

Solving Word Problems Notes

1. Read the problem. Identify what the problem is asking you to find.
2. Set up the formula for the variable you have to find
3. Plug in any known information into the formula
4. Solve

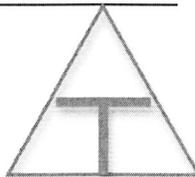
Example: The density of an object is 3 g/ml. If the mass of the object is 6 g, what is the volume of the object?

1. The problem is looking for volume: $V =$

2. The formula is $V = M/D$

3. Plug in known info: $V = 6g / 3g/ml$

4. Solve: $V = 2 \text{ ml}$.



Density Word Problem HW

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

UNITS OF DENSITY
solids (g/cm³) liquids (g/mL)

1. Find the unknown quantity: you may use a calculator, but set up the problem in each box first.

a) $d = 3 \text{ g/mL}$ $V = 100 \text{ mL}$ $M = ?$	b) $d = ?$ $V = 950 \text{ mL}$ $M = 95 \text{ g}$	c) $d = 0.5 \text{ g/cm}^3$ $V = ?$ $M = 20 \text{ g}$
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2. Find the unknown quantity (CONVERT FIRST to g or mL)

a) $d = 24 \text{ g/mL}$ $V = 1.2 \text{ L} = \text{_____ mL}$ $M = ?$	b) $d = ?$ $V = 100 \text{ mL}$ $M = 1.5 \text{ kg} = \text{_____ g}$	c) $d =$ $V = 0.52 \text{ L} = \text{_____ mL}$ $M = 500 \text{ mg} = \text{_____ g}$
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WORD PROBLEMS- you may use a calculator, but set up the problem in the space below first.

1. A block of aluminum occupies a volume of 15.0 mL. A beaker with the aluminum has a mass of 55.5 g. The empty beaker has a mass of 15 g. What is the density of the aluminum?

2. Mercury metal is poured into a graduated cylinder that holds exactly 22.5 mL. The mercury used to fill the cylinder has a mass of 306.0 g. From this information, calculate the density of mercury.

3. What is the mass of the ethanol that exactly fills a 200.0 mL container?

The density of ethanol is 0.789 g/mL.

4. A rectangular block of copper metal has a mass of 1896 g. The dimensions of the block are 8.4 cm by 5.5 cm by 4.6 cm. From this data, what is the density of copper? (hint: find the volume of a block first)

5. What volume of silver metal will weigh exactly 2500.0 g. The density of silver is 10.5 g/cm^3 .

6. Find the mass of 250.0 mL of benzene. The density of benzene is 0.8765 g/mL.

7. A block of lead has dimensions of 4.50 cm by 5.20 cm by 6.00 cm. The block weighs 1587 g. From this information, calculate the density of lead.

8. 40 g of iron are added to a graduated cylinder with 35 ml of water. The water level rises to 48 ml. From this information, calculate the density of iron.