Maths.scot

National 5 Maths
Sine and Cosine Rules
(with Bearings)

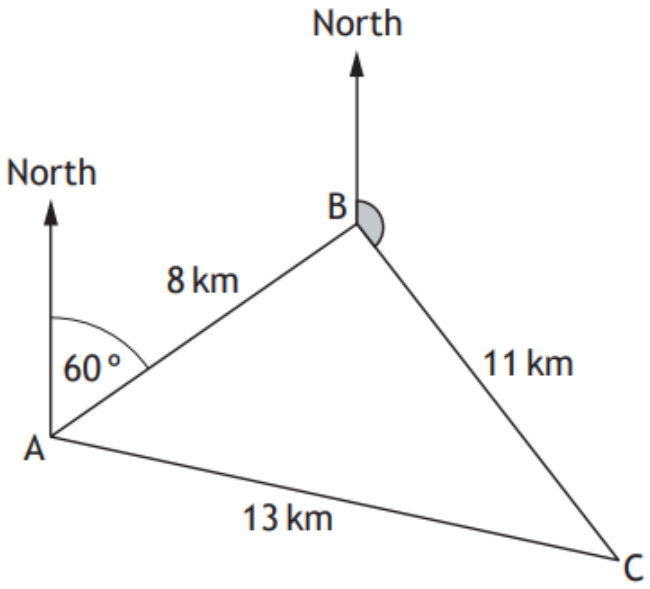
SQA past paper and specimen paper questions and answers by topic

Visit Maths.scot for full worked solutions to each of these questions.

National 5 Maths
SQA 2014 Paper 2
Question 10

National 5 Maths
Maths.scot

In a race, boats sail round three buoys represented by A, B, and C in the diagram below.



B is 8 kilometres from A on a bearing of 060°.

C is 11 kilometres from B.

A is 13 kilometres from C.

(a) Calculate the size of angle ABC. **3**

(b) Hence find the size of the shaded angle. **2**

Answers:

(a) 84.8°

(b) 155.2°

National 5 Maths
SQA 2015 Paper 2
Question 13

National 5 Maths
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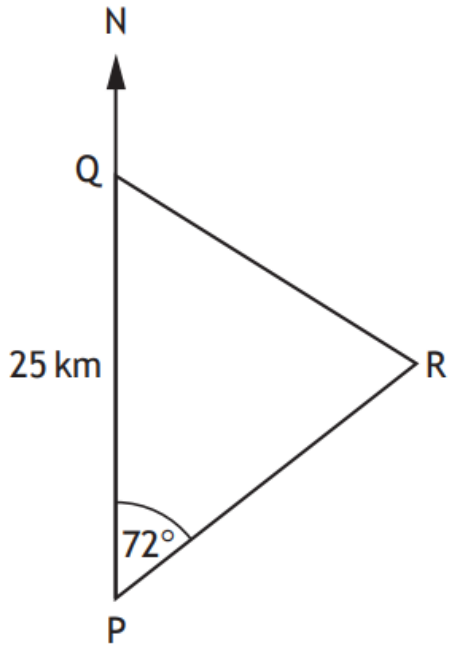
In the diagram below P, Q and R represent the positions of Portlee, Queenstown and Rushton respectively.



Portlee is 25 kilometres due South of Queenstown.
From Portlee, the bearing of Rushton is 072°.
From Queenstown, the bearing of Rushton is 128°.

Calculate the distance between Portlee and Rushton.

Do not use a scale drawing. **4**

Answer:

23.8 km

National 5 Maths
SQA 2017 Specimen
Paper 2 Question 15

National 5 Maths
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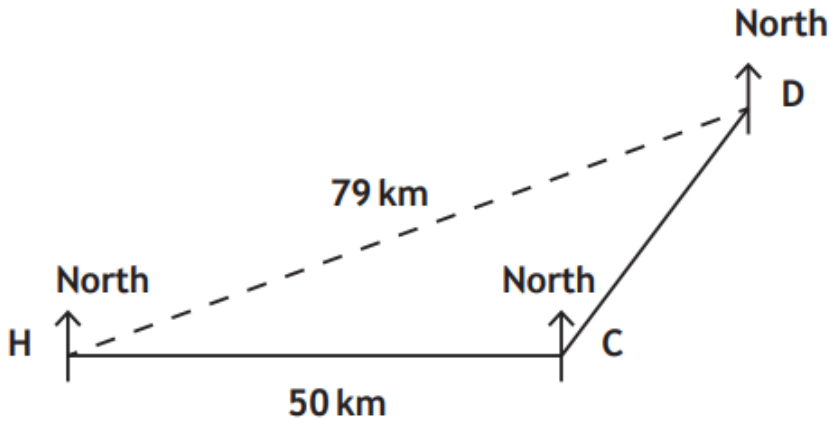
A yacht sails from a harbour H to a point C, then to a point D as shown below.



C is 50 kilometres due east of H.

D is on a bearing of 040° from C and is 79 kilometres from H.

(a) Calculate the size of angle CDH. **4**

(b) Hence, calculate the bearing on which the yacht must sail to return directly to the harbour. **2**

Answers:

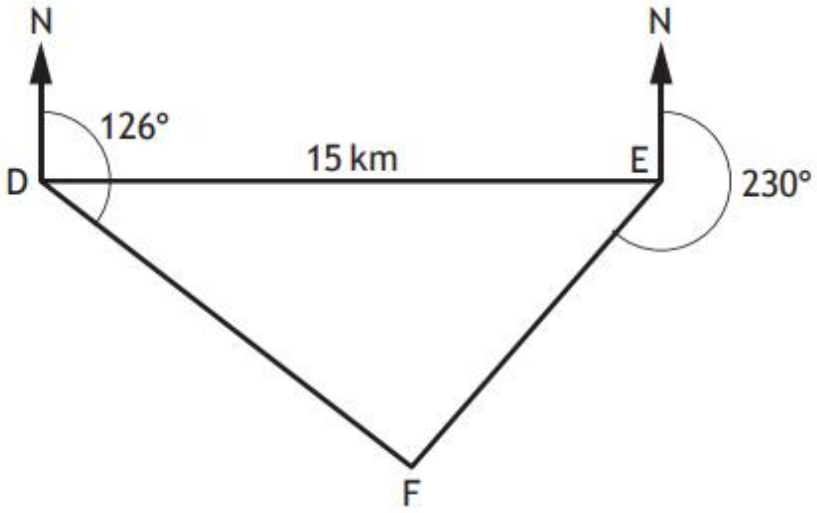
(a) 29°

(b) 249°

National 5 Maths
SQA 2017 Paper 2
Question 10

National 5 Maths
Maths.scot

In the diagram below D, E and F represent the positions of Dunbridge, Earlsford and Fairtown respectively.



Dunbridge is 15 kilometres west of Earlsford.

From Dunbridge, the bearing of Fairtown is 126°.

From Earlsford the bearing of Fairtown is 230°.

Calculate the distance between Dunbridge and Fairtown. **4**

Do not use a scale drawing.

Answer:

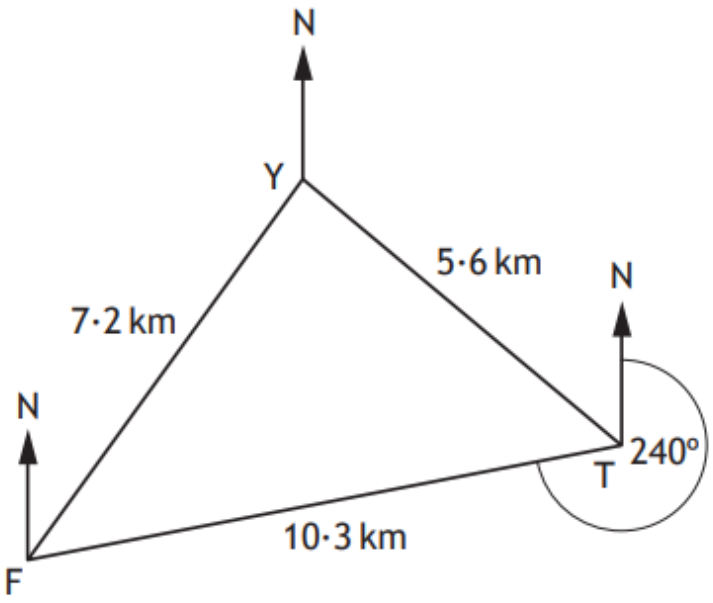
9.9 km

National 5 Maths
SQA 2018 Paper 2
Question 13

National 5 Maths
Maths.scot

A ferry and a trawler receive a request for help from a stranded yacht.

On the diagram the points F, T and Y show the positions of the ferry, the trawler and the yacht respectively.



- FY is 7·2 kilometres.
- TY is 5·6 kilometres.
- FT is 10·3 kilometres.
- F is on a bearing of 240° from T.

Calculate the bearing of the yacht from the trawler. **4**

Answer:

282.1°

National 5 Maths
SQA 2021 Paper 2
Question 7

National 5 Maths
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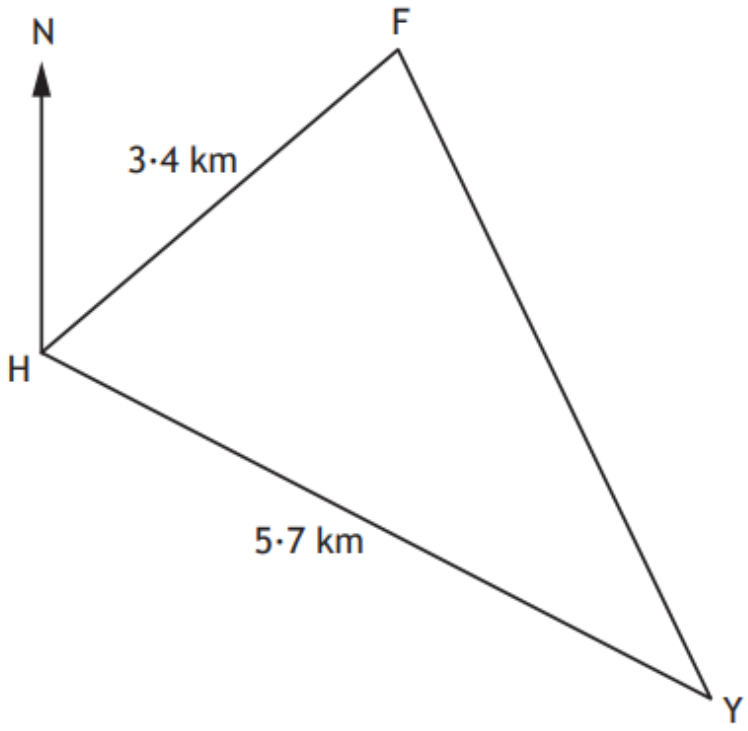
A fishing boat and a yacht left a harbour at the point H.

The fishing boat travelled 3·4 kilometres on a bearing of 047° to the point F.

The yacht travelled 5·7 kilometres on a bearing of 115° to the point Y.



Calculate the distance between the fishing boat at F and the yacht at Y. **4**

Answer:

5.4 km

National 5 Maths
SQA 2025 Paper 2
Question 12

National 5 Maths
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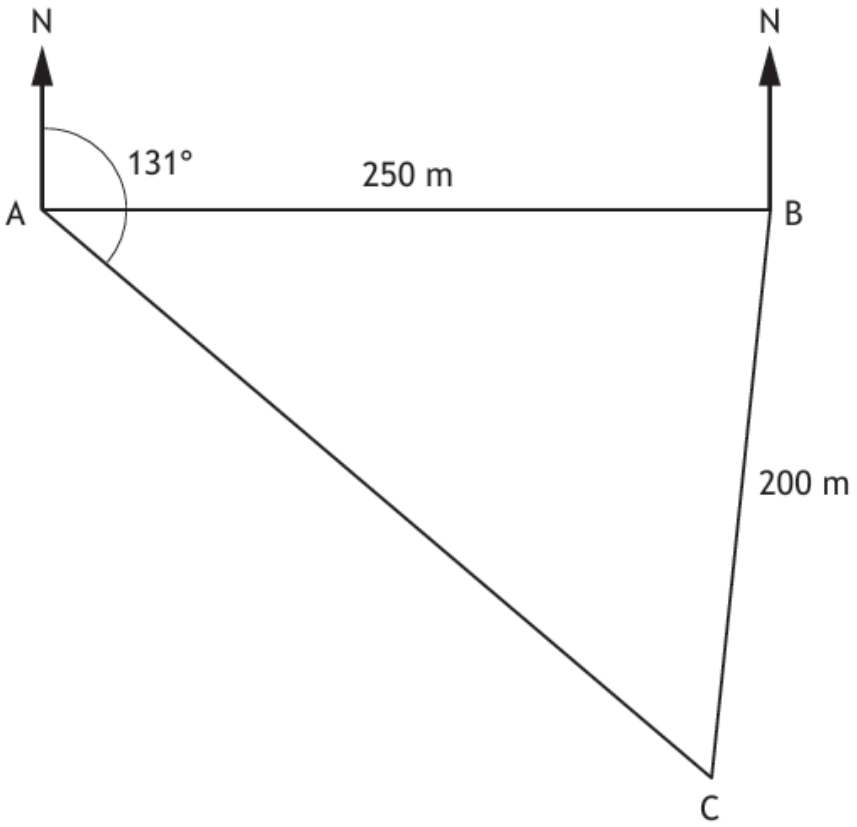
In the diagram A, B and C represent the positions of three checkpoints in an orienteering course.



- B is 250 metres **east** of A.
- The bearing of C from A is 131°.
- C is 200 metres from B.

Calculate the bearing of C from B.

Do not use a scale drawing. 4

Answer:

186°