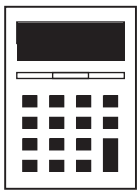
GCSE MATHEMATICS

Cosine Rule



These questions have been taken or modified from previous AQA GCSE Mathematics Papers.

Instructions

- Use black ink or black ball-point pen. Draw diagrams in pencil.
- Answer **all** questions.
- You must answer the questions in the spaces provided.
- If your calculator does not have a π button, take the value of π to be 3.14 unless another value is given in the question.

Information

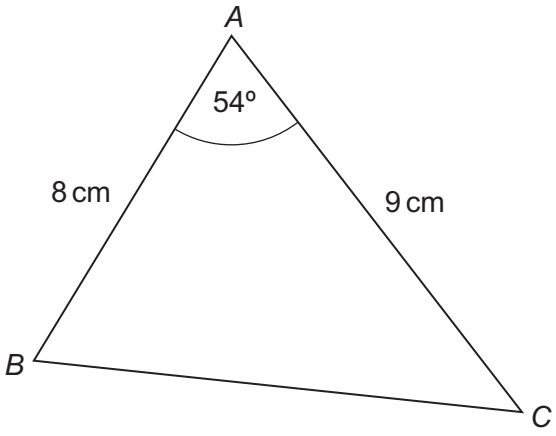
- The marks for questions are shown in brackets.
- The quality of your written communication is specifically assessed in questions that are indicated with an asterisk (*).

Advice

- Read each question carefully before you start to answer it.
- In all calculations, show clearly how you work out your answer.
- Use the number of marks for the question as a guide to the amount of time you need to spend.
- Look at previous parts of the question, e.g. a), b), c) i) as there may be information there you need to answer later parts.
- Check your answer is realistic and appropriate.
- For calculator decimal numbers always write your full calculator display in the working out area and then, if you need to, round the answer on the answer line.

This booklet was curated and modified using AQA examination papers between 2010-2016, for thecalculatorguide.com , where you can find many more booklets on further topics. All questions used are reproduced for educational purposes only.

1 *ABC* is a triangle.



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Calculate the length *BC*.

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Answer ..... cm *(3 marks)*

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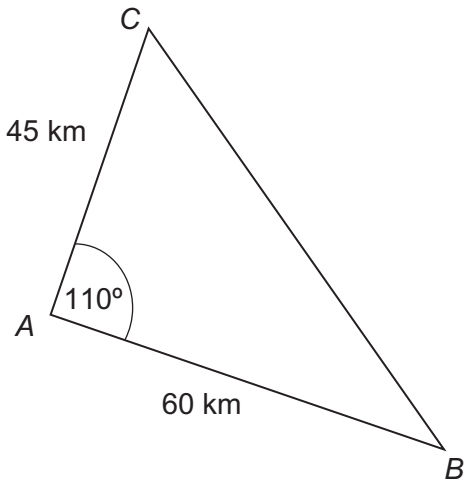

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Work out the length *BC*.

[3 marks]

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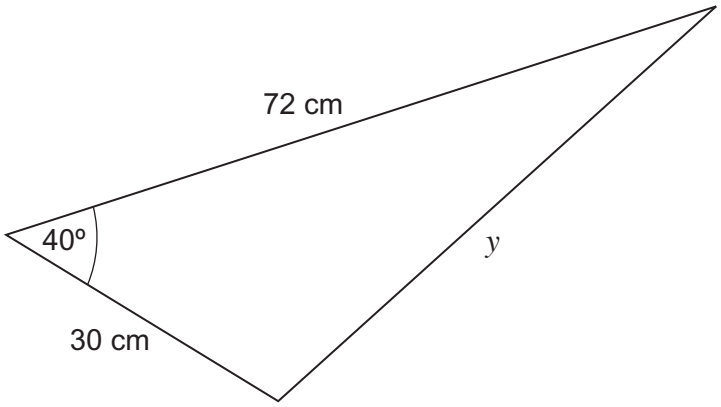
Answer ..... km

3 Work out the length y.



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[3 marks]

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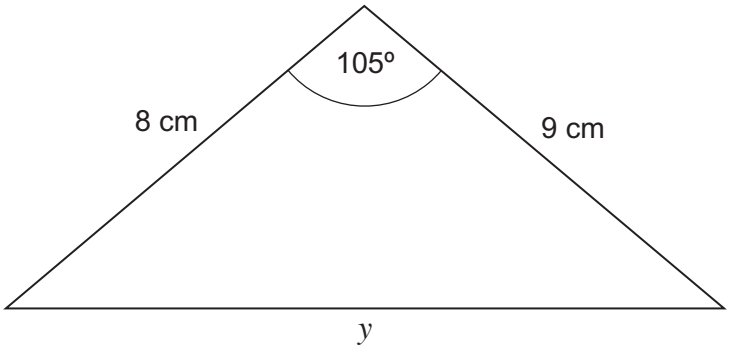
Answer ..... cm

4 Work out the length y.



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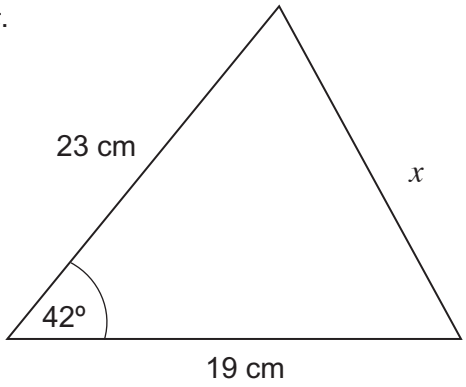
[3 marks]

Answer _____ cm

5 Work out the length x.



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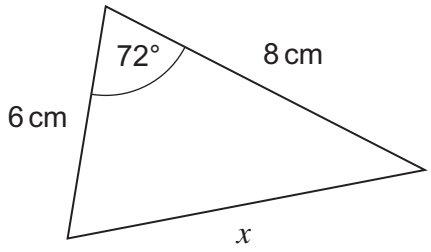
Answer ..... cm **[3 marks]**

6 Work out the length x for this triangle.



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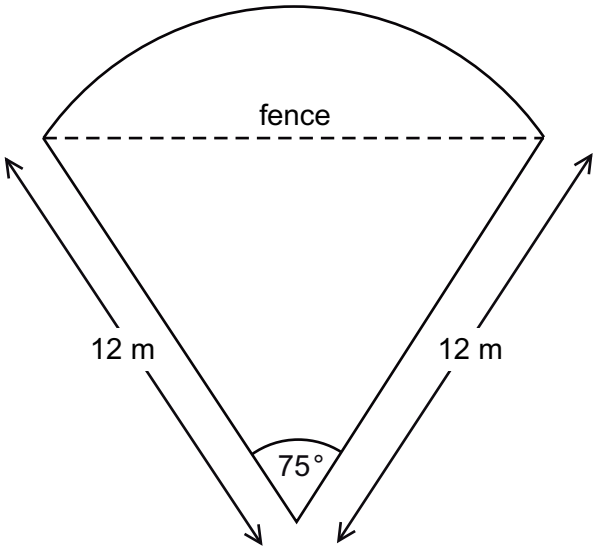
Answer ..... cm *(3 marks)*

7 The flower bed is divided into a triangle and a segment by a fence.



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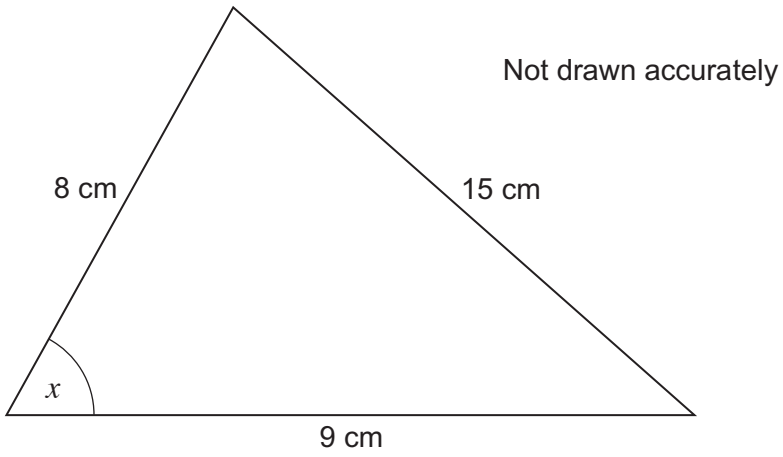
Work out the length of the fence.

[3 marks]

Answer _____ m

8



8 (a) Which equation is correct for the triangle?
Circle your answer.

[1 mark]

$\cos x = \dfrac{15^2 - 8^2 - 9^2}{2 \times 8 \times 9}$

$\cos x = \dfrac{8^2 + 9^2 - 15^2}{15 \times 8 \times 9}$

$\cos x = \dfrac{8^2 + 9^2 - 15^2}{2 \times 8 \times 9}$

$\cos x = \dfrac{15^2 - 8^2 + 9^2}{15 \times 8 \times 9}$

8 (b) Use your calculator to work out the value of x in your equation.

[1 mark]

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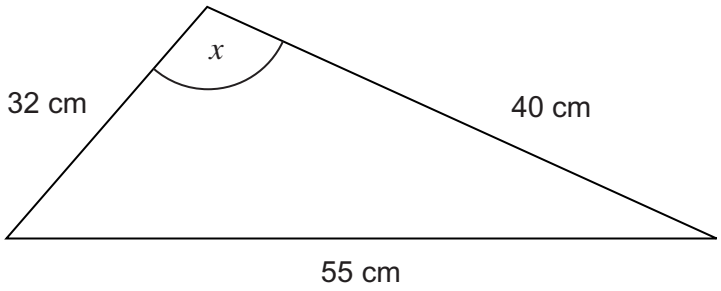
Answer ..... degrees

9 Work out the size of angle x.



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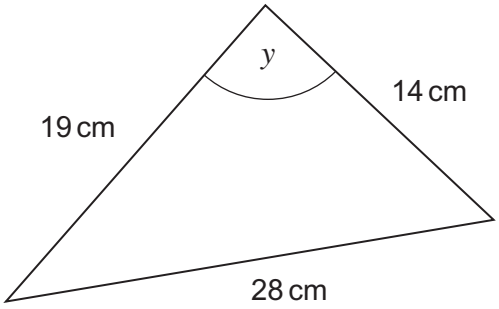
[3 marks]

Answer _____ degrees

10 Work out the size of angle y.



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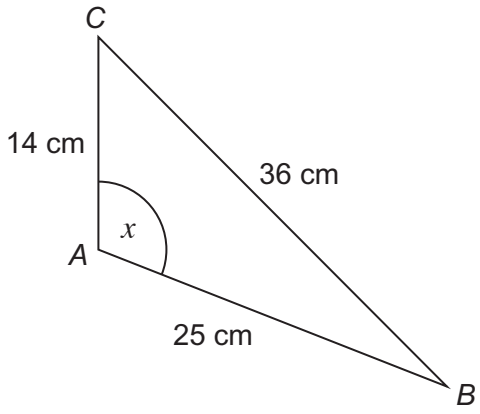
Answer ..... degrees *(3 marks)*

11 Work out the size of angle x.



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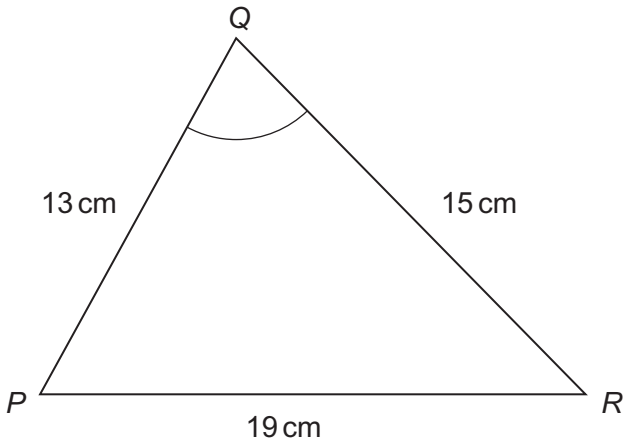
[3 marks]

Answer _____ degrees

12 Work out the size of angle *PQR*.



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Answer ..... degrees *(3 marks)*

13

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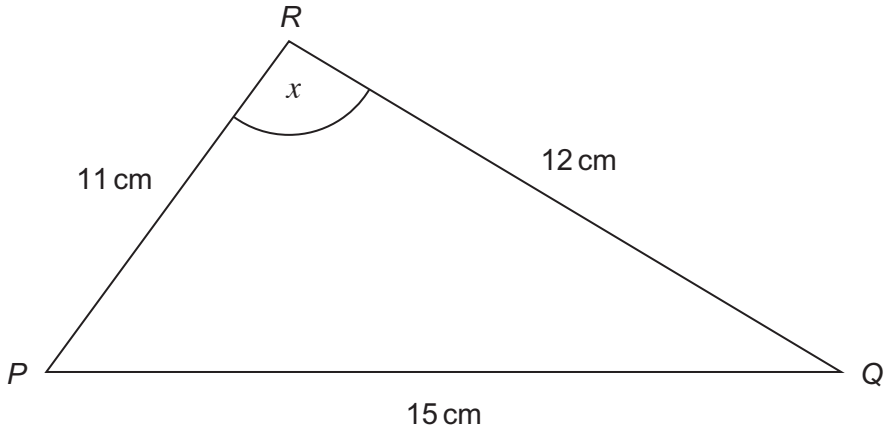

Use the cosine rule to work out the size of angle x.

[3 marks]

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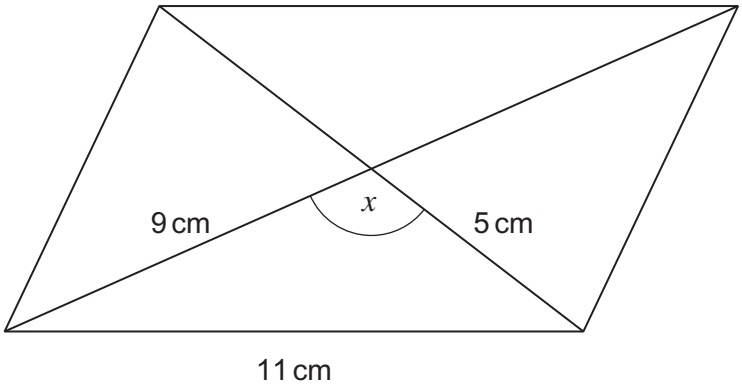
Answer ..... degrees

14 The diagram shows a parallelogram.



14 (a) Work out the size of angle x.

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Answer ..... degrees *(3 marks)*

14 (b) Work out the area of the parallelogram.

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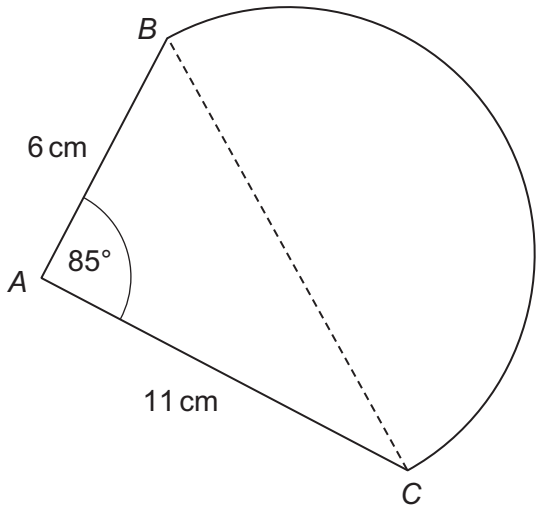
Answer ..... cm^2 *(3 marks)*

15 This shape is made from a semicircle and a triangle.



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Calculate the perimeter of the shape.

[5 marks]

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Answer ..... cm