

Density

ANSWERS 

1

A metal block has a mass of 240 g and a volume of 30 cm³. Find its density.



$$\text{density} = \frac{\text{mass}}{\text{volume}} = \frac{240}{30}$$

Answer 8 g/cm³

2

A stone has a mass of 450 g and a volume of 50 cm³. Find its density.

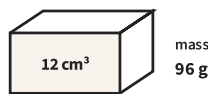


$$\text{density} = \frac{\text{mass}}{\text{volume}} = \frac{450}{50}$$

Answer 9 g/cm³

3

A glass marble has a mass of 96 g and a volume of 12 cm³. Find its density.

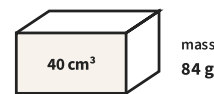


$$\text{density} = \frac{\text{mass}}{\text{volume}} = \frac{96}{12}$$

Answer 8 g/cm³

4

A wooden cube has a mass of 84 g and a volume of 40 cm³. Find its density.

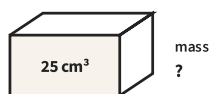


$$\text{density} = \frac{\text{mass}}{\text{volume}} = \frac{84}{40}$$

Answer 2.1 g/cm³

5

A brick has a density of 3 g/cm³ and a volume of 25 cm³. Find its mass.



$$3 = \frac{\text{mass}}{25}$$

multiply both sides by the volume

$$\text{mass} = 3 \times 25$$

Answer 75 g

6

A steel bolt has a density of 7.8 g/cm³ and a volume of 20 cm³. Find its mass.



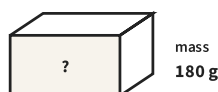
$$7.8 = \frac{\text{mass}}{20}$$

$$\text{mass} = 7.8 \times 20$$

Answer 156 g

7

A plastic toy has a mass of 180 g and a density of 4 g/cm³. Find its volume.



$$4 = \frac{180}{\text{volume}}$$

volume × density = mass, so divide

$$\text{volume} = \frac{180}{4}$$

Answer 45 cm³

8

An aluminium bar has a mass of 270 g and a density of 2.7 g/cm³. Find its volume.



$$270 \div 2.7$$

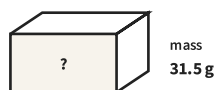
Answer 100 cm³

Density further practice

ANSWERS 

9

A small silver bar has a mass of 31.5 g and a density of 10.5 g/cm³. Find its volume.

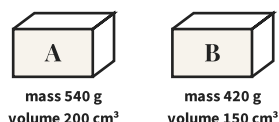


$$31.5 \div 10.5$$

Answer 3 cm³

10

Which block is denser? Show your working.



$$A: 2.7 \text{ g/cm}^3, B: 2.8 \text{ g/cm}^3$$

Answer Block B

11

Complete the table.

	Mass (g)	Volume (cm ³)	Density (g/cm ³)
Rubber	60	50	1.2
Oak	36	45	0.8
Copper	44.5	5	8.9

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

12

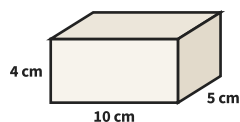
A stone has a mass of 1.2 kg and a volume of 480 cm³. Find its density in g/cm³.

$$1.2 \text{ kg} = 1200 \text{ g}, 1200 \div 480$$

Answer 2.5 g/cm³

13

This block of wood has a mass of 140 g. Find its density.



$$10 \times 5 \times 4 = 200 \text{ cm}^3, 140 \div 200$$

Answer 0.7 g/cm³

14

An object floats in water if its density is less than 1 g/cm³. A bath toy has a mass of 45 g and a volume of 60 cm³. Will it float? Show how you know.

$$45 \div 60 = 0.75 \text{ g/cm}^3, \text{ less than } 1$$

Answer Yes, it floats

15

An aluminium block and a steel block each have a volume of 40 cm³. Aluminium has a density of 2.7 g/cm³ and steel 7.8 g/cm³. How much heavier is the steel block?

$$\text{steel } 7.8 \times 40 = 312 \text{ g}, \text{ aluminium } 2.7 \times 40 = 108 \text{ g}$$

Answer 204 g

16

A 20 cm³ block of copper has a mass of 178 g. Sam says a 40 cm³ block of copper has double the density. Is Sam right? Explain.

$$\text{the mass doubles too, } 356 \div 40 = 8.9$$

Answer No, still 8.9 g/cm³