Area of a Triangle

Specification: AQA 7357: E1 · Edexcel 9MA0: 5.1

HOMEWORK

Consolidation

1 In triangle ABC, AB = 14.5 cm, AC = 9.8 cm and angle BAC = 57°. Find the area.
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2 A triangle has sides 6 cm, 9 cm and 11 cm. Find its area.
AQA E1 · Edexcel 5.1

3 In triangle ABC, AB = 10 cm, angle BAC = 50° and angle ABC = 60°. Find the area.
AQA E1 · Edexcel 5.1

4 No calculator. In triangle PQR, PQ = 10 cm, PR = $4\sqrt{3}$ cm and angle QPR = 60°. Find the exact area.
AQA E1 · Edexcel 5.1

5 Two sides of a triangle are 9 cm and 11 cm, with angle θ between them. The area is 36 cm². Find the two possible values of θ.
AQA E1 · Edexcel 5.1

6 In triangle ABC, AB = 13 cm, AC = x cm and angle BAC = 68°. The area is 50 cm². Find x.
AQA E1 · Edexcel 5.1

7 In triangle PQR, PQ = x cm, PR = $(x - 3)$ cm and angle QPR = 150°. The area is 10 cm². Find x.
AQA E1 · Edexcel 5.1

8 In triangle PQR, PQ = 8 cm, PR = 7 cm and the area is 24 cm². Angle QPR is obtuse.
(a) Find angle QPR.
(b) Find QR.
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9 In triangle ABC, AB = $(x + 4)$ cm, AC = $(6 - x)$ cm and angle BAC = 150°. The area is A cm².
(a) Show that $A = \frac{1}{4}(24 + 2x - x^2)$.
(b) Find the maximum value of A and the value of x where it occurs.
AQA E1 · Edexcel 5.1, B9

10 A triangular sail has two edges of 4.2 m and 3.6 m meeting at an acute angle. The area of the sail is 6.5 m². Find the angle between the two edges.
AQA E1 · Edexcel 5.1

11 *AQA-style*. In triangle ABC, AB = x cm, AC = $(x + 2)$ cm and angle BAC = 60°. The area of the triangle is $6\sqrt{3}$ cm².
(a) Show that $x^2 + 2x - 24 = 0$. [3 marks]
(b) Find the exact length of BC. [4 marks]
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12 *Edexcel-style*. In triangle PQR, PQ = 12 cm, PR = 10 cm and angle QPR = θ. The area of the triangle is 48 cm².
(a) Show that $\sin\theta = 0.8$. [2 marks]
(b) Given that QR is the longest side of the triangle, find QR. [5 marks]
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