The Sine Rule

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

HOMEWORK Consolidation

1 In triangle ABC, $A = 29°$, $B = 104°$ and $a = 6.5$ cm. Find b.
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2 In triangle ABC, $B = 37°$, $C = 58°$ and $a = 14$ cm. Find b.
AQA E1 · Edexcel 5.1

3 In triangle ABC, $a = 8.4$ cm, $b = 6.1$ cm and $A = 77°$. Find B.
AQA E1 · Edexcel 5.1

4 In triangle PQR, $PQ = 12$ cm, angle $P = 50°$ and angle $R = 70°$. Find QR.
AQA E1 · Edexcel 5.1

5 Without a calculator: in triangle ABC, $A = 60°$, $B = 45°$ and $b = 6$ cm. Show that $a = 3\sqrt{6}$ cm.
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6 In triangle ABC, $a = 7$ cm, $c = 11$ cm and $C = 120°$.
(a) Find A.
(b) Find b.
AQA E1 · Edexcel 5.1

7 In triangle ABC, $a = 9$ cm, $b = 13$ cm and $C = 38°$. Find c. Say which rule you used and why.
AQA E1 · Edexcel 5.1

8 From point A on level ground, the angle of elevation of the top P of a tower is 28°. From point B, 60 m closer to the tower and in line with A, it is 46°. Find the height of the tower.
AQA E1 · Edexcel 5.1, E9

9 A ship sails 10 km due east from S_1 to S_2. A lighthouse L is on a bearing of 040° from S_1 and 320° from S_2. Find the distance S_2L.
AQA E1 · Edexcel 5.1, E9

10 In triangle ABC, angle $A = 45°$, angle $C = 30°$, $BC = x$ cm and $AB = (x - 2)$ cm. Find the exact value of x.
AQA E1 · Edexcel 5.1

11 *AQA-style*. In triangle ABC, $AB = 10$ cm, angle $BAC = 40°$ and angle $ABC = 75°$.
(a) Find AC. [3 marks]
(b) The point D lies on AB with $AD = 4$ cm. Find CD. [3 marks]
AQA E1 · Edexcel 5.1 · AQA-style

12 *Edexcel-style*. Coastguard stations P and Q are 25 km apart, with Q due east of P. A ship S is on a bearing of 052° from P and 334° from Q.
(a) Show that angle $PSQ = 78°$. [2 marks]
(b) Find the distance PS. [3 marks]
(c) Find the shortest distance from the ship to the line PQ. [2 marks]
AQA E1 · Edexcel 5.1, E9 · Edexcel-style