

Write your name here

Surname

Other names

In the style of:
Pearson Edexcel
Level 1/Level 2 GCSE (9 - 1)

Centre Number

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Candidate Number

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Mathematics

Bearings

Foundation Tier

GCSE style questions arranged by topic

Paper Reference

1MA1/2F

You must have: Ruler graduated in centimetres and millimetres, protractor, pair of compasses, pen, HB pencil, eraser, calculator.

Total Marks

Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions.
- Answer the questions in the spaces provided – *there may be more space than you need.*
- **Calculators may be used.**
- If your calculator does not have a π button, take the value of π to be 3.142 unless the question instructs otherwise.
- Diagrams are **NOT** accurately drawn, unless otherwise indicated.
- You must **show all your working out.**



Information

- The total mark for this paper is 80
- The marks for **each** question are shown in brackets – *use this as a guide as to how much time to spend on each question.*

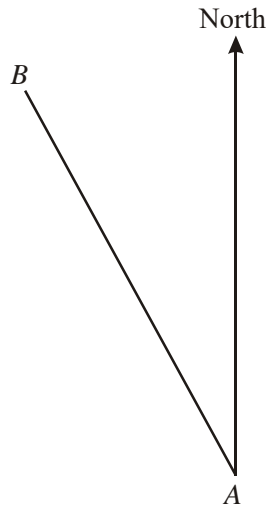
Advice

- Read each question carefully before you start to answer it.
- Keep an eye on the time.
- Try to answer every question.
- Check your answers if you have time at the end.

Turn over ►



1



(a) Measure and write down the bearing of B from A .

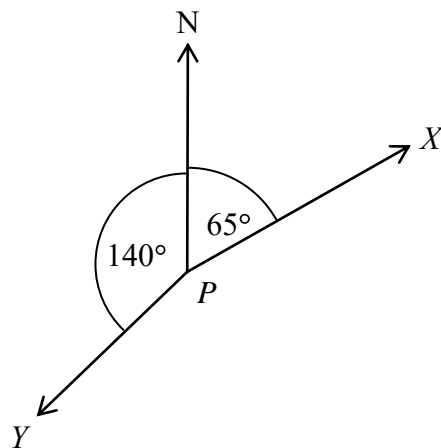
.....°
(1)

(b) On the diagram, draw a line on a bearing of 103° from A .

(1)

(Total for Question 1 is 2 marks)

2



(3)

(a) Write down the bearing of X from P .

.....°
(1)

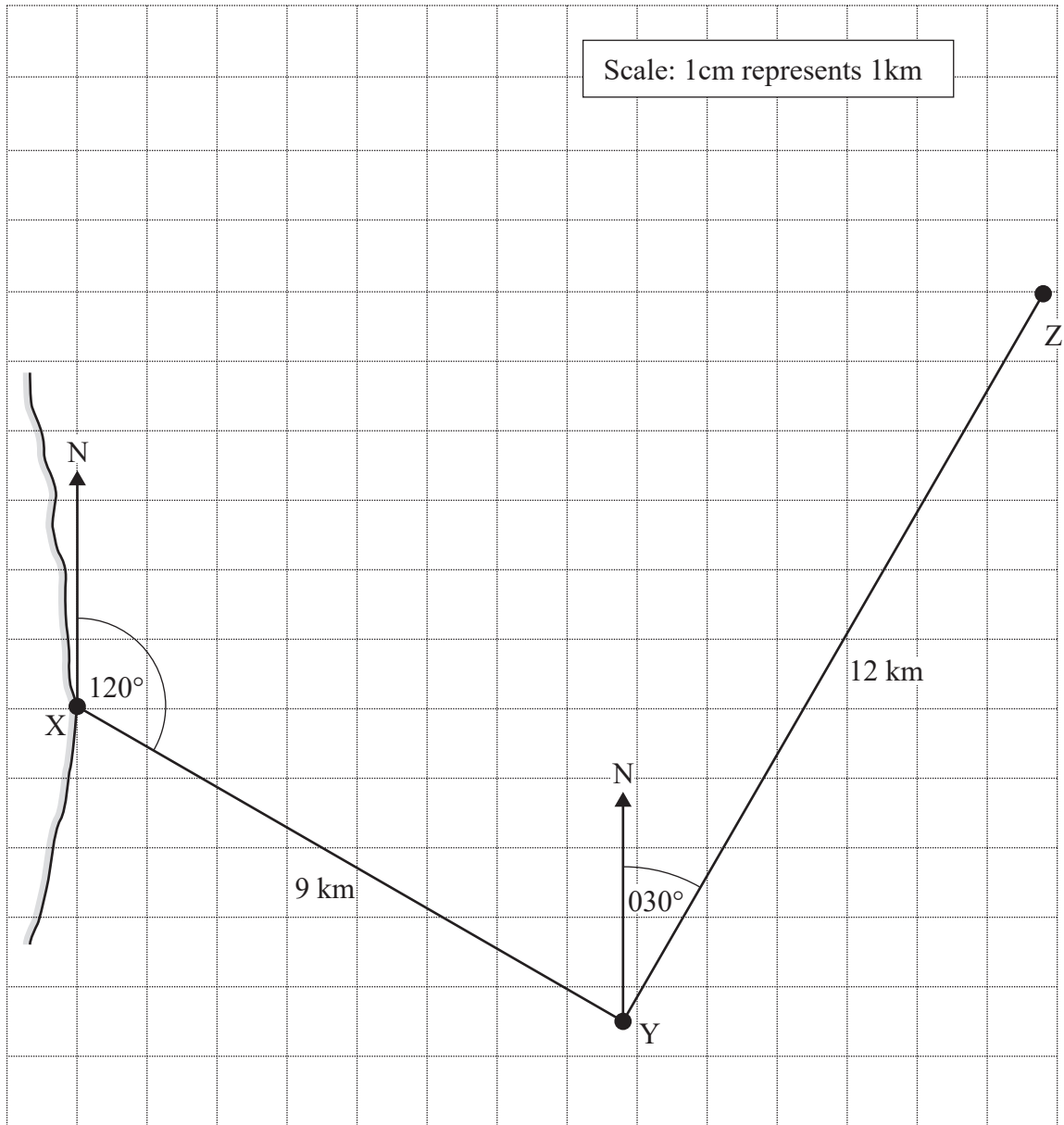
(b) Work out the bearing of Y from P .

.....°



3

A ship leaves port X and travels 9 km on a bearing of 120° to point Y. The ship then turns and travels 12 km on a bearing of 030° to point Z. This journey is shown on the scale drawing below.



The ship then turns and travels directly back from Z to X.

Use a ruler and protractor to work out the distance and bearing of the journey from Z to X

Distance km

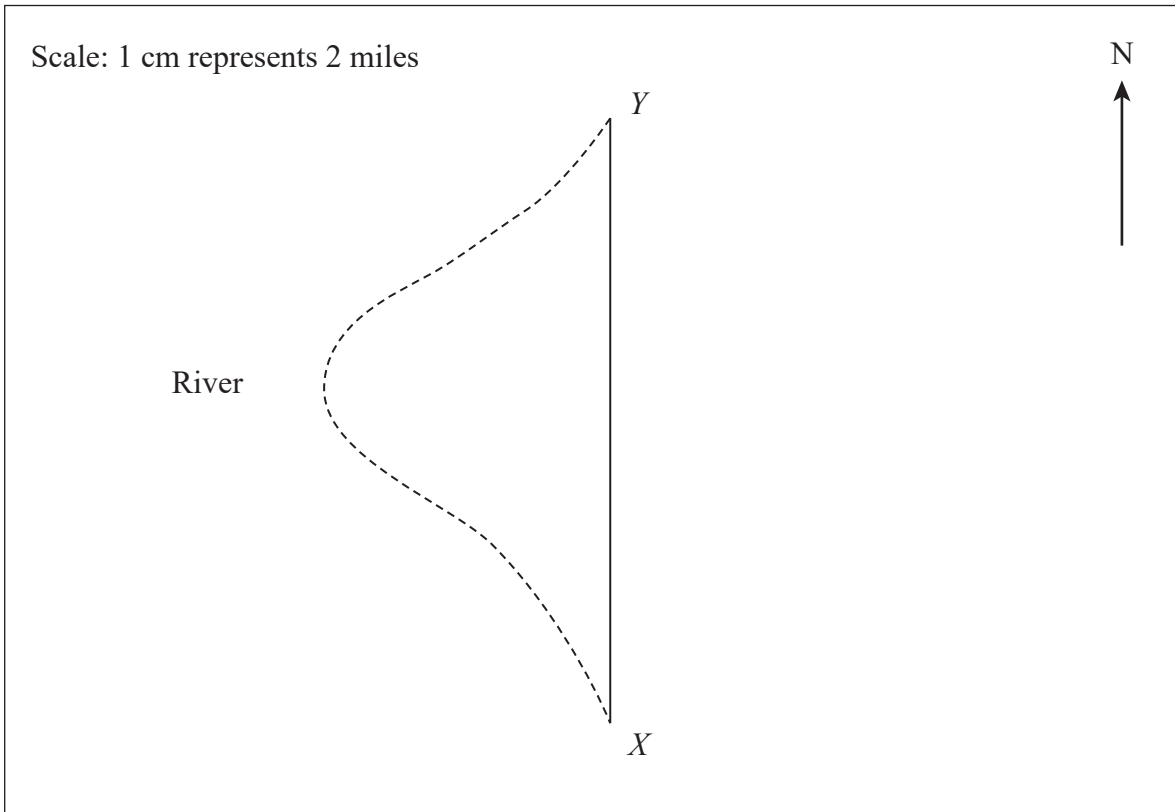
Bearing..... $^\circ$

(3)

(Total for Question 3 is 3 marks)



- 4 An helicopter flies due North from X to Y .
The distance from X to Y on the river is 24 miles.



- (a) How much further is it from X to Y on the river than by helicopter?

..... miles

(3)

- (b) Z is 12 miles north-east of X .

- (i) Write down the three-figure bearing of Z from X .

.....°

(1)

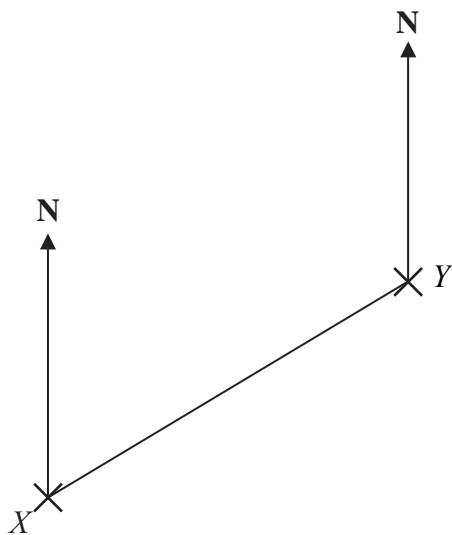
- (ii) Mark with a cross the point Z on the diagram.

(2)

(Total for Question 4 is 6 marks)



5 The diagram shows the positions of two telephone masts, X and Y , on a map.



(a) Measure the bearing of Y from X .

.....^o
(1)

Another mast Z is on a bearing of 160° from Y .

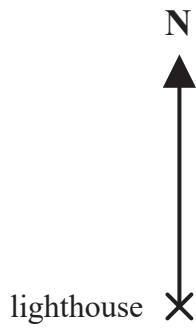
On the map, Z is 4 cm from Y .

(b) Mark the position of Z with a cross (X) and label it Z .

(2)



- 6 The diagram shows part of a map.
It shows the positions of a lighthouse and a boat.



The scale of the map is 1:10 000

- (a) Work out the real distance between the lighthouse and the boat.
Give your answer in metres.

..... m (2)

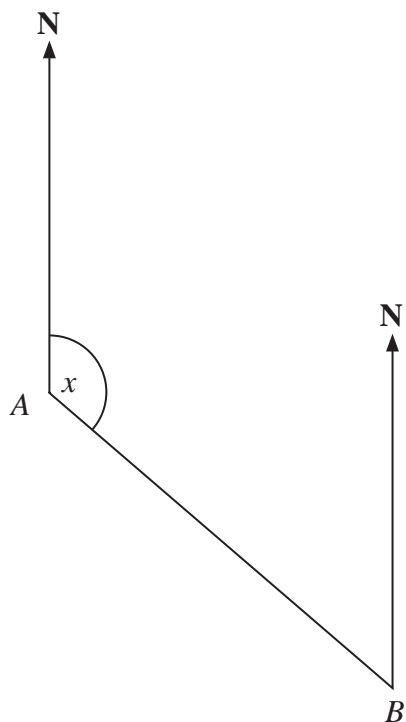
- (b) Find the bearing of the lighthouse from the boat.

..... (1)

(Total for Question 6 is 3 marks)



- 7 The diagram shows the position of two ports, *A* and *B*.
A ship sails from port *A* to port *B*.



Scale: 1 cm represents 50 km

- (a) Measure the size of the angle marked *x*.

..... ° (1)

- (b) Work out the real distance between port *A* and port *B*.
Use the scale 1 cm represents 50 km.

..... km (2)

Port *C* is 350 km on a bearing of 060° from port *B*.

- (c) On the diagram, mark airport *C* with a cross (×).
Label it *C*.

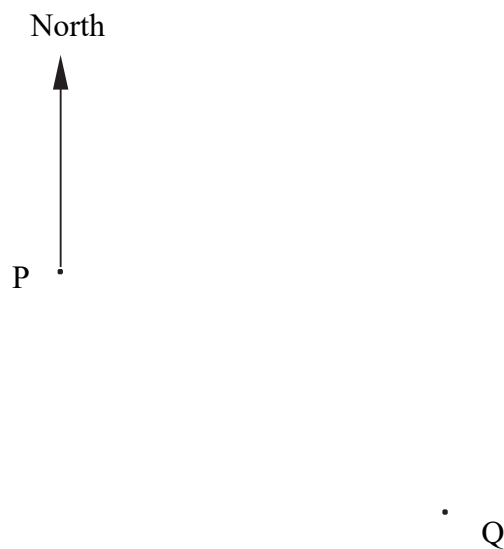
(2)

(Total for Question 7 is 5 marks)



- 8 Peter keeps bees in two beehives.
They are marked P and Q in the scale drawing below.

Scale: 1 cm represents 50 metres



- (a) If Peter walks at about 2 m/s, estimate how long it takes him to walk from beehive P to beehive Q.

(a)

(3)



(b) Bees can indicate to other bees where flowers are.

A bee indicates that there are flowers

- on a bearing of 055° from P
- at a distance of 400 m from P.

On the scale drawing, show the point where the flowers are.
Label this point F.

(2)

(c) Peter plants some fruit trees, which are

- the same distance from P and from Q
- 200 m or less from P.

Indicate on the scale drawing where Peter plants the trees.
You must show all your construction lines.

(4)

(Total for Question 8 is 9 marks)



9 The diagram shows the positions of a tower and a tree.

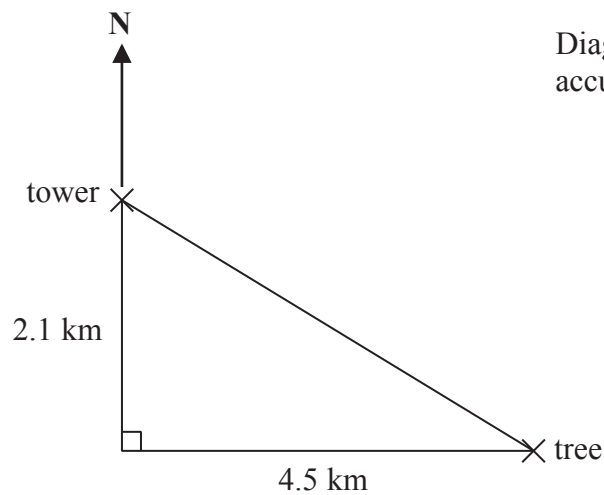


Diagram **NOT**
accurately drawn

The tree is 2.1 km South of the tower and 4.5 km East of the tower.

- (a) Work out the distance between the tower and the tree.
Give your answer correct to one decimal place.

(3)

- (b) Work out the bearing of the tree from the tower.
Give your answer correct to the nearest degree.

.....
(4)

(Total for Question 9 is 7 marks)



10 The diagram shows the position of town A .



Scale: 1 cm represents 10 km

Town B is 64 km from town A on a bearing of 070° .

Mark the position of town B , with a cross (\times).

Use a scale of 1 cm represents 10 km.

(Total for Question 10 is 2 marks)



11 The diagram shows the position of two boats, *B* and *C*.



Boat *T* is on a bearing of 060° from boat *B*.
Boat *T* is on a bearing of 285° from boat *C*.

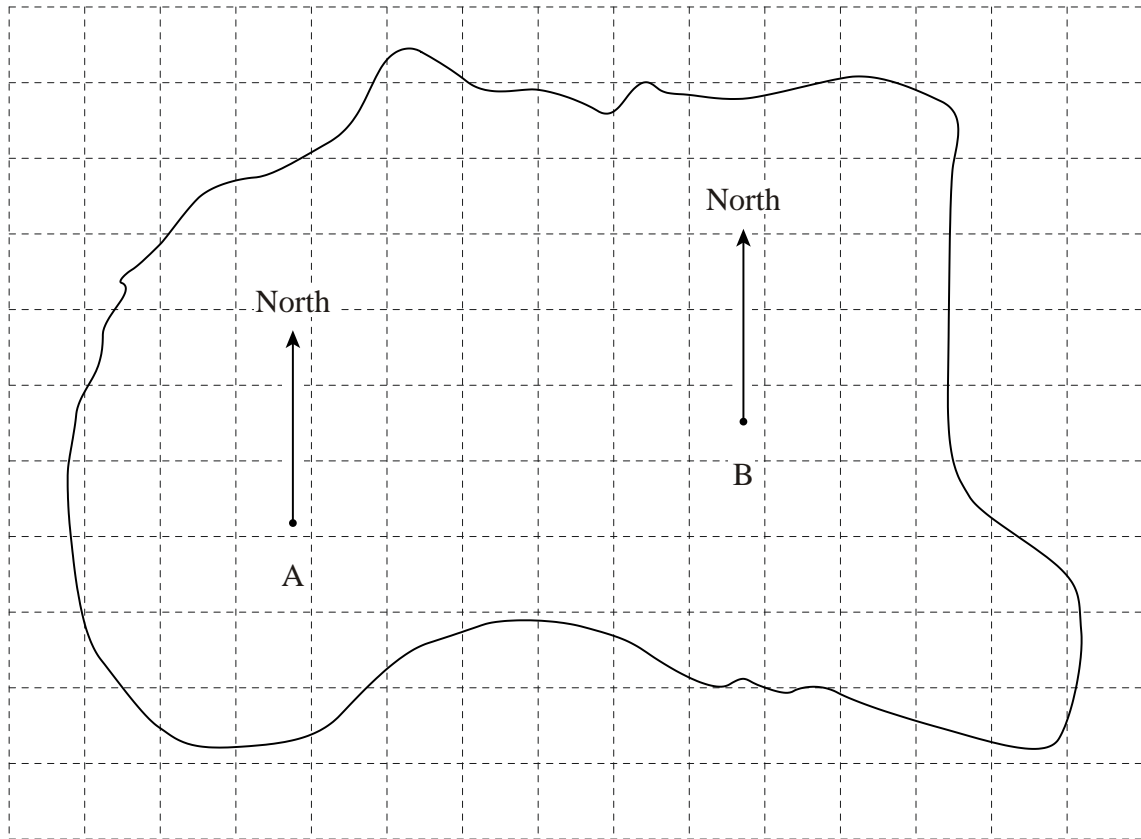
In the space above, draw an accurate diagram to show the position of boat *T*.
Mark the position of boat *T* with a cross (×).
Label it *T*.

(Total for Question 11 is 3 marks)



12 The diagram shows an island with North lines drawn at points A and B.

Scale: 1 cm to 5 km



(a) Treasure is buried on a bearing of 037° from A and 290° from B. Mark, with a \times , the position of the treasure.

(3)

(b) Find the real distance between the points A and B.

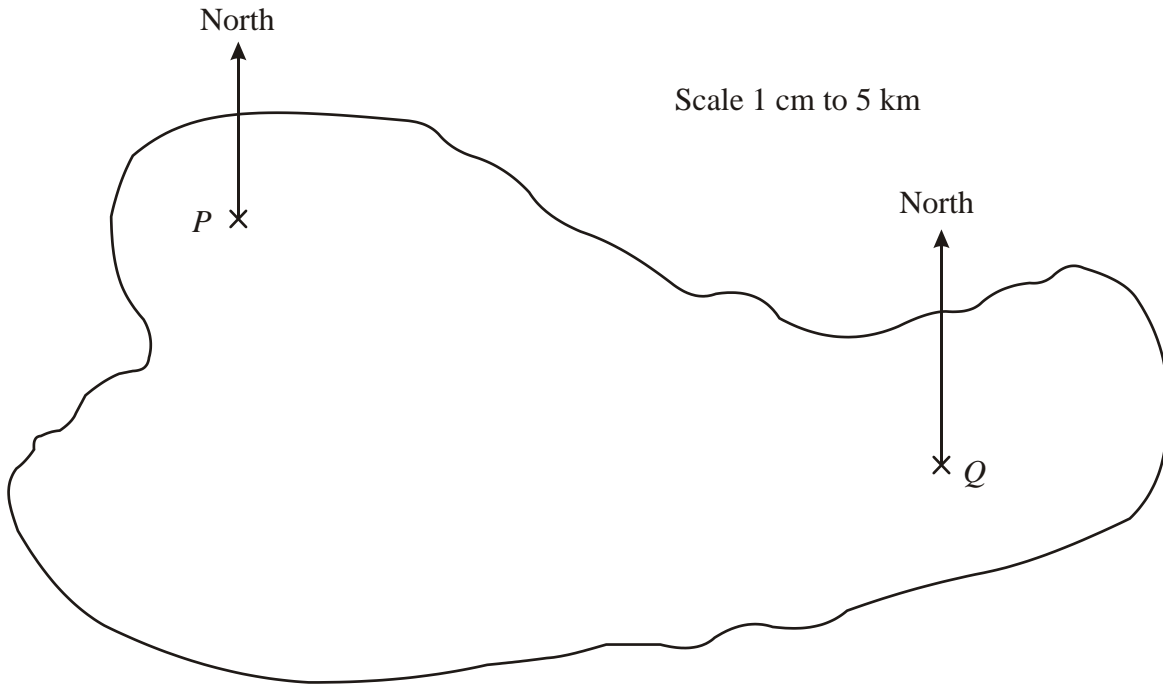
Answer km

(3)

(Total for Question 12 is 6 marks)



13 The map of an island is shown.



P and Q are the positions of two houses on the island.

(a) What is the bearing of P from Q ?

Answer

(1)

(b) Calculate the actual distance from P to Q in kilometres.

Answerkm

(2)

(c) A house is 20 km from P on a bearing of 130° .
Mark the position of the house on the diagram with an X .

(2)

(Total for Question 13 is 5 marks)

