Learning Objectives

C: Use Pythagoras' theorem to find hypotenuse of a right-angled triangle

C: Use Pythagoras' theorem to find a shorter side of a right-angled triangle

C: Use Pythagoras' theorem to find any side of a right-angled triangle

B: Remember the trigonometric ratios for sin, cos and tan B

B: Use the appropriate ratio to find a missing side B

B: Use the appropriate ratio to find a missing angle

C/B: Solve real-life problems using Pythagoras and/or trigonometry

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What if you get stuck?

◊   Ask a friend

◊   Ask your teacher

◊   Use the library

Websites

GCSE Bitesize

HegartyMaths:

Resources

Textbooks

Mathematical dictionary

Exercise book
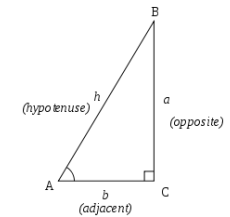
Planner

Equipment

Protractor

Pencil

Ruler

Compasses

Takeaway Maths

Pythagoras & Trigonometry
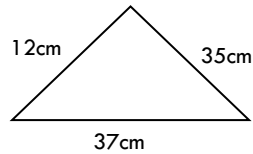

Due in:

Rules

You must spend a minimum of £10.

Starter

You must show your working out for each question. Note: Diagrams in questions are not accurate.

1. Right-angled?   £2.00

Is this triangle right-angled?

Prove your answer with a calculation.
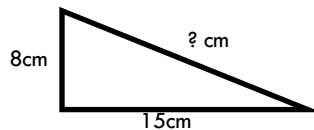
12cm   35cm

37cm

2. Triples   £2.00

What is a Pythagorean triple?

Find two examples

3. Tick or trash   £1.90

This right angled triangle has two sides of 8cm & 15cm.

Jake says the missing side is 16cm, Lydia says it is 17cm. Who is correct? Why?
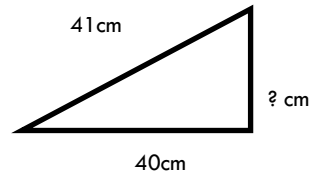
? cm

8cm

15cm

4. Basic Trig   £2.20

What are the three basic rules for use trigonometry in a right angled triangle?

Main Course

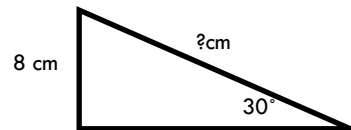Show your working and answer to 2dp where appropriate.

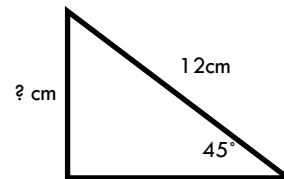### 5. More Pythagoras   £3.00

What is the missing side?

41cm

? cm

40cm

6. Missing hypotenuse   £3.50

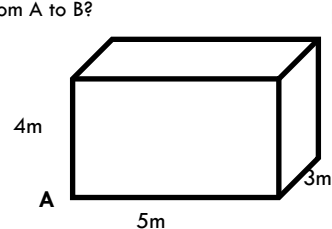Given that sin(30) = 0.5, what is the missing side?

?cm

8 cm

30°

7. Missing side   £3.50

This symmetrical arrow needs a border which is exactly 5cm wide all around it. Copy the diagram and complete the border.

12cm

? cm

45°

8. Cuboid Problem   £3.75

A cuboid has sides 3m, 4m & 5m. What is the shortest distance from A to B?

B

4m

A   5m   3m

Dessert

You can demonstrate your creativity and problem solving skills with a more challenging dessert.

9. Health & safety   £4.00

A ladder is 12m long and cannot be put at an angle of greater than 50° to the ground.

Will it reach a window 9.5m up a building?

10. Trig Revision   £4.00

Design a trigonometry revision poster for finding the sides right angled triangles.

Side order: +£1

Include how to find angles

11. Pythagoras Bio   £4.50

Design a poster about the life and work of Pythagoras, including his triangle theorem

12. Scaffolding challenge   £5.00

Scaffolding poles come in three sizes: 3m, 4m & 5m. Prove that a triangle made from one of each of them is right-angled, then work out the other angles.

Side order: If you made an isosceles triangle, how could you find the perpendicular height?   +£1

YOU MAY BE RIGHT, PYTHAGORAS, BUT EVERYBODY'S GOING TO LAUGH IF YOU CALL IT A "HYPOTENUSE."