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

Surname	Other names

Centre number | | | | | |

Candidate number | | | | |

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Right-angled trigonometry

Time allowed: 45 minutes

Subject code **0580**

Mathematics

Questions from Paper 1, Paper 2, Paper 3 and Paper 4

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

/ 38

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 38 marks in total.
- The marks for each question or part are shown in brackets, for example [3].

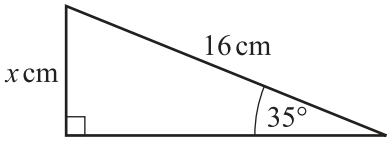
Advice

- 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



NOT TO SCALE

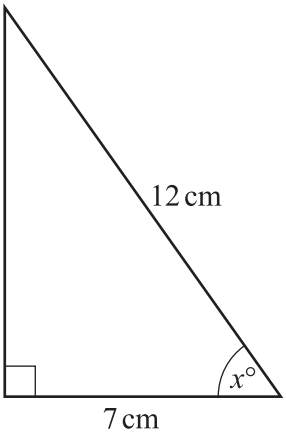
The diagram shows a right-angled triangle.

Calculate the value of x.

$x =$ ..... [2]

SOHCAHTOA Click for more variations

2



NOT TO SCALE

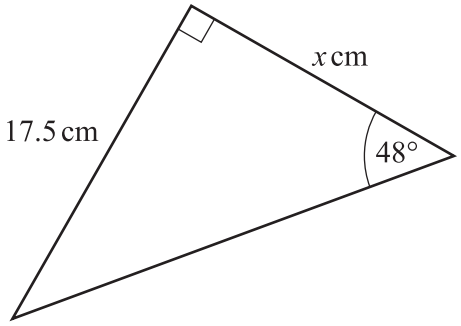
Calculate the value of x.

$x =$ ..... [2]

SOHCAHTOA Click for more variations

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3



NOT TO SCALE

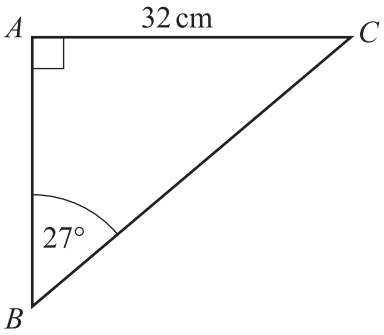
The diagram shows a right-angled triangle.

Show that the value of x is 15.8, correct to 3 significant figures.

[3]

SOHCAHTOA Click for more variations

4



NOT TO SCALE

ABC is a right-angled triangle.

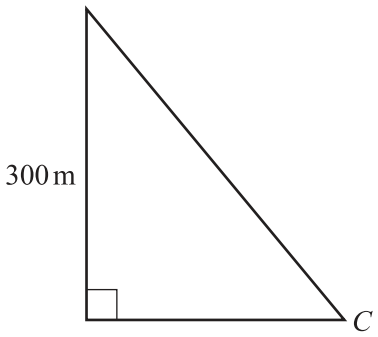
Calculate BC.

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

SOHCAHTOA Click for more variations

5 From the top of a building, 300 metres high, the angle of depression of a car, C, is 52°.



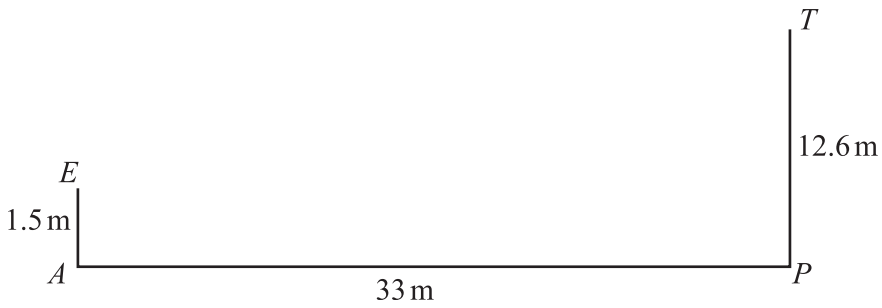
NOT TO SCALE

Calculate the horizontal distance from the car to the base of the building.

..... m [3]

SOHCAHTOA Click for more variations

6



NOT TO SCALE

The diagram shows two vertical poles, AE and PT, standing on horizontal ground, AP.

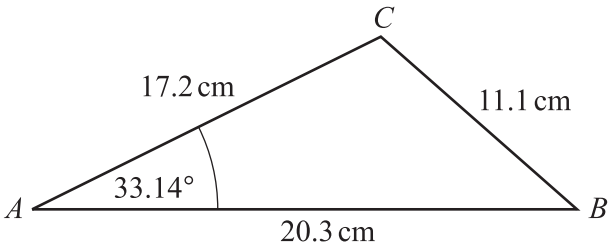
Calculate the angle of elevation of the point T from the point E.

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..... [3]

Angles of elevation and depression Click for more variations

7



NOT TO SCALE

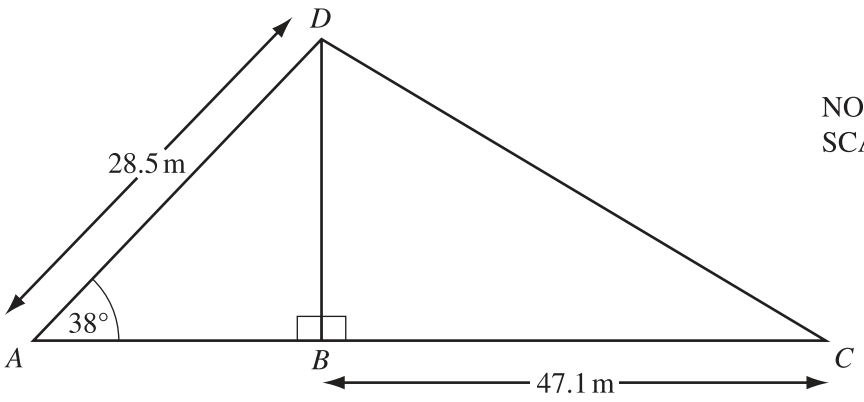
Calculate the shortest distance from C to AB.

..... cm [3]

SOHCAHTOA Click for more variations

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8



NOT TO SCALE

A flagpole, *BD*, is attached to level horizontal ground by ropes, *AD* and *CD*.

AD = 28.5 m, *BC* = 47.1 m and angle *DAB* = 38°.

Calculate

(a) *BD*, the height of the flagpole,

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

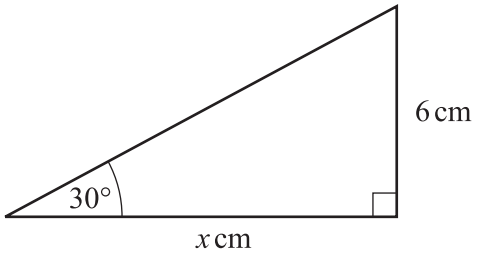
(b) angle *BCD*.

Answer(b) Angle *BCD =* ..... [2]

(a) SOHCAHTOA (b) SOHCAHTOA Click for more variations

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9



NOT TO SCALE

Find the exact value of x.

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

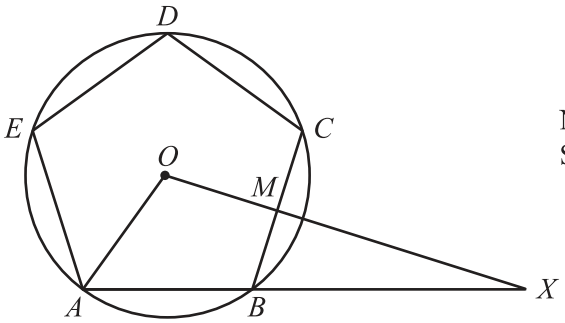
Exact trigonometric values Click for more variations

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10 **(a)** Show that each interior angle of a regular pentagon is 108°.

[2]

(b)



NOT TO SCALE

The diagram shows a regular pentagon $ABCDE$.
The vertices of the pentagon lie on a circle, centre O, radius 12 cm.
M is the midpoint of BC.

(i) Find BM.

$BM =$ ..... cm [3]

(ii) OMX and ABX are straight lines.

(a) Find BX.

$BX =$ ..... cm [3]

(b) Calculate the area of triangle AOX.

..... cm^2 [3]

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(a) Angles in polygons | (b)(i) SOHCAHTOA | (b)(ii)(a) SOHCAHTOA | (b)(ii)(b) Area of a triangle

Click for more variations