Exam Style Questions

Volume of a Prism

Ensure you have: Pencil, pen, ruler, protractor, pair of compasses and eraser
You may use tracing paper if needed

Guidance

1. Read each question carefully before you begin answering it.
2. Don’t spend too long on one question.
3. Attempt every question.
4. Check your answers seem right.
5. Always show your workings

Revision for this topic
Secondary
Video 356
1. Shown below is a cuboid.

![Cuboid Diagram]

Find the volume of the cuboid.
Include units.

\[ \text{Volume} = \text{length} \times \text{width} \times \text{height} \]

\[ = 9 \text{cm} \times 3 \text{cm} \times 2 \text{cm} \]

\[ = 54 \text{ cm}^3 \]

2. Shown below is a cube.

![Cube Diagram]

Find the volume of the cube.
Include units.

\[ \text{Volume} = \text{side}^3 \]

\[ = 5 \text{ cm} \times 5 \text{ cm} \times 5 \text{ cm} \]

\[ = 125 \text{ cm}^3 \]
3. Shown below is a triangular prism.

![Triangular Prism Diagram]

Find the volume of the prism.

\[ \text{Volume} = \frac{1}{2} \times \text{base} \times \text{height} \times \text{length} \]

\[ \frac{1}{2} \times 5 \times 4 \times 12 = 120 \text{ cm}^3 \]

4. Shown below is a prism.

![Prism Diagram]

The cross-sectional area is 21 cm².
The prism has a length of 6 cm.

Find the volume of the prism.

\[ \text{Volume} = \text{cross-sectional area} \times \text{length} \]

\[ 21 \times 6 = 126 \text{ cm}^3 \]

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5. The diagram shows a prism.

Work out the volume of the prism.

\[ \text{Volume} = \text{Base Area} \times \text{Height} \]

\[ \text{Volume} = (8 \times 5) \times 9 \]

\[ \text{Volume} = 40 \times 9 \]

\[ \text{Volume} = 360 \text{ cm}^3 \]

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\[ \text{Volume} = 360 \text{ cm}^3 \]
6. Shown below is a triangular prism.

Find the volume of the triangular prism.

\[ \text{Volume} = \frac{1}{2} \times \text{base} \times \text{height} \times \text{length} \]

\[ \text{Volume} = \frac{1}{2} \times 7 \times 3 \times 10 \]

\[ \text{Volume} = 105 \text{ cm}^3 \]

\[ \text{cm}^3 \]

(3)
7. A can of baked beans is shown below.

Calculate the volume of the can.

\[ \text{Volume} = \pi r^2 h \]

\[ \text{Volume} = \pi (3.5)^2 (11) \]

\[ \text{Volume} = \pi \times 12.25 \times 11 \]

\[ \text{Volume} = 138.55 \text{ cm}^3 \]

\[ \text{Volume} \approx 138.55 \text{ cm}^3 \]

(3 marks)
8. Shown below is a triangular prism.

Find the volume of the triangular prism.

\[ \text{Volume} = \frac{1}{2} \times \text{base} \times \text{height} \times \text{length} \]

\[ \text{Volume} = \frac{1}{2} \times 8.5 \times 6.8 \times 21.5 \]

\[ \text{Volume} = 596.525 \text{ cm}^3 \]

\[ \text{Volume} \approx 596.5 \text{ cm}^3 \]

(3)
9. Shown below is a trapezoid prism.

Find the volume of the prism.

\[ \text{Volume} = \frac{1}{2} \times (6 + 12) \times 5 \times 8 \]

\[ \text{Volume} = 360 \text{ cm}^3 \]

(4)
10. Shown below is a prism. The cross-section is a parallelogram.

Find the volume of the prism.

\[ \text{Volume} = \text{Base Area} \times \text{Height} \]

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\[ \text{Volume} = \text{Base Area} \times \text{Height} \]

\[ \text{Volume} = 5 \text{cm} \times 4 \text{cm} \times 9 \text{cm} \]

\[ \text{Volume} = 180 \text{cm}^3 \]

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\[ \text{Volume} = 180 \text{cm}^3 \]
11. The diagram shows a trapezoid prism. The area of the cross-section is 55cm$^2$. The volume of the prism is 330cm$^3$.

Find the length of the prism.

.........................cm
(2)
A cylinder has radius 2cm and height 9cm.

Calculate the volume of the cylinder.
Give your answer in terms of \( \pi \).

\[ \text{\[cm}^3 \]

(3)