1. Indicate the number of significant digits in each of the following measurements.
   a. 23.500 g
   b. 100.35 mL
   c. $1.004 \times 10^{-7}$ m
   d. 0.00230 kg

2. Round off the following numbers to the indicated number of significant figures.
   a. 0.0089346 kg (3 sig figs)
   b. 96515 mL (3 sig figs)
   c. 3.50492 m (3 sig figs)

3. Determine the result to the correct number of significant figures.
   a. $\left( \frac{3.2 \text{ cm} \times 1.23 \text{ cm} \times 0.5 \text{ cm}}{8.32 \text{ cm} \times 1.00 \text{ cm} \times 0.500 \text{ cm}} \right)$
   b. $\left( \frac{2.420 \text{ g} + 15.6 \text{ g}}{5.31 \text{ g}} \right)$
   c. $\left( \frac{6.00 \text{ g}}{16.1 \text{ mL} - 8.440 \text{ mL}} \right)$
4. Perform the following conversions (1 lb = 453.59 g; 1 L = 1.0567 qt; 1 inch = 2.54 cm):
   a. 100 km to miles (use at least 3 conversion factors).
   b. A liquid has a critical temperature of 154.4 K; calculate the temperature in °F and °C.
   c. The thickness of a human hair is approximately 70,000 nm; calculate the thickness in millimeters.
   d. A typical soft drink container is 355 mL; determine the number of quarts of the soft drink container.

5. Perform the following conversion: The density of water is 1.00 g/cm³. Convert to pounds/foot³.