



AS Mathematics Exam Questions by Topic
Chapter 6: Trigonometry - sine and cosine rules and the area of a triangle

These questions are taken from the Specimen Exam materials and the real 2018 papers for the new syllabus AS and A-level mathematics courses and arranged by chapter of the textbooks by Goldie et al (available here: <https://amzn.to/39umfr5> and <https://amzn.to/3hE8kBL>). There are a mixture of questions from OCR A, OCR B (MEI) and Edexcel. Although the style of questions varies a little across the exam boards the content of the syllabus is almost identical so these are suitable for students preparing for any exam board.

Free problem sets for all other chapters, as well as video solutions, full past papers and other content for GCSE and A-level maths can be found at:

<https://mathsaurus.com/>

OCR B MEI AS Sample Paper 2 Question 5:

- 5** A triangular field has sides of length 100m, 120m and 135m.
- (i) Find the area of the field. [5]
- (ii) Explain why it would not be reasonable to expect your answer in (i) to be accurate to the nearest square metre. [1]
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Edexcel AS 2018 Paper 1 Question 7:

7. In a triangle ABC , side AB has length 10 cm, side AC has length 5 cm, and angle $BAC = \theta$ where θ is measured in degrees. The area of triangle ABC is 15 cm^2

(a) Find the two possible values of $\cos \theta$ (4)

Given that BC is the longest side of the triangle,

(b) find the exact length of BC . (2)

Edexcel AS Sample Paper 1 Question 8:

8.

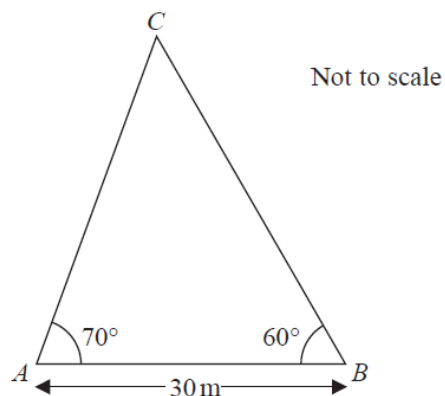


Figure 1

A triangular lawn is modelled by the triangle ABC , shown in Figure 1. The length AB is to be 30 m long.

Given that angle $BAC = 70^\circ$ and angle $ABC = 60^\circ$,

(a) calculate the area of the lawn to 3 significant figures. (4)

(b) Why is your answer unlikely to be accurate to the nearest square metre? (1)

OCR A AS 2018 Paper 2 Question 1:

- 1 In triangle ABC , $AB = 20$ cm and angle $B = 45^\circ$.
- (i) Given that $AC = 16$ cm, find the two possible values for angle C , correct to 1 decimal place. [4]
- (ii) Given instead that the area of the triangle is $75\sqrt{2}$ cm², find BC . [2]
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OCR A AS Sample Paper 1 Question 3:

- 3 The points P , Q and R have coordinates $(-1, 6)$, $(2, 10)$ and $(11, 1)$ respectively. Find the angle PRQ . [4]
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OCR B MEI 2018 Paper 3 Question 1:

- 1 Triangle ABC is shown in Fig. 1.

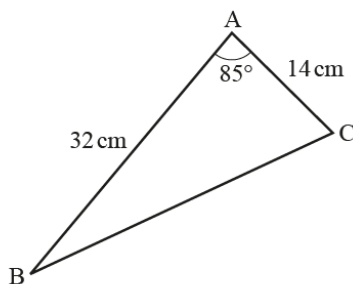


Fig. 1

Find the perimeter of triangle ABC . [3]
