

Key

$$\text{density} = \frac{\text{mass}}{\text{volume}}$$

$$\text{volume} = \frac{\text{mass}}{\text{density}}$$

$$\text{mass} = \text{density} \cdot \text{volume}$$

Density is the relationship of the mass of an object to its volume. Density is usually reported in grams per cubic centimeter (g/cm^3)

1. A man has a 50.0cm^3 bottle completely filled with 163 g of a slimy green liquid. What is the density of the slimy green liquid?

$$3.26\text{ g}/\text{cm}^3$$

2. The density of oak wood is generally $0.7\text{ g}/\text{cm}^3$. What is the mass of a 35cm^3 piece of oak?

$$24.5\text{ grams}$$

3. What is the volume of 325 g of metal with a density of $9.0\text{ g}/\text{cm}^3$?

$$36.11\text{ cm}^3$$

4. What mass of water in grams will fill a tank 100 cm long, 50 cm side, and 30 cm high? The density of H_2O is $1\text{ g}/\text{cm}^3$. (Hint: find the volume first!)

$$150,000\text{ grams}$$

5. A student has a rectangular block. It is 2 cm wide, 3 cm tall, and 25 cm long. It has a mass of 600 g. What is the density of the block? (Hint: find the volume first!)

$$4\text{ g}/\text{cm}^3$$