

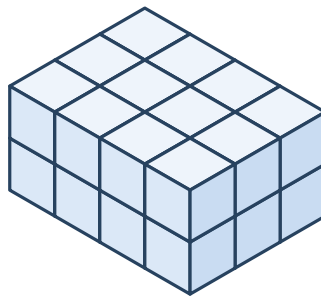
GCSE Maths: Volume of cuboids, and units of volume and capacity (Foundation): answers

GCSE Maths - Volume, Surface Area and 3D Shapes - Foundation - Lesson 19.4

Answers. Final answers to the worksheet questions. Full step-by-step solutions for every question are free at websink.site/gcse/maths/ch19-volume-surface-area-3d/foundation/volume-of-cuboids-and-units-of-volume-and-capacity/

Exercise 19D Volume of cuboids and units of volume Non-calculator

- 1 The cuboid is built from 1 cm cubes.



- (a) How many cubes are in the bottom layer?

Answer: 12

- (b) Work out the volume of the cuboid.

Answer: 24 cm^3

- 2 Work out the volume of each cuboid.

- (a) length 5 cm, width 4 cm, height 3 cm

Answer: 60 cm^3

- (b) length 10 cm, width 6 cm, height 2 cm

Answer: 120 cm^3

- (c) length 2.5 cm, width 4 cm, height 6 cm

Answer: 60 cm^3

- (d) length 3 m, width 2 m, height 1.5 m

Answer: 9 m^3

- 3 Work out the volume of each cube.

- (a) side 6 cm

Answer: 216 cm^3

- (b) side 9 cm

Answer: 729 cm^3

- (c) side 20 mm

Answer: 8000 mm³

4 Work out the missing length of each cuboid.

- (a) Volume 240 cm³, length 8 cm, width 5 cm. Find the height.

Answer: 6 cm

- (b) Volume 180 cm³, length 6 cm, height 5 cm. Find the width.

Answer: 6 cm

- (c) Volume 96 cm³, width 4 cm, height 3 cm. Find the length.

Answer: 8 cm

5 Change each volume or capacity to the unit shown.

- (a) 3 litres to ml

Answer: 3000 ml

- (b) 4500 ml to litres

Answer: 4.5 litres

- (c) 2000 cm³ to litres

Answer: 2 litres

- (d) 0.5 m³ to litres

Answer: 500 litres

- (e) 5 m³ to cm³

Answer: 5,000,000 cm³

- (f) 7000 mm³ to cm³

Answer: 7 cm³

6 A fish tank is a cuboid 60 cm long, 30 cm wide and 40 cm high. Work out the capacity of the tank in litres.

Answer: 72 litres

7 A tank is a cuboid 80 cm long, 50 cm wide and 40 cm high. Water flows into the empty tank at 8 litres every minute. How long does it take to fill the tank?

Answer: 20 minutes

8 A box is a cuboid 20 cm long, 15 cm wide and 10 cm high. How many cubes of side 5 cm fit exactly inside?

Answer: 24

9 A swimming pool is a cuboid 10 m long, 4 m wide and 1.5 m deep.

- (a) Work out the volume of the pool in m³.

Answer: 60 m³

(b) How many litres of water does the pool hold when it is full?

Answer: 60,000 litres

10 Box A is a cuboid 30 cm by 20 cm by 10 cm. Box B is a cuboid 25 cm by 25 cm by 10 cm. Which box has the larger volume, and by how much?

Answer: Box B, by 250 cm^3

11 Tom works out the volume of a cuboid that is 6 cm by 4 cm by 3 cm. He writes $6 + 4 + 3 = 13 \text{ cm}^3$. Explain Tom's mistake and work out the correct volume.

Answer: He added instead of multiplying. Volume = 72 cm^3

12 A cuboid has volume 36 cm^3 . All its edges are whole numbers of centimetres. Write down three different sets of length, width and height that are possible.

Answer: For example $36 \times 1 \times 1$; $18 \times 2 \times 1$; $12 \times 3 \times 1$ (there are 8 possibilities)

13 Jo says, "1 m³ is 100 cm³ because 1 m is 100 cm." Explain why she is wrong.

Answer: $1 \text{ m}^3 = 100 \times 100 \times 100 = 1,000,000 \text{ cm}^3$

14 A sugar cube has edges 2 cm long. Work out its volume.

Answer: 8 cm^3

15 Write cm, cm² or cm³ to complete each sentence: a length is measured in __, an area in __, and a volume in __.

Answer: cm; cm²; cm³

16 Fill in the gaps: 1 litre = __ ml = __ cm³.

Answer: 1000 ml = 1000 cm³