Additional Assessment Materials
Summer 2021

Pearson Edexcel

GCSE (9-1) in Mathematics 1MA1 Foundation
(Calculator) (Public release version)

Topic 4: Geometry (Test 1)

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General guidance to Additional Assessment Materials for use in 2021

Context

- Additional Assessment Materials are being produced for GCSE, AS and A levels (with the exception of Art and Design).
- The Additional Assessment Materials presented in this booklet are an optional part of the range of evidence teachers may use when deciding on a candidate's grade.
- 2021 Additional Assessment Materials have been drawn from previous examination materials, namely past papers.
- Additional Assessment Materials have come from past papers both published (those materials available publicly) and unpublished (those currently under padlock to our centres) presented in a different format to allow teachers to adapt them for use with candidate.

Purpose

- The purpose of this resource to provide qualification-specific sets/groups of questions covering the knowledge, skills and understanding relevant to this Pearson qualification.
- This document should be used in conjunction with the mapping guidance which will map content and/or skills covered within each set of questions.
- These materials are only intended to support the summer 2021 series.

1 Here is a 3-D shape.
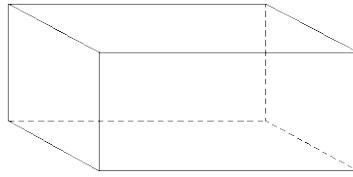
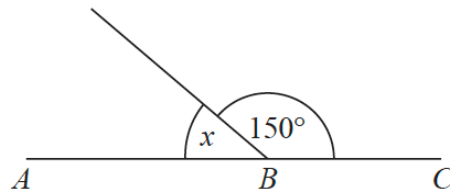(*a*) Write down the name of this 3-D shape.

....

(1)

(*b*) Write down the number of edges of this 3-D shape.

....

(1)

(Total for Question 1 is 2 marks)

2

ABC is a straight line.

(*a*) (i) Work out the size of the angle marked *x*.

.... °

(1)

(ii) Give a reason for your answer.

....

....

(1)

The diagram below is wrong.
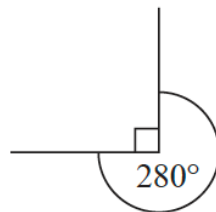
(*b*) Explain why.

....

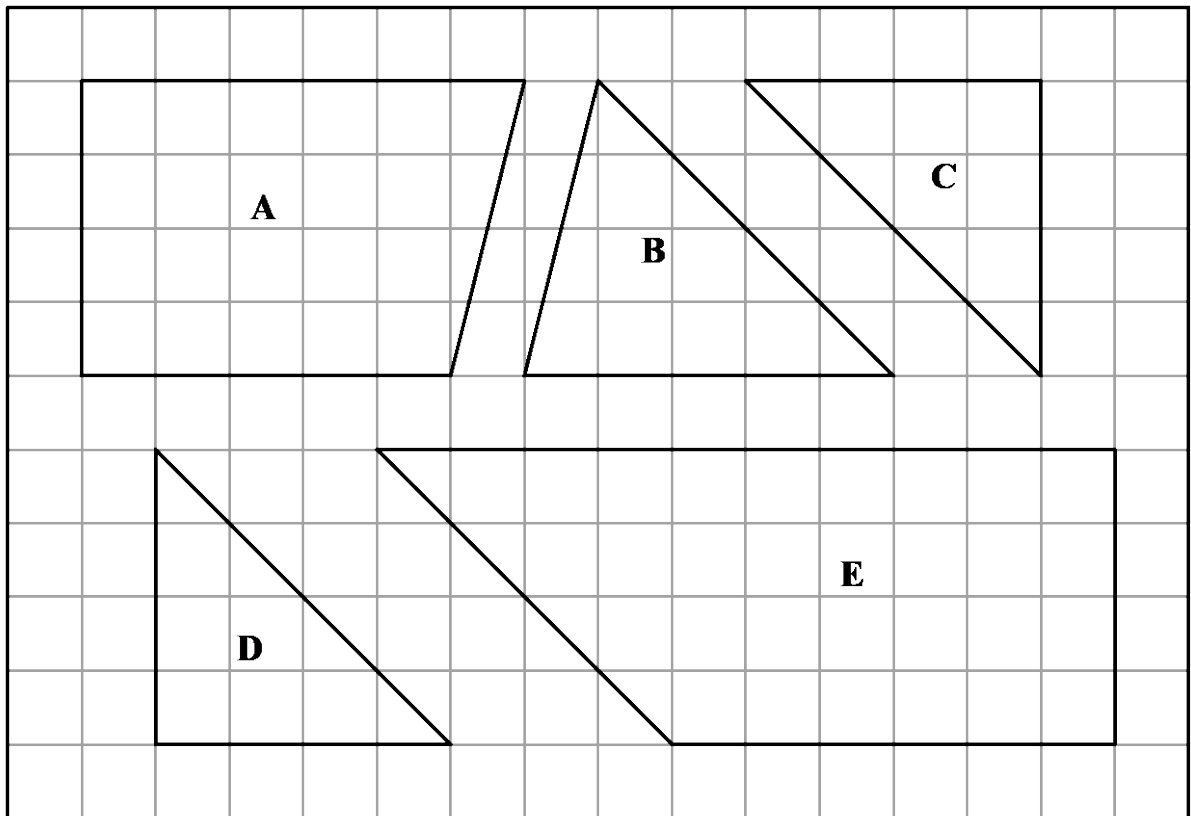...

(1)

(Total for Question 2 is 3 marks)

3 The diagram shows five shapes on a centimetre grid.

(*a*)   Write down the name of shape **E**.

....

(1)

Two of the shapes are congruent.

(*b*)   Write down the letters of these two shapes.

.... and ....

(1)

(Total for Question 3 is 2 marks)

4   The length of a rectangle is twice as long as the width of the rectangle.
The area of the rectangle is 32 cm^2.

Draw the rectangle on the centimetre grid.
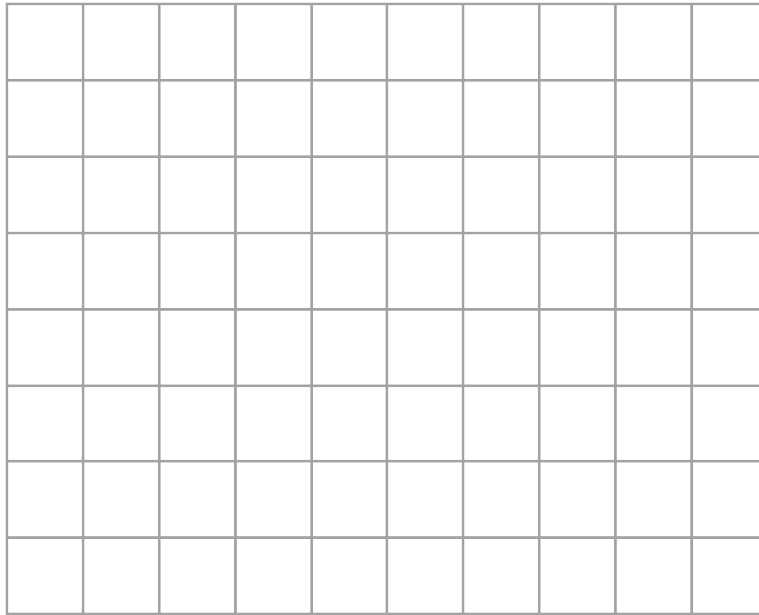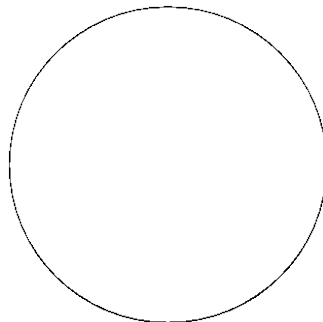
(Total for Question 4 is 2 marks)

5
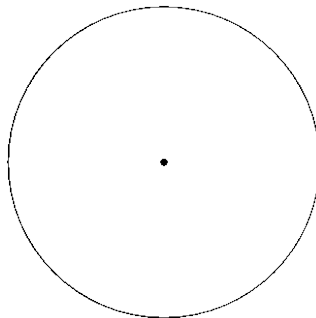
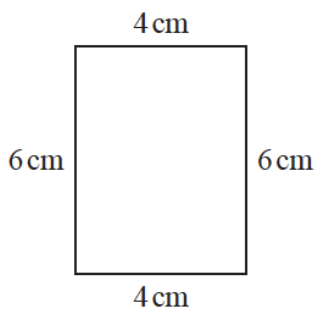(*a*) On the diagram above, draw a diameter of the circle.

(1)

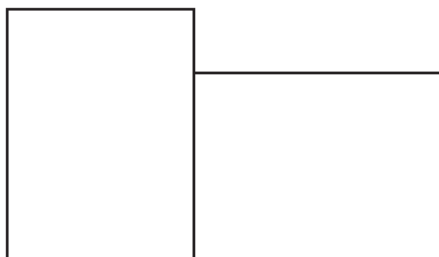(*b*) On the diagram below, draw a segment of the circle.
Shade the segment.

(1)

(Total for Question 5 is 2 marks)

6   Here is a rectangle.

4 cm

6 cm   6 cm

4 cm

The 6-sided shape below is made from two of these rectangles.

Work out the perimeter of this 6-sided shape.

.... cm

(Total for Question 6 is 3 marks)

7   Here is a cuboid.

4 cm

15 cm

10 cm
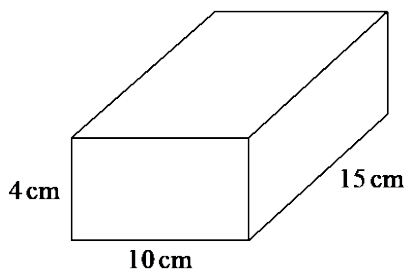
Work out the volume of the cuboid.

....

(Total for Question 7 is 3 marks)

8
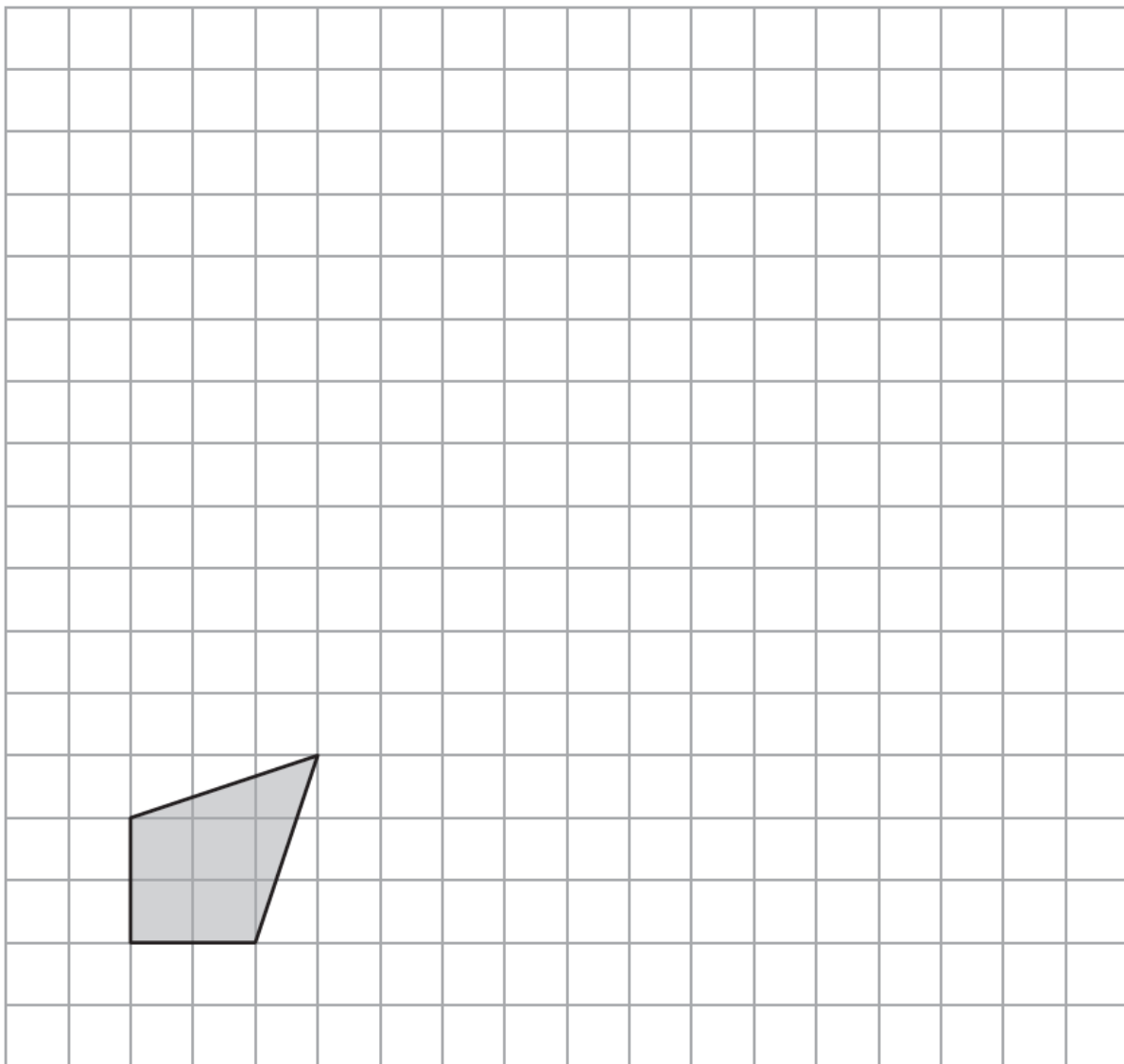
On the grid, draw an enlargement of the shaded shape with a scale factor of 3
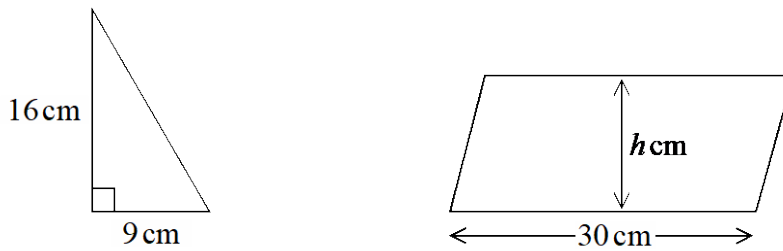
9   A square has an area of 81 cm^2
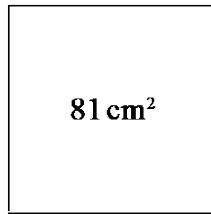
(*a*) Find the perimeter of the square.

....cm

(2)

The diagram shows a right-angled triangle and a parallelogram.
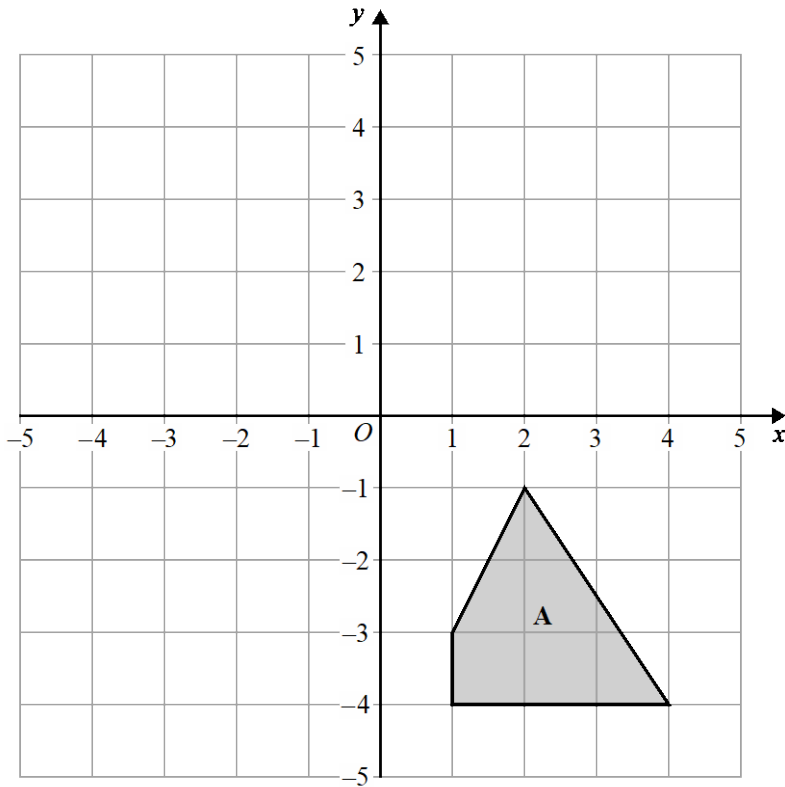

16 cm

9 cm

h cm

30 cm

The area of the parallelogram is 5 times the area of the triangle.
The perpendicular height of the parallelogram is *h* cm.
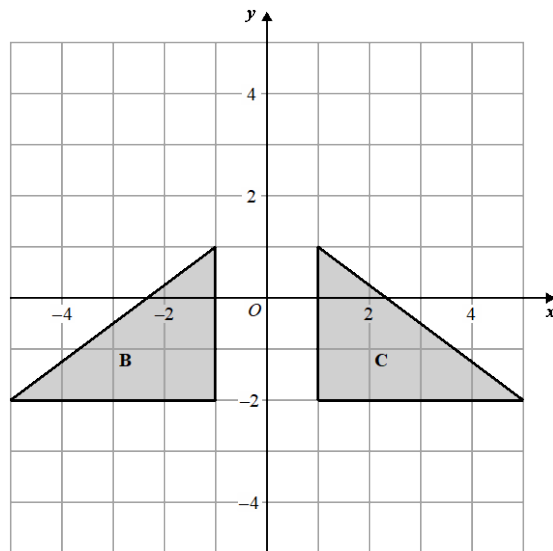
(*b*) Find the value of *h*.

h = ...

(3)

(Total for Question 9 is 5 marks)

10

(*a*)   Rotate shape **A** 90° clockwise about centre *O*.

(2)

(*b*)   Describe fully the single transformation that maps triangle **B** onto triangle **C**.

....

....

(2)

(Total for Question 10 is 4 marks)

11   The diagram shows a square *ABDE* and an equilateral triangle *BCD*.
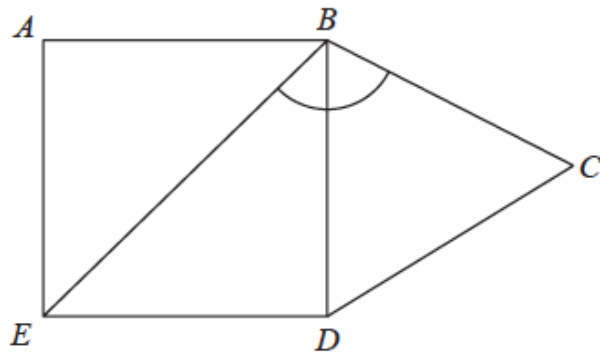
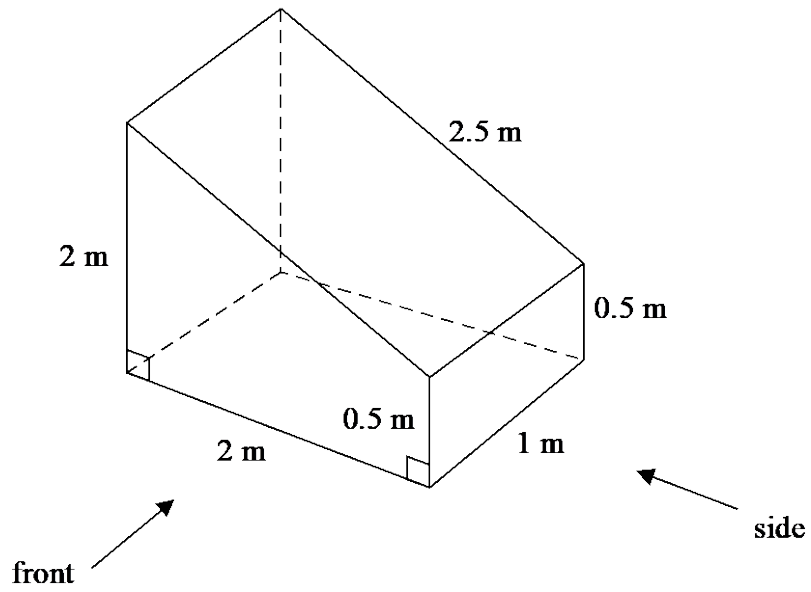Work out the size of angle *EBC*.
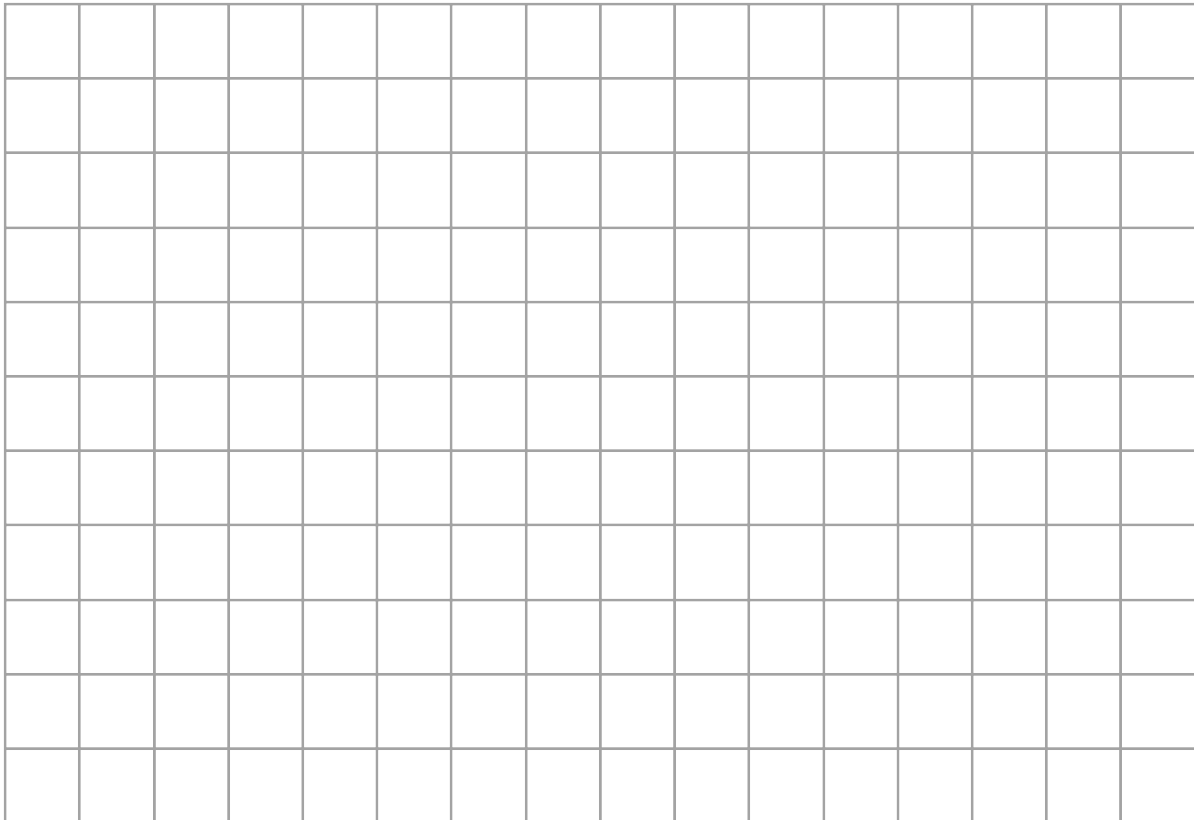
....°

(Total for Question 11 is 2 marks)

12 The diagram shows a prism with a cross section in the shape of a trapezium.

2.5 m

2 m

0.5 m

0.5 m

2 m

1 m

front

side

On the centimetre grid below, draw the front elevation and the side elevation of the prism.
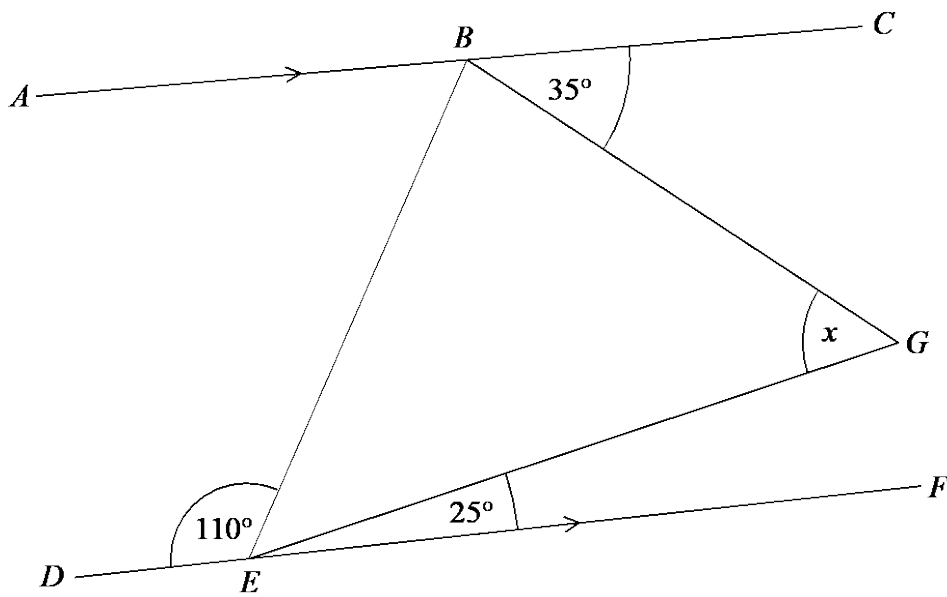Use a scale of 2 cm to 1 m.

(Total for Question 12 is 4 marks)

13 ---Each exterior angle of a regular polygon is 15°

Work out the number of sides of the polygon.

....

(Total for Question 13 is 2 marks)

14 *BEG* is a triangle.

ABC and *DEF* are parallel lines.

Work out the size of angle *x*.
Give a reason for each stage of your working.

....°

(Total for Question 14 is 4 marks)

15 $\mathbf{a} = \begin{pmatrix} 5 \\ 2 \end{pmatrix}$ $\mathbf{b} = \begin{pmatrix} -1 \\ 7 \end{pmatrix}$

Work out $2\mathbf{a} + \mathbf{b}$ as a column vector.

$$\begin{pmatrix} \text{------} \\ \text{------} \end{pmatrix}$$

(Total for Question 15 is 2 marks)

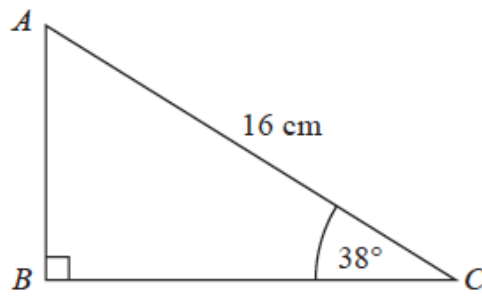**16**   Use a ruler and compasses to construct the line from the point P perpendicular to the line CD.
You must show **all** construction lines.

× P

C ———————————————————————— D

(Total for Question 16 is 2 marks)

17 *ABC* is a right-angled triangle.

Calculate the length of *AB*.
Give your answer correct to 2 decimal places.

....cm

(Total for Question 17 is 2 marks)

18 The diagram shows a right-angled triangle and a quarter circle.
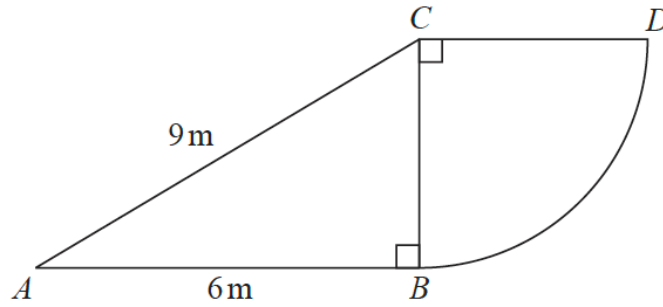
The right-angled triangle ABC has angle $ABC = 90°$
The quarter circle has centre C and radius CB.

Work out the area of the quarter circle.
Give your answer correct to 3 significant figures.
You must show all your working.

.... m^2

(Total for Question 27 is 4 marks)