Volume of right prisms

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A sample from this topic. The complete topic collection contains three different resources and worked solutions.

Read the explanation and worked example. Show your working; use a calculator only where asked.

What you will practise

• Find prism volume from a repeated cross-section.

• Explain a method and check the reasonableness of a result.

Useful starting skills: Use the prerequisite operations and representations shown in the worked example.

A right prism has a constant cross-section along its length. Volume = cross-sectional area × perpendicular length.

For rectangular prisms use lwh. For a triangular prism, first find the triangle area, then multiply by prism length. Use cubic units.

Worked example

A triangular prism has triangle base 6 cm, triangle height 4 cm and prism length 10 cm.

Cross-section = $6 \times 4 / 2 = 12$ cm².

Volume $= 12 \times 10$.

Answer: 120 cm³

Try it yourself

Name: _____ Date: _____

1. Find volume of a 5 cm by 4 cm by 9 cm box.

2. A prism has cross-section 18 m^2 and length 7 m. Find volume.

Answers and explanations

Check the method as well as the final answer. An alternative correct method is also valid.

1. 180 cm³

Multiply all three dimensions.

2. 126 m³

18 × 7.

Curriculum reference: VC2M7M02

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