

Bearings

Exam questions

Foundation and Higher tiers

Please write clearly in block capitals.

Name

Class

Teacher

Time allowed: 50 minutes

Materials

For this booklet you need a black pen, a pencil, a ruler, a rubber, a protractor and a calculator for Section B.

Instructions

- Use black ink or black ballpoint pen. Draw diagrams in pencil.
- Fill in the boxes at the top of this page.
- Answer all questions in the spaces provided.
- **Section A** (questions 1 to 9): you must not use a calculator.
- **Section B** (questions 10 to 14): you may use a calculator.
- Do all rough work in this booklet. Cross through any work you do not want marked.

Information

- The marks for each question are shown in brackets.
- The maximum mark for this booklet is 45.

Advice

- Read each question carefully.
- In all calculations, show clearly how you work out your answer.

For teacher’s use

Question	Mark
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
TOTAL	

Section A**You must not use a calculator**Do not
write
outside
the box

- 1** **(a)** Write down the three-figure bearing of due east.

Answer _____

[1 mark]

- (b)** Here are two points, A and B.

**B•**

Circle the bearing of B from A.

048° 132° 228° 312°

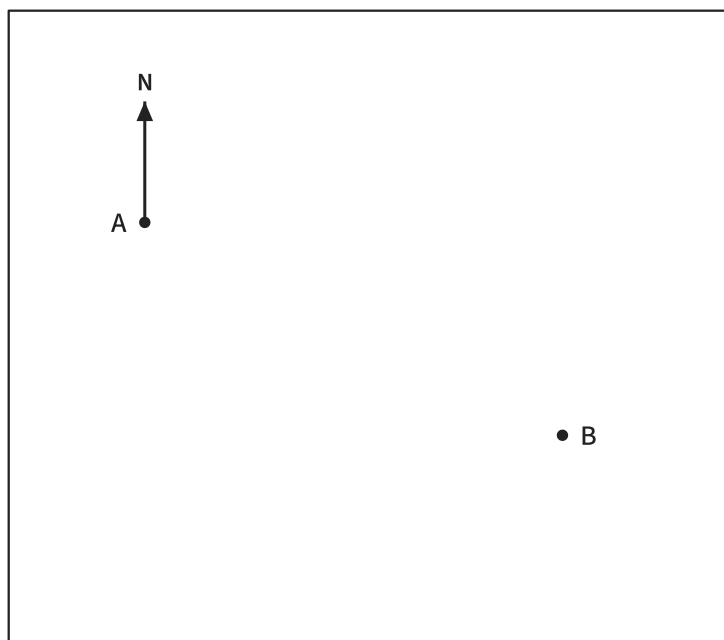
[1 mark]

2 The map shows a campsite A and a waterfall B.

Scale: 1 cm represents 2 km

Do not
write
outside
the box

(a) Measure the bearing of B from A.



Answer _____ degrees
[1 mark]

(b) Work out the distance from A to B in kilometres.

Answer _____ km
[2 marks]

- 3** The diagram shows a port, P.
A ferry leaves P on a bearing of 304°
A lighthouse, L, is 4 cm from P on a bearing of 155°



- (a) Draw a line to show the path of the ferry.

[1 mark]

- (b) Mark the position of L with a cross (×)

[1 mark]

- 4** The bearing of a harbour from a lighthouse is 038°
Leon says,
“The bearing of the lighthouse from the harbour is 322° ”

Is Leon correct?

You must show your working.

[2 marks]

- 5** The diagram shows a lighthouse, L, and a radio tower, T.
A ship, S, is on a bearing of 052° from L.
The ship is on a bearing of 285° from T.
Mark the position of S with a cross (×).

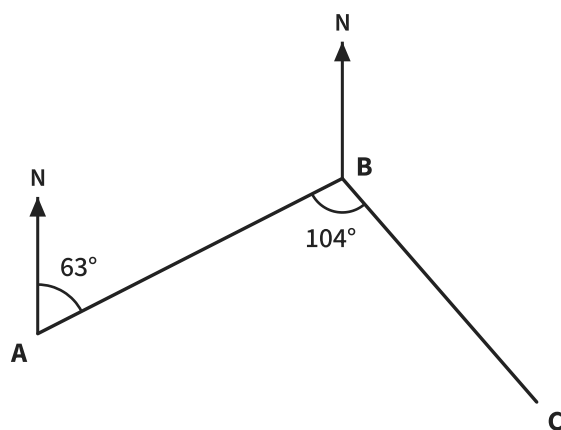
Do not
write
outside
the box



[2 marks]

- 6 B is on a bearing of 063° from A.
Angle $ABC = 104^\circ$

Do not
write
outside
the box



Not drawn accurately

Work out the bearing of C from B.

Answer _____ degrees
[3 marks]

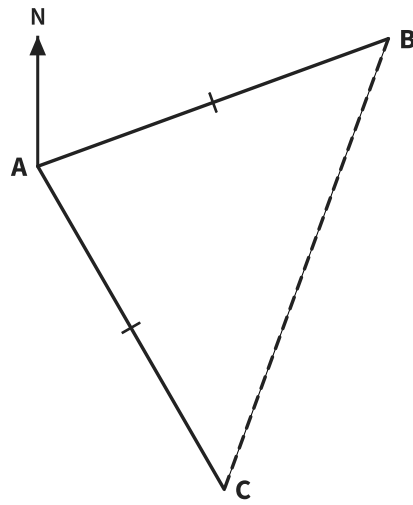
7

A, B and C are three villages.

B is on a bearing of 070° from A.

C is on a bearing of 150° from A.

$AB = AC$



Not drawn accurately

Work out the bearing of C from B.

Answer _____ degrees
[4 marks]

Do not
write
outside
the box

- 8** A boat sails from a harbour, H.
It sails 6 km on a bearing of 040° to a buoy, B.
It then sails 4 km on a bearing of 125° to a point C.

- (a)** Make an accurate scale drawing of the journey.
Use a scale of 1 cm to 1 km



[2 marks]

- (b)** Use your drawing to find the distance from C to H.

Answer _____ km

[1 mark]

- 9** The bearing of X from Y is three times the bearing of Y from X.
Both bearings are less than 360°

Work out the bearing of Y from X.

Answer _____ degrees

[3 marks]

Section B



You may use a calculator

Do not
write
outside
the box

- 10** A plane flies 120 km due north from airport A.
It then flies 85 km due east to point B.

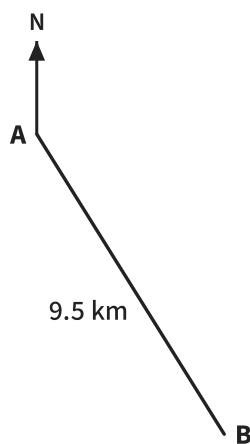
Work out the bearing of B from A.

Give your answer to the nearest degree.

Answer _____ degrees

[3 marks]

- 11** A ferry sails in a straight line from a port, A, to an island, B.
B is 9.5 km from A on a bearing of 148°



Not drawn accurately

Is the island more than 5 km east of the port?

You must show your working.

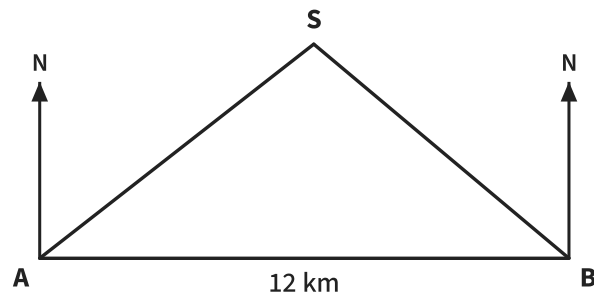
[3 marks]

12

Two coastguard stations, A and B, are 12 km apart.

B is due east of A.

A ship, S, is on a bearing of 052° from A and on a bearing of 310° from B.



Not drawn accurately

Work out the distance from A to S.

Give your answer to 1 decimal place.

Answer _____ km

[4 marks]

Do not
write
outside
the box

- 13** An orienteer runs 3.4 km from S on a bearing of 230° to a checkpoint X. She then runs 2.1 km on a bearing of 320° to the finish, F.

- (a)** Work out the distance from S to F.
Give your answer to 1 decimal place.

Answer _____ km

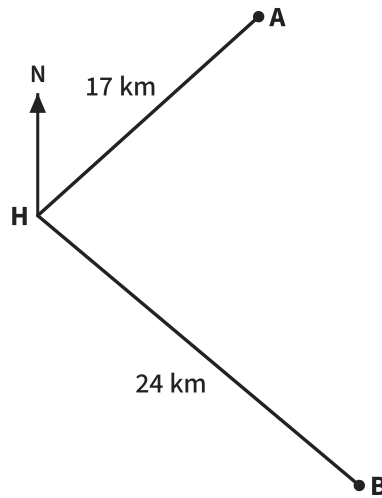
[2 marks]

- (b)** Work out the bearing of S from F.
Give your answer to the nearest degree.

Answer _____ degrees

[3 marks]

- 14** Two boats leave a harbour, H, at the same time.
At noon, boat A is 17 km from H on a bearing of 048°
At noon, boat B is 24 km from H on a bearing of 130°



Not drawn accurately

- (a)** Work out the distance between the two boats at noon.
Give your answer to 1 decimal place.

Answer _____ km

[3 marks]

- (b)** Work out the bearing of boat B from boat A.
Give your answer to the nearest degree.

Answer _____ degrees

[3 marks]

END OF QUESTIONS