



THIRD SPACE
LEARNING

GCSE Exam Questions

3D Shapes | Geometry &
Measure

GCSE Exam Questions: 3D Shapes

- 1) (a) Cube A has a cross sectional area of 64cm^2 .

Calculate the volume of Cube A.

(2)

- (b) Cube B has a volume of 216cm^3 .

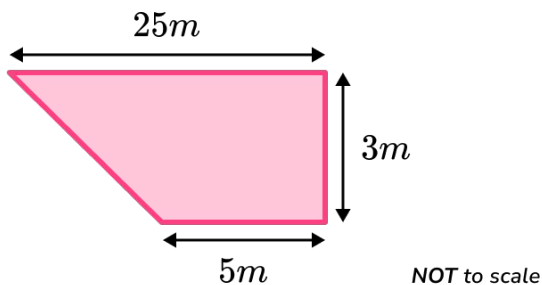
Calculate the surface area of Cube B.

State the units in your answer.

(3)

(5 marks)

- 2) (a) Below is a sketch of the cross section of a swimming pool.



If the pool is 10m wide, what volume of water will fill the swimming pool?

Write your answer in cubic metres.

(3)

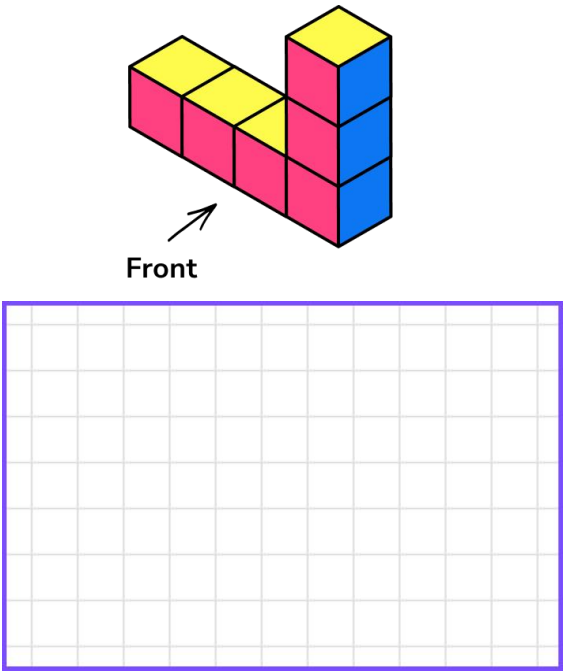
- (b) If 1 Litre = 0.001m^3 , how many litres of water are in the swimming pool?

(2)

(5 marks)

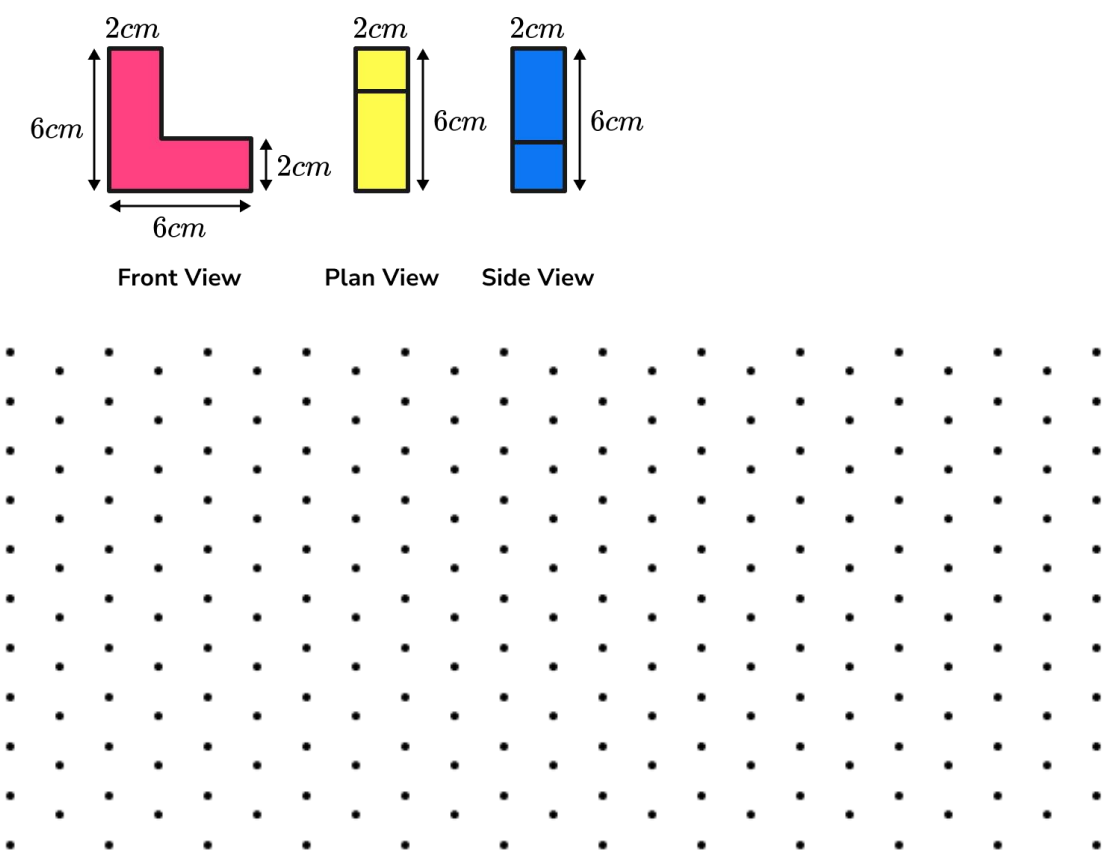
GCSE Exam Questions: 3D Shapes

3) (a) Draw the front view of the following 3D shape:



(2)

(b) Draw this 3D shape from the front, side and plan view:



(3)

(5 marks)

GCSE Exam Questions: 3D Shapes

- 4) (a) A cylinder has a volume of $V = \pi r^2 h$.

Calculate the radius of a cylinder with a volume of $360\pi\text{cm}^3$ and a height of 10cm .

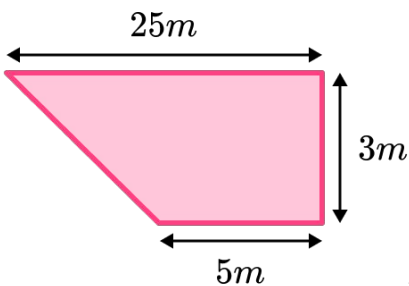
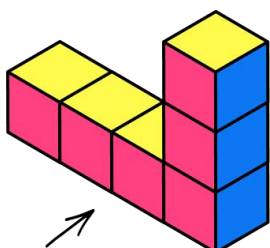
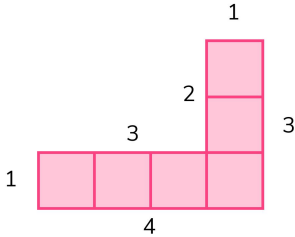
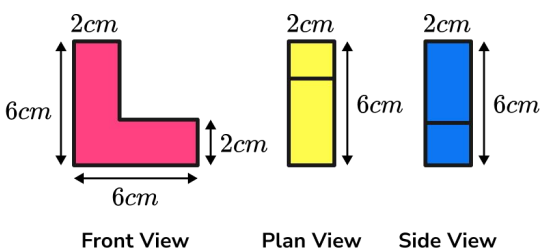
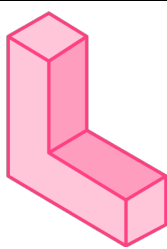
(3)

- (b) Calculate the volume to surface area ratio for the cylinder.

Write the ratio in its simplest form.

(5)
(8 marks)

GCSE Exam Questions: 3D Shapes Answers

	Question	Answer	Marks
1) (a)	Cube A has a cross sectional area of 64cm^2 . Calculate the volume of Cube A.	(a) $\sqrt{64} = 8\text{cm}$ $8^3 = 512\text{cm}^3$	(1) (1)
(b)	Cube B has a volume of 216cm^3 . Calculate the surface area of Cube B. State the units in your answer.	(b) $\sqrt[3]{216} = 6\text{cm}$ $6^2 \times 6 = 216$ cm^2	(1) (1) (1)
2) (a)	Below is a sketch of the cross section of a swimming pool.  If the pool is 10m wide, what volume of water will fill the swimming pool? Write your answer in cubic metres.	(a) $V = \left(\frac{25 + 5}{2} \times 3 \right) \times 10$ $= 15 \times 3 \times 10$ $= 450\text{m}^3$	(1) (1) (1)
(b)	If 1 Litre = 0.001m^3 , how many litres of water are in the swimming pool?	(b) $1000\text{L} = 1\text{m}^3$ $450\text{m}^3 = 450,000\text{L}$	(1) (1)
3) (a)	Draw the front view of the following 3D shape:  Front	(a)  For 'L-shape' For correct dimensions	(1) (1)
(b)	Draw the 3D shape from the following front, side and plan view:  Front View Plan View Side View	(b)  For height and base of 6cm For constant depth of 2cm For fully correct diagram	(1) (1) (1)

GCSE Exam Questions: 3D Shapes Answers

	Question	Answer	Marks
4) (a)	A cylinder has a volume of $V = \pi r^2 h$. Calculate the radius of a cylinder with a volume of $360\pi \text{ cm}^3$ and a height of 10cm.	(a) $\pi r^2 \times 10 = 360\pi$ $r^2 = 36$ $r = 6\text{cm}$	(1) (1) (1)
(b)	Calculate the volume to surface area ratio for the cylinder. Write the ratio in its simplest form.	(b) $SA = 2\pi r^2 + 2\pi r h$ $= 72\pi + 120\pi$ $= 192\pi$ $360\pi : 192\pi$ $15:8$	(1) (1) (1) (1) (1)

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