Write your name, centre number and candidate number in the boxes below.

Surname	Other names

Centre number | | | | | |

Candidate number | | | | |

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Pythagoras' theorem

Time allowed: 50 minutes

Subject code **0580**

Mathematics

Questions from Paper 1, Paper 2 and Paper 3

You must have: a ruler marked in centimetres and millimetres, a protractor, compasses, a pen, an HB pencil and an eraser.
You may use a calculator.

Total marks

/ 41

Instructions

- Answer every question in the space provided on this paper.
- Write in black or dark blue ink. Pencil may be used for diagrams and graphs.
- Fill in your name, centre number and candidate number above.
- Show your working: a correct method can earn marks even if the answer is wrong.
- Unless a question says otherwise, give answers that are not exact to 3 significant figures, and angles in degrees to 1 decimal place.

Information

- This paper has 10 questions worth 41 marks in total.
- The marks for each question or part are shown in brackets, for example [3].

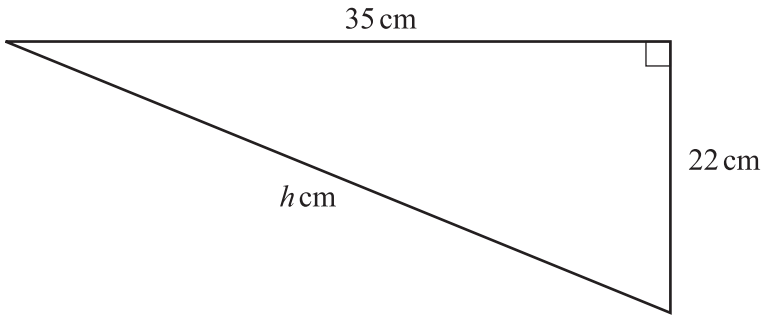
Advice

- Read every question through once before you write anything.
- Use the marks in brackets to judge how long to spend on each part.
- If you finish early, go back and check your working.

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Print at 100% (Actual size) so diagrams keep their real measurements.

1 The diagram shows a right-angled triangle.



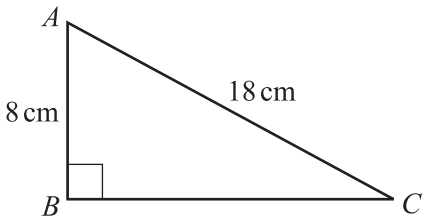
NOT TO SCALE

Calculate the value of h.

$h =$ ..... [2]

Pythagoras' theorem Click for more variations

2



NOT TO SCALE

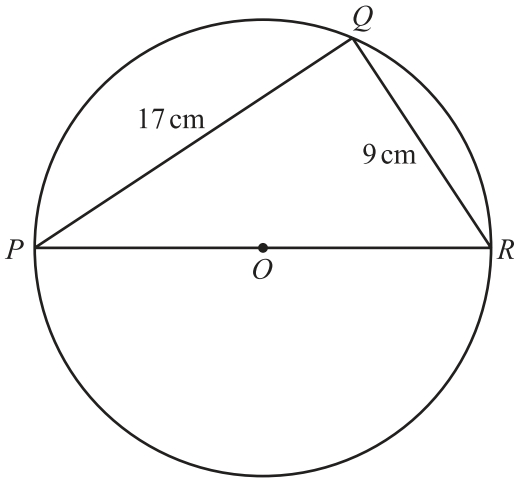
Calculate the length of BC.

$BC =$ ..... cm [3]

Pythagoras' theorem Click for more variations

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3



NOT TO SCALE

The diagram shows a circle, centre O.
P, Q and R are points on the circumference.
$PQ = 17$ cm and $QR = 9$ cm.

(a) Explain why angle PQR is 90°.

Answer(a) .....

..... [1]

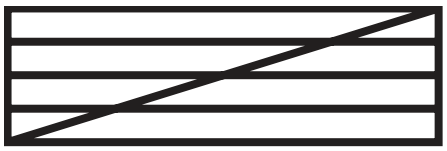
(b) Calculate the length PR.

Answer(b) $PR =$ ..... cm [2]

(a) Circle theorems (b) Pythagoras' theorem Click for more variations

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4



NOT TO SCALE

The diagram represents a rectangular gate measuring 1.5m by 3.5m.
It is made from eight lengths of wood.

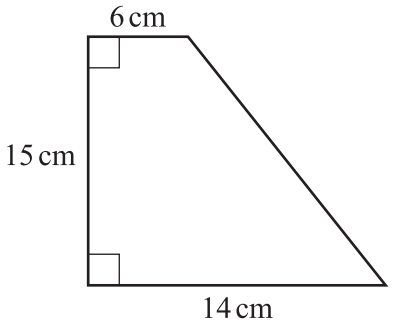
Calculate the total length of wood needed to make the gate.

Answer ..... m [3]

Pythagoras' theorem Click for more variations

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5



NOT TO SCALE

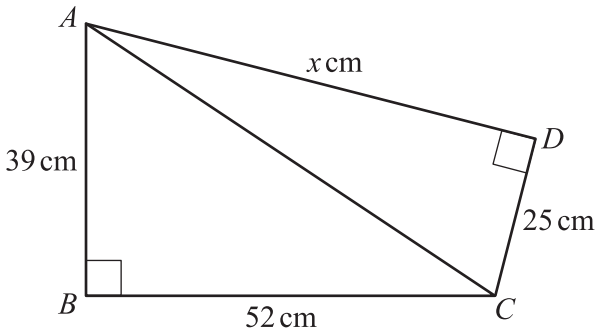
Calculate the perimeter of this trapezium.

..... cm [4]

Pythagoras' theorem Click for more variations

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6



NOT TO SCALE

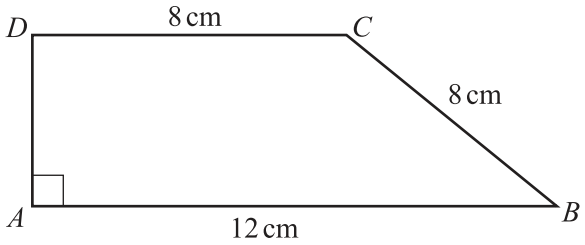
The diagram shows two right-angled triangles, *ABC* and *ACD*.

Work out the value of x.

$x =$ ..... [4]

Pythagoras' theorem Click for more variations

7



NOT TO SCALE

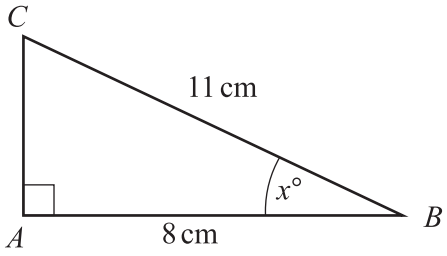
Calculate the area of this trapezium.

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..... cm^2 [4]

Area Click for more variations

8



NOT TO SCALE

The diagram shows a right-angled triangle ABC.

(a) Work out the exact length of AC.

..... cm [3]

(b) $\cos x = k$

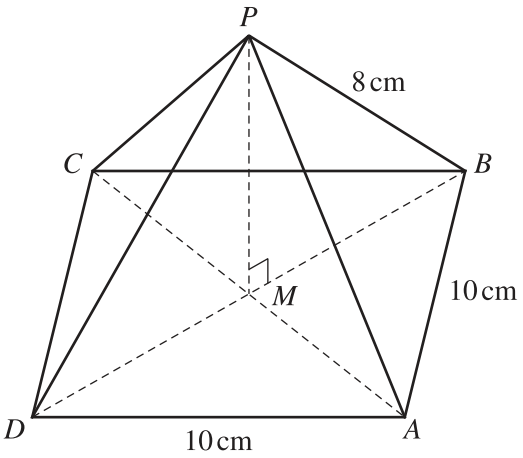
Write down the value of k.

$k =$ ..... [1]

(a) Pythagoras' theorem (b) SOHCAHTOA Click for more variations

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9



NOT TO SCALE

The diagram represents a pyramid with a square base of side 10 cm.

The diagonals *AC* and *BD* meet at *M*. *P* is vertically above *M* and *PB* = 8cm.

(a) Calculate the length of *BD*.

Answer(a) BD = ... cm [2]

(b) Calculate *MP*, the height of the pyramid.

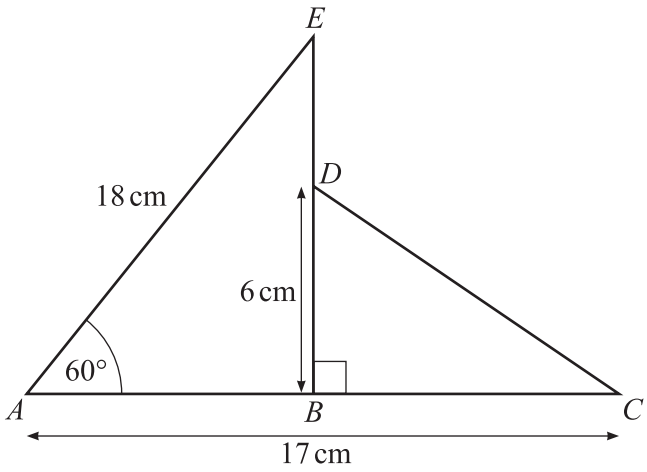
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Answer(b) MP = ... cm [3]

(a) Pythagoras' theorem (b) Pythagoras' theorem Click for more variations

10

NOT TO SCALE



The quadrilateral $ACDE$ is formed by two right-angled triangles ABE and BCD.
$AC = 17$ cm, $AE = 18$ cm and $BD = 6$ cm.

(a) Show that $CD = 10$ cm.

[5]

(b) Find the perimeter of the quadrilateral $ACDE$.
Give your answer in the form $p + k\sqrt{q}$.

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..... cm [4]

(a) Pythagoras' theorem (b) Exact trigonometric values Click for more variations