

**DENSITY, MASS AND VOLUME – PRACTICE QUESTIONS**  
**CALCULATOR ALLOWED**



1.

A marble has a mass of 5 grams and a volume of  $2 \text{ cm}^3$ .

Work out the density of the marble, in  $\text{g/cm}^3$ .

2.

A block of wood has a density of  $0.75 \text{ g/cm}^3$  and a volume of  $120 \text{ cm}^3$ .

Work out the mass of the block of wood, in grams.

3.

A brick has a density of  $500 \text{ kg/m}^3$  and a mass of 10.5 kilograms.

Work out the volume of the brick, in  $\text{m}^3$ .

4.

A metal rod has a mass of 150 grams and a volume of  $25 \text{ cm}^3$ .

Work out the density of the rod, in  $\text{g/m}^3$ .

5.

A gold bar has a density of  $19 \text{ g/cm}^3$  and a mass of 9,500 grams.

Work out the volume of the gold bar, in  $\text{cm}^3$ .

6.

A piece of aluminium has a density of  $2.6 \text{ g/cm}^3$  and a volume of  $15 \text{ cm}^3$ .

Work out the mass of the aluminium, in grams.

7.

A cricket ball has a density of  $0.8 \text{ g/cm}^3$  and a mass of 165 grams.

Work out the volume of the cricket ball, in  $\text{cm}^3$ .

8.

A piece of carbon has a density of  $2.2 \text{ g/cm}^3$  and a volume of  $70 \text{ cm}^3$ .

Work out the mass of the piece of carbon, in grams.

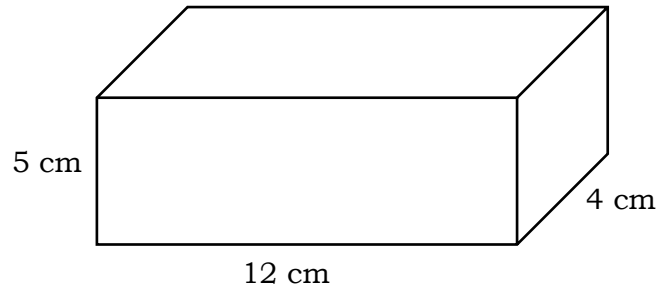
9.

A cube has side length 8 cm and has a mass of 960 grams.

Work out the density of the cube, in  $\text{g/cm}^3$ .

10.

Pictured below is a block of wood.

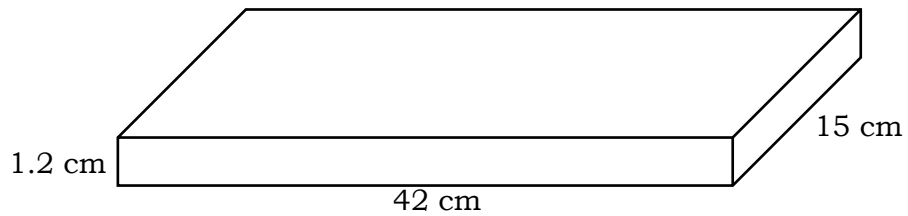


The block has a mass of 288 grams.

Work out the density of the block of wood, in  $\text{g}/\text{cm}^3$ .

11.

Pictured below is a metal sheet.

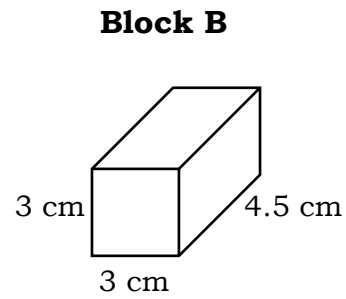
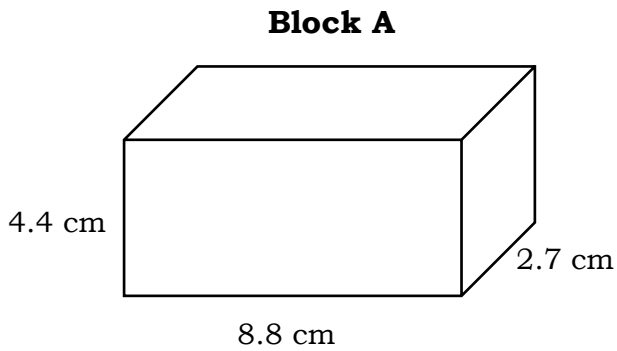


The density of the metal sheet is  $5.5 \text{ g}/\text{cm}^3$ .

Work out the mass of the metal sheet, in grams.

12.

Pictured below are two blocks – Block A and Block B.



Block A is made from tin and Block B is made from tungsten.

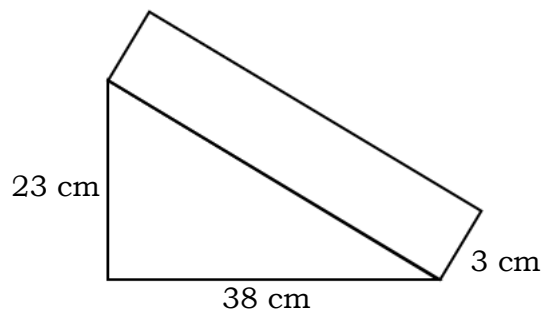
Tin has a density of  $7.3 \text{ g/cm}^3$ .

Tungsten has a density of  $19.3 \text{ g/cm}^3$ .

Which block has the largest mass – Block A or Block B?

13.

Pictured below is a block of wood.

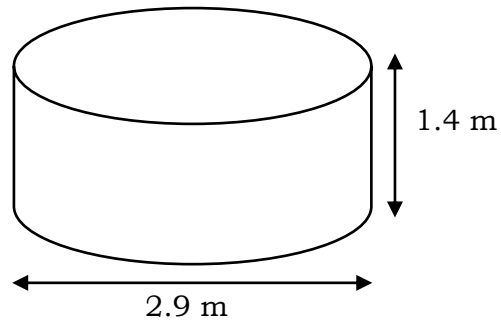


The block of wood has a mass of 980 grams.

Work out the density of the block of wood, to 2 decimal places.

14.

Pictured below is a metal cylinder.



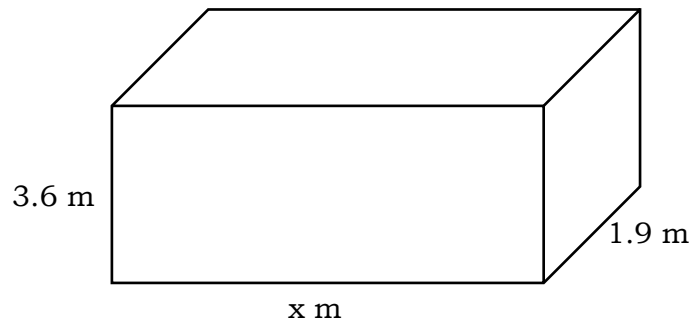
The cylinder has a mass of 21,000 kilograms.

Work out the density of the cylinder, in  $\text{kg}/\text{m}^3$ .

Give your answer to 4 significant figures.

15.

Pictured below is a block of wood.



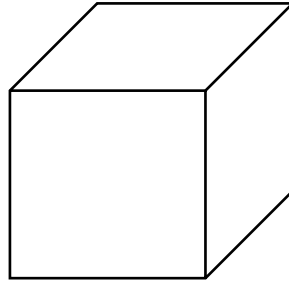
The density of the wood is  $540 \text{ kg}/\text{m}^3$ .

The block has a mass of 28,000 kg.

Find  $x$ , to 2 significant figures.

16.

Pictured below is a cube.

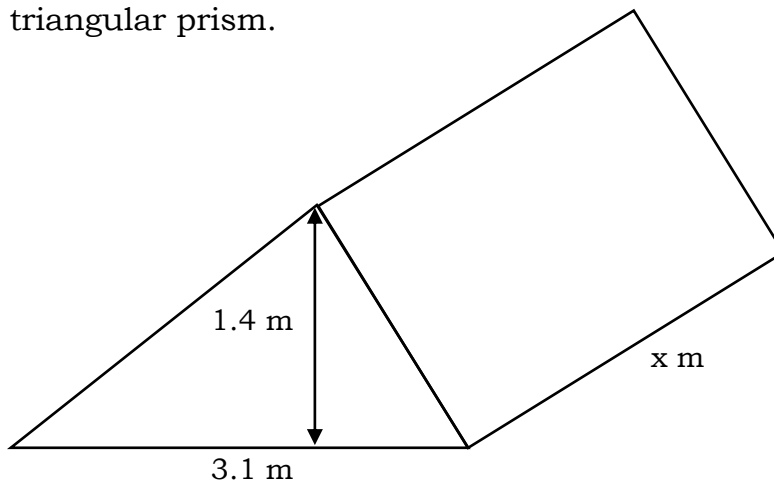


The cube has a mass of 6.5 kilograms and a density of  $15.4 \text{ g/cm}^3$ .

Find the side length of the cube, to 2 significant figures.

17.

Pictured below is a triangular prism.

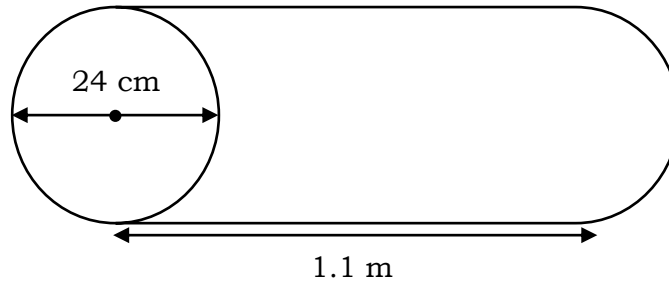


The triangular prism has a mass of 320 kilograms and a density of  $4 \text{ g/cm}^3$ .

Find x, to 2 significant figures.

18.

Pictured below is a cylinder.

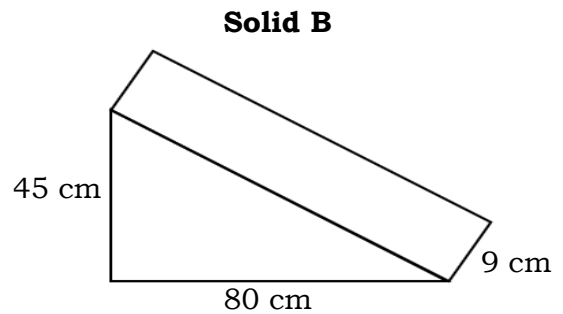
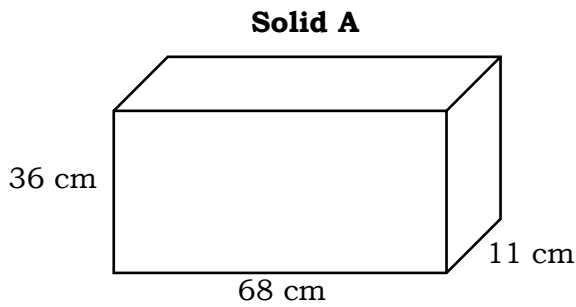


Nicola is trying to work out whether the cylinder is made of silicon or carbon. The density of silicon is  $2.33 \text{ g/cm}^3$  and the density of carbon is  $2.26 \text{ g/cm}^3$ . The cylinder has a mass of 112 kilograms.

Which material do you think the cylinder is made of?

19.

Pictured below are two solids – Solid A and Solid B.



Solid A has a density of  $1.7 \text{ g/cm}^3$ .

Solid B has a density of  $2,750 \text{ kg/m}^3$ .

Which solid has the largest mass – Solid A or Solid B?

20.

Material A has a density of  $2.64 \text{ g/cm}^3$ .

Material B has a density of  $1.91 \text{ g/cm}^3$ .

2 kilograms of Material A and 950 grams of Material B form Material C.

Work out the density of Material C, to 2 decimal places.

21.

Liquid A has a density of  $1.08 \text{ g/cm}^3$ .

Liquid B has a density of  $x \text{ g/cm}^3$ .

$750 \text{ cm}^3$  of Liquid A is mixed with  $990 \text{ cm}^3$  of Liquid B to form Liquid C.

The mass of Liquid C is 1.7 kilograms.

Find the density of Liquid B, to 2 decimal places.