Rectangular/triangular prism volume

6 questions | 14 marks

Equivalent correct methods earn the corresponding marks.

1. Find the volume of a cuboid 5 cm by 4 cm by 3 cm. [2 marks]

$5 \times 4 \times 3 = 60$ cm³.

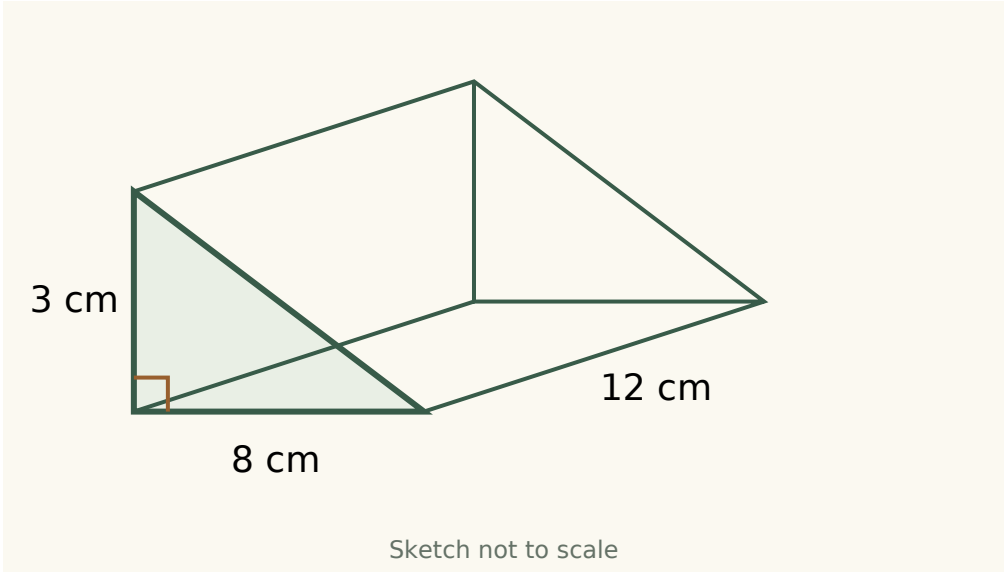
Answer: 60 cm³

2. A prism has cross-section area 18 m² and length 7 m. Find its volume. [1 mark]

$18 \times 7 = 126$ m³.

Answer: 126 m³

3. Find the volume of a triangular prism with end base 8 cm, perpendicular end height 3 cm and prism length 12 cm. [3 marks]



Sketch not to scale

$\text{End area} = \frac{1}{2} \times 8 \times 3 = 12$ cm².

$\text{Volume} = 12 \times 12 = 144$ cm³.

Answer: 144 cm³

4. A cuboid has volume 240 cm³. Its base is 8 cm by 5 cm. Find its height. [3 marks]

$\text{Base area} = 8 \times 5 = 40$ cm².

$\text{Height} = \text{volume} \div \text{base area}$.

$240 \div 40 = 6$ cm.

Answer: 6 cm

5. The inside of a rectangular container is 10 cm by 8 cm by 5 cm. How many mL can it hold? [2 marks]

$\text{Volume} = 10 \times 8 \times 5 = 400$ cm³.

$1\ \text{cm}^3 = 1\ \text{mL}$.

Answer: 400 mL

6. Two prisms have the same cross-section area. One is 6 cm long and the other is 15 cm long. The shorter has volume 48 cm³. Find the longer volume. [3 marks]

$\text{Cross} - \text{section area} = 48 \div 6 = 8$ cm².

$\text{Longer volume} = 8 \times 15 = 120$ cm³.

Answer: 120 cm³