

Dimensional Analysis

Very Important!

General Formula:

$$\text{Number}_1 (\text{old unit}) * \frac{\text{Number}_3 (\text{new unit})}{\text{Number}_2 (\text{old unit})} = \left[\frac{\text{Number}_1 * \text{Number}_3}{\text{Number}_2} \right] (\text{new unit})$$

Example: Convert 125 mL to cm³

$$125 \text{ mL} * \frac{1 \text{ cm}^3}{1 \text{ mL}} = \left(\frac{125 * 1}{1} \right) \text{ cm}^3 = 125 \text{ cm}^3$$

Example: Find volume when mass = 3.0 g and density = 2.00 g/mL

$$3.0 \text{ g} * \frac{1 \text{ mL}}{2.00 \text{ g}} = \left(\frac{3.0 * 1}{2.00} \right) \text{ mL} = 1.5 \text{ mL}$$

See textbook for more examples.