The Ambiguous Case

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

HOMEWORK Consolidation

1 In triangle ABC, $AB = 13$ cm, $AC = 10$ cm and angle $ABC = 41°$. Find the two possible values of angle ACB.
AQA E1 · Edexcel 5.1

2 In triangle ABC, $AB = 7$ cm, $AC = 9$ cm and angle $ABC = 52°$. Find angle ACB.
AQA E1 · Edexcel 5.1

3 In triangle ABC, $AB = 15$ cm, $AC = 6$ cm and angle $ABC = 28°$. Show that no such triangle exists.
AQA E1 · Edexcel 5.1

4 No calculator.
(a) Given that $\sin 27° \approx 0.454$, write down the value of $\sin 153°$.
(b) Write down the obtuse angle x with $\sin x = \sin 64°$.
AQA E1 · Edexcel 5.1

5 In triangle ABC, $AB = 9$ cm, angle $ABC = 50°$ and $AC = b$ cm.
(a) Find the least possible value of b.
(b) Find the set of values of b for which there are two possible triangles.
AQA E1 · Edexcel 5.1

6 In triangle ABC, $AB = 14$ cm, $AC = 10$ cm, angle $ABC = 38°$ and angle ACB is obtuse.
(a) Find angle ACB.
(b) Find BC.
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7 In triangle ABC, $AB = 10$ cm, $AC = 7$ cm and angle $ABC = 37°$. Use the cosine rule to find the two possible lengths of BC.
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8 In triangle PQR, $PQ = 8$ cm, $PR = 6$ cm and angle $PQR = 35°$. Find the two possible values of angle QPR.
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9 No calculator. In triangle ABC, $AB = 8$ cm, angle $ABC = 60°$ and $AC = b$ cm.
(a) Find the exact least possible value of b.
(b) Find the set of values of b for which there are two possible triangles.
AQA E1 · Edexcel 5.1

10 A coastguard station S is 12 km from a point P on a straight shipping lane. The angle between PS and the lane is 25°. The station's radar reaches 8 km. Find the length of the shipping lane covered by the radar.
AQA E1 · Edexcel 5.1, E9

11 *AQA-style*. In triangle ABC, $AB = 10$ cm, $AC = 8$ cm and angle $ABC = 48°$.
(a) Find the two possible values of angle BAC. [4 marks]
(b) Find the shorter possible length of BC. [2 marks]
AQA E1 · Edexcel 5.1 · AQA-style

12 *Edexcel-style*. In triangle ABC, $AB = 11$ cm, $BC = 7$ cm and angle $BAC = 32°$. Angle ACB is obtuse.
(a) Find angle ACB. [3 marks]
(b) Find AC. [3 marks]
(c) Explain why the information "angle ACB is obtuse" is needed. [1 mark]
AQA E1 · Edexcel 5.1 · Edexcel-style