Prism volume and capacity

6 questions | 15 marks

Equivalent correct methods earn the corresponding marks.

1. Find the volume of a rectangular prism 8 cm by 3 cm by 2 cm. [2 marks]

$V = 8(3)(2) = 48$ cm³.

Answer: 48 cm³.

2. A prism has cross-sectional area 15 m² and length 4 m. Find its volume. [2 marks]

$V = 15(4) = 60$ m³.

Answer: 60 m³.

3. A triangular prism has cross-section base 10 cm, perpendicular height 6 cm and length 8 cm. Find its volume. [3 marks]

Cross-sectional area is $\frac{1}{2}(10)(6) = 30$ cm².

Volume is $30(8) = 240$ cm³.

Answer: 240 cm³.

4. Find the volume of a cylinder with radius 2 m and height 5 m. [2 marks]

$V = \pi(2)^2(5) = 20\pi$ m³.

Answer: 20π m³.

5. A container holds 3500 cm³. Express its capacity in litres. [2 marks]

$3500 \div 1000 = 3.5$ L.

Answer: 3.5 L.

6. A rectangular tank holds 240 L. Its internal base is 0.8 m by 0.5 m. Find its internal height. [4 marks]

240 L is 0.24 m³.

Base area is $0.8(0.5) = 0.4$ m².

Height is $\frac{0.24}{0.4} = 0.6$ m.

Answer: 0.6 m.