

49.3: Procedures

Practicing with Scientific Notation

- Write the following numbers in scientific notation; keep only 3 significant figures.
 - 9,876,543
 - 1,000
 - 1,000,000,000
 - 0.000009876543
 - 0.000000001000
- Multiply and divide the following numbers. Write the answer in scientific notation, and then in standard notation.
 - 10^8 times 10^{-3}
 - 10^8 divided by 10^{-3}
 - 14×10^{15} times 2×10^{-12}
 - 14×10^{15} divided by 2×10^{-12}
 - $(9 \times 10^9)(1.6 \times 10^{-19})(1.6 \times 10^{-19})$ divided by (5×10^{-5})

Metric System

- Write the number of kilograms in a 1,000 grams, in scientific notation. How many places do you need to move the decimal? Explain why the decimal this moved this many places.
- Write the number of meters in 100 centimeters, in scientific notation. How many places do you need to move the decimal? Explain why the decimal this moved this many places.

Real Measurements

- A wavelength of blue light is 450 nanometers or 450×10^{-9} meters. What is this wavelength in standard notation?
- Our sister galaxy, the Andromeda galaxy is 250 Million light years, or 250×10^6 light years from us, and 1 light year is 9.46×10^{15} meters. Calculate the total distance in meters to the Andromeda Galaxy, in standard notation.

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