Measurement, similarity and trigonometry

Learn and practise | Free preview

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

Read the worked example, then show each step in the practice questions. Show the mathematical steps. A calculator, graphing tool or CAS may be used to check results where useful.

What you will practise

• Space, measurement and applications of trigonometry

Useful starting skills: Year 10 algebra, percentages, statistical displays, geometry and trigonometry.

Match each formula to the correct length, angle or shape. Keep exact expressions until the final requested rounding.

Similar shapes with length factor k have area factor k^2 and volume factor k^3. Right triangles use Pythagoras or right-triangle ratios; general triangles may require sine/cosine rules.

Worked example

A right triangle has legs 5 cm and 12 cm. Find hypotenuse.

$c^2=5^2+12^2=169$

positive root 13.

Answer: 13 cm.

Try it yourself

Name: _____ Date: _____

1. Convert 2.5 m^2 to cm^2 and 3500 cm^3 to litres.

2. A circle has radius 6 cm and sector angle 60°. Find arc length and sector area.

Answers and explanations

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

1. 25000 cm^2; 3.5 L.

Area conversion squares 100; 1 L=1000 cm^3.

2. 2πcm; 6πcm^2.

Take 60/360 of circumference 12π and area 36π.

Curriculum reference: General Mathematics Units 1–2 — Space, measurement and applications of trigonometry

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