Volume: 10 practice questions

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Name: _____ Date: _____

Attempt all questions and show your working. Suggested time: 15 to 20 minutes.

Section A: Consolidating (Questions 1-4)

Question 1

Find the volume of a rectangular prism that is 5 cm long, 4 cm wide and 3 cm high.

Question 2

Find the volume of a cube with edges of 6 cm.

Question 3

A prism has a cross-section with an area of 25 cm^2 and a length of 8 cm. Find its volume.

Question 4

A container holds 2500 cm^3 of water. How many litres is this? (Remember 1 L = 1000 cm^3.)

Section B: Standard (Questions 5-10)

Question 5

A triangular prism has a triangular cross-section with a base of 6 cm and a perpendicular height of 4 cm. The prism is 10 cm long.

(a) Find the area of the triangular cross-section.

(b) Find the volume of the prism.

Question 6

A rectangular prism has a volume of 360 cm^3. It is 12 cm long and 6 cm wide. Find its height.

Question 7

Explain, by thinking about layers of 1 cm cubes, why the volume of a rectangular prism can be found using

V = area of base × height

Question 8

A fish tank is a rectangular prism 60 cm long, 30 cm wide and 40 cm high.

(a) Find its volume in cubic centimetres.

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

Question 9

Copy and complete the table for these right prisms.

Prism	Area of cross-section	Length	Volume
Rectangular prism	18 cm²	7 cm	?
Triangular prism	?	9 m	108 m³
Hexagonal prism	40 mm²	?	600 mm³

Question 10

Which of these solids are prisms? Explain how you decided.

cube, square-based pyramid, triangular prism, cone, hexagonal prism, sphere

Volume: answers

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Question 1

Answer: 60 cm³ (5 × 4 × 3)

Question 2

Answer: 216 cm³ (6 × 6 × 6)

Question 3

Answer: 200 cm³ (25 × 8)

Question 4

Answer: 2.5 L

Question 5

Answer: (a) 12 cm² (b) 120 cm³

Question 6

Answer: 5 cm (360 ÷ 72)

Question 7

Answer: The base layer holds (length × width) cubes, which equals the area of the base. There are as many layers as the height, so the total number of cubes is area of base × height.

Question 8

Answer: (a) 72,000 cm³ (b) 72 L

Question 9

Answer: Rectangular prism 126 cm³; triangular prism cross-section 12 m²; hexagonal prism length 15 mm

Question 10

Answer: Cube, triangular prism and hexagonal prism. A prism has two identical, parallel polygon ends and the same cross-section all along its length (the pyramid comes to a point, and the cone and sphere have curved surfaces).