Name: Date: Period:

Density Math Practice

$$D = \frac{m}{V}$$

1. A rectangular block has a mass of 300 grams and a volume of 145 mL. Calculate the density of the block using the density formula.

Solution:

$$\text{Density} = \frac{\text{Mass}}{\text{Volume}} = \frac{300\,\text{g}}{145\,\text{mL}} \approx 2.07\,\text{g/mL}$$

2. A substance has a density of 0.6 g/mL and occupies a volume of 60 mL. Calculate the mass of this substance using the density formula.

Solution:

$$\text{Mass} = \text{Density} \times \text{Volume} = 0.6\,\text{g/mL} \times 60\,\text{mL} = 36\,\text{grams}$$

3. A gas has a density of 0.4 g/mL and a mass of 160 grams. Calculate the volume of the gas using the density formula.

Solution:

$$\text{Volume} = \frac{\text{Mass}}{\text{Density}} = \frac{160\,\text{g}}{0.4\,\text{g/mL}} = 400\,\text{mL}$$

$$D = \frac{m}{V}$$

4. An irregularly shaped object has a mass of 210 grams and a volume of 120 mL. Calculate the density of the object using the density formula.

Solution:

$$\text{Density} = \frac{\text{Mass}}{\text{Volume}} = \frac{210\,\text{g}}{120\,\text{mL}} \approx 1.75\,\text{g/mL}$$

5. Another substance, with a density of 1.2 g/mL, occupies a volume of 85 mL. Calculate the mass of this substance using the density formula.

Solution:

$$\text{Mass} = \text{Density} \times \text{Volume} = 1.2\,\text{g/mL} \times 85\,\text{mL} = 102\,\text{grams}$$

6. A metal sphere has a density of 4.3 g/mL and a mass of 200 grams. Calculate the volume of the metal sphere using the density formula.

Solution:

$$\text{Volume} = \frac{\text{Mass}}{\text{Density}} = \frac{200\,\text{g}}{4.3\,\text{g/mL}} \approx 46.51\,\text{mL}$$