \\ &= 9.83 \times 10^8 && \text{Rewrite in scientific notation.}\end{aligned}$$