

Write your name here

Surname

Other names

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

Centre Number

--	--	--	--	--

Candidate Number

--	--	--	--

# 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  $\pi$  button, take the value of  $\pi$  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.*

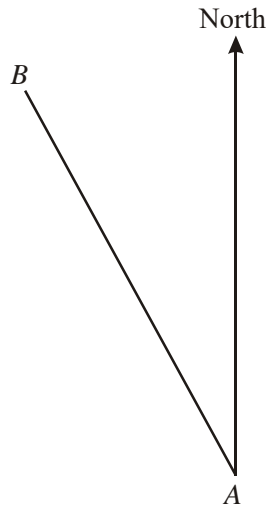
### Advice

- 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  $A$ .

.....<sup>o</sup>  
(1)

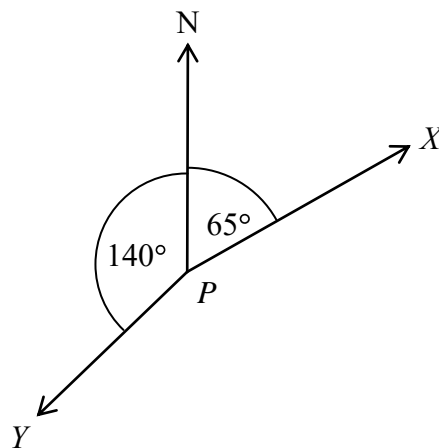
(b) On the diagram, draw a line on a bearing of  $103^{\circ}$  from  $A$ .

(1)

**(Total for Question 1 is 2 marks)**

---

2



(3)

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

.....<sup>o</sup>  
(1)

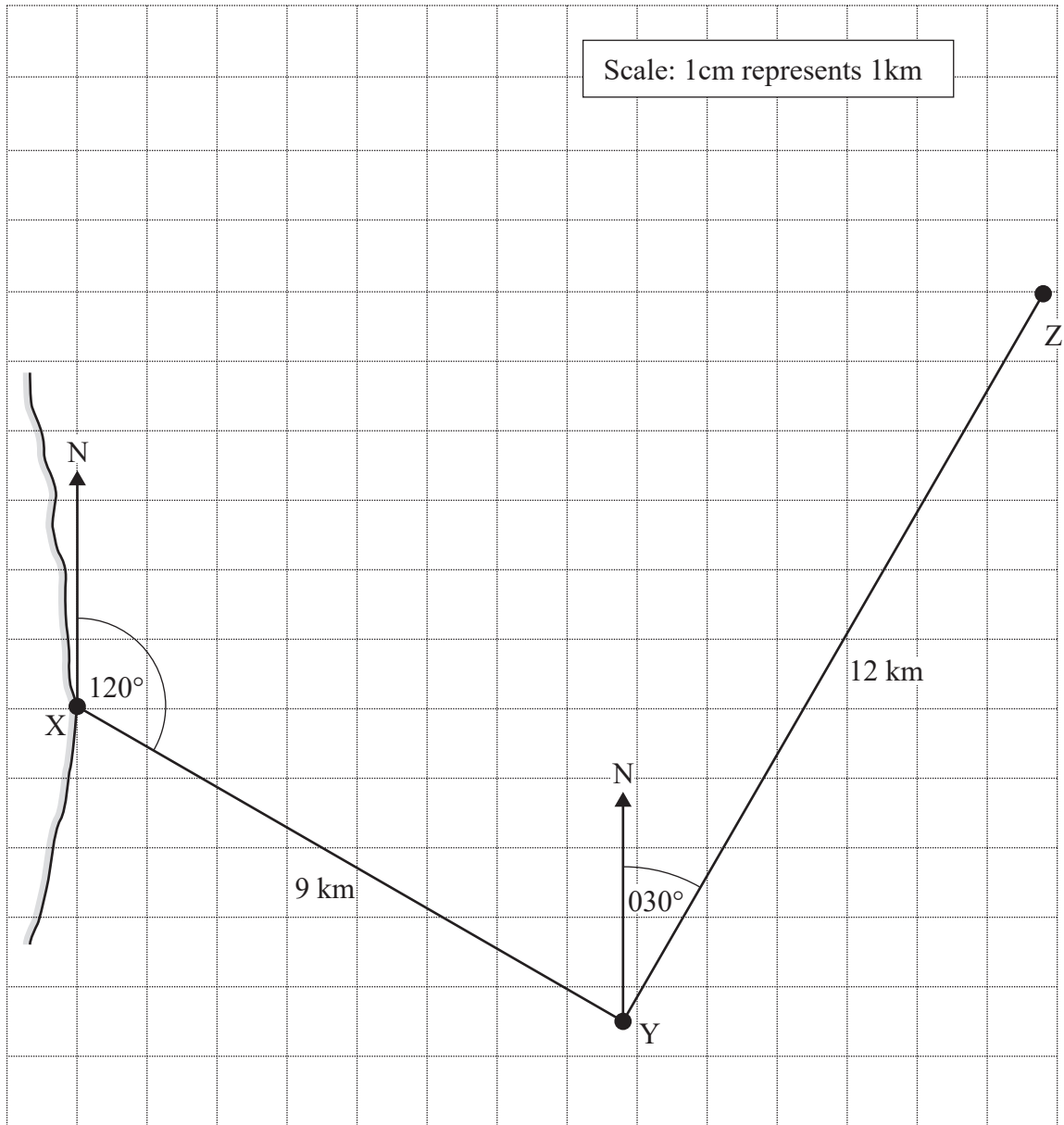
(b) Work out the bearing of  $Y$  from  $P$ .

.....<sup>o</sup>



3

A ship leaves port X and travels 9 km on a bearing of  $120^\circ$  to point Y. The ship then turns and travels 12 km on a bearing of  $030^\circ$  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

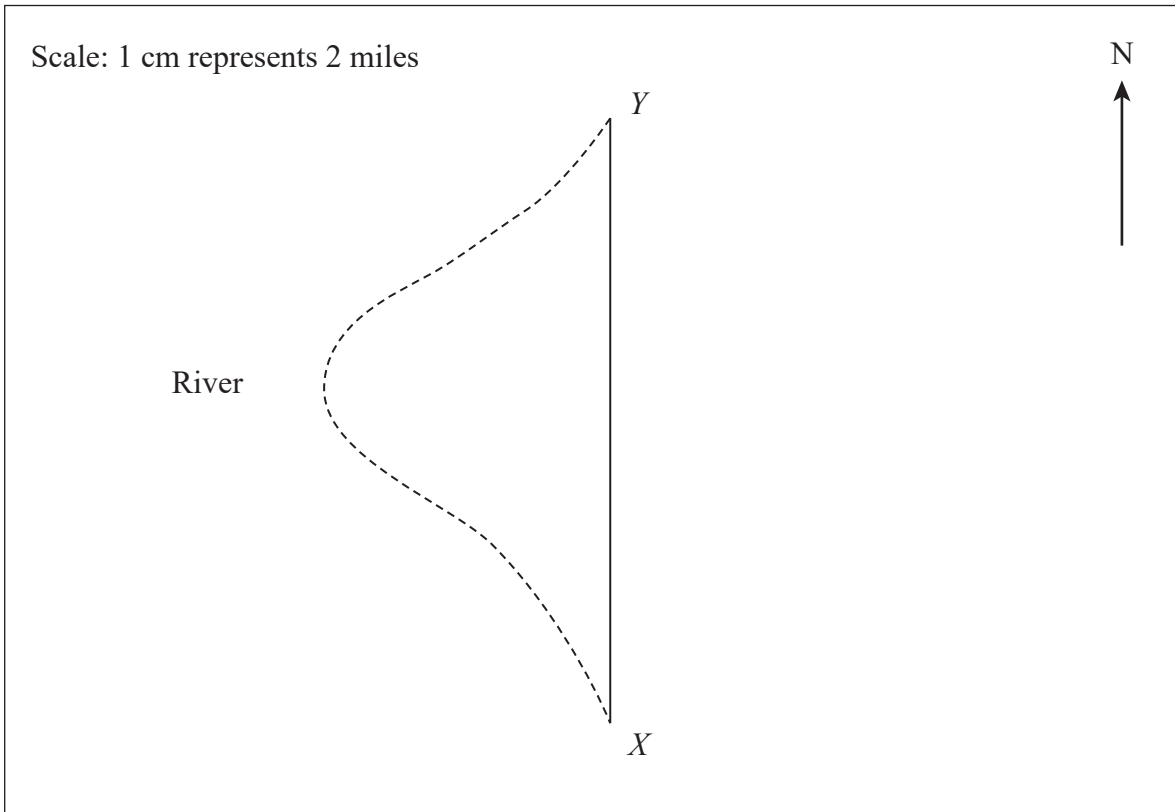
Bearing..... $^\circ$

(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)

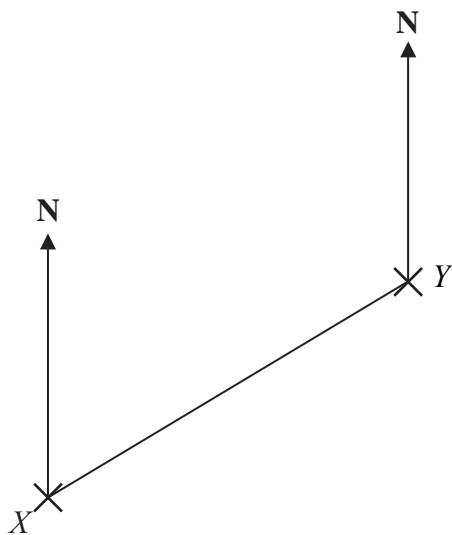
- (ii) Mark with a cross the point  $Z$  on the diagram.

(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  $X$ .

.....<sup>o</sup>  
(1)

Another mast  $Z$  is on a bearing of  $160^\circ$  from  $Y$ .

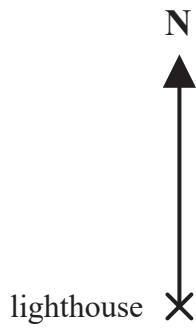
On the map,  $Z$  is 4 cm from  $Y$ .

(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)

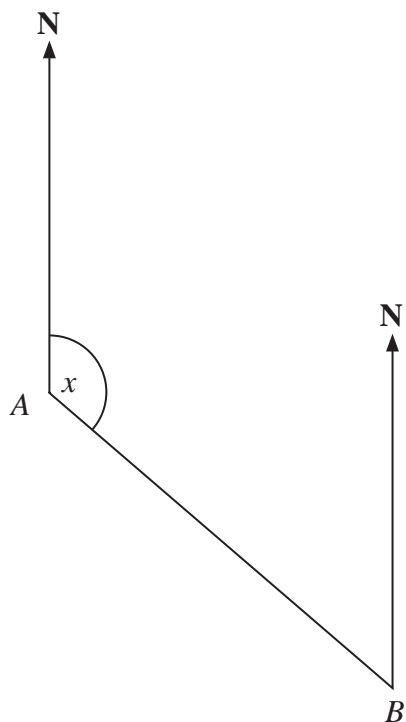
- (b) Find the bearing of the lighthouse from the boat.

..... (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*.

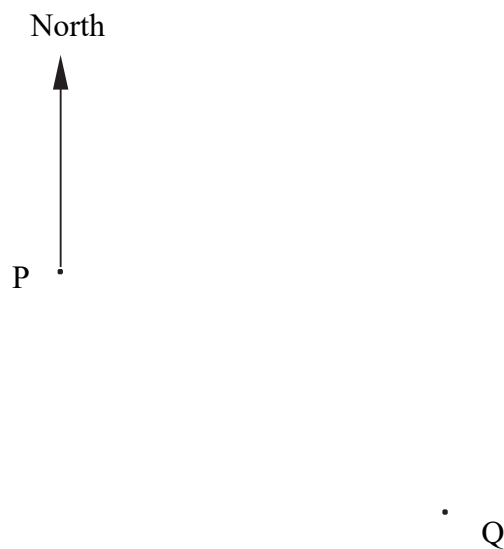
(2)

**(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  $055^\circ$  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.

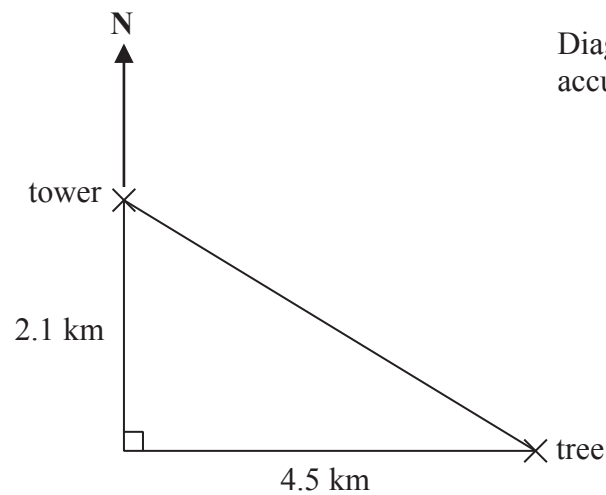
Indicate on the scale drawing where Peter plants the trees.  
You must show all your construction lines.

(4)

**(Total for Question 8 is 9 marks)**



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



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  $070^\circ$ .

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  $060^\circ$  from boat *B*.  
Boat *T* is on a bearing of  $285^\circ$  from boat *C*.

In the space above, draw an accurate diagram to show the position of boat *T*.

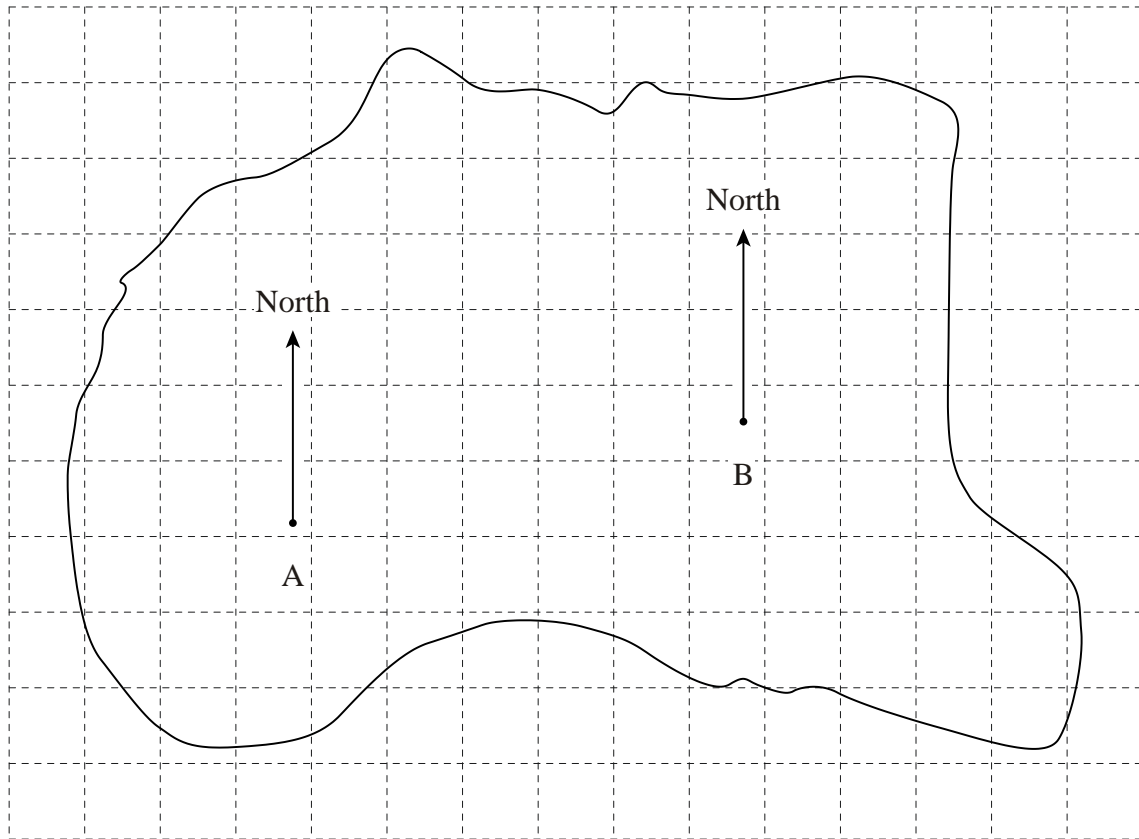
Mark the position of boat *T* with a cross (×).  
Label it *T*.

**(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  $037^\circ$  from A and  $290^\circ$  from B. Mark, with a  $\times$ , the position of the treasure.

(3)

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

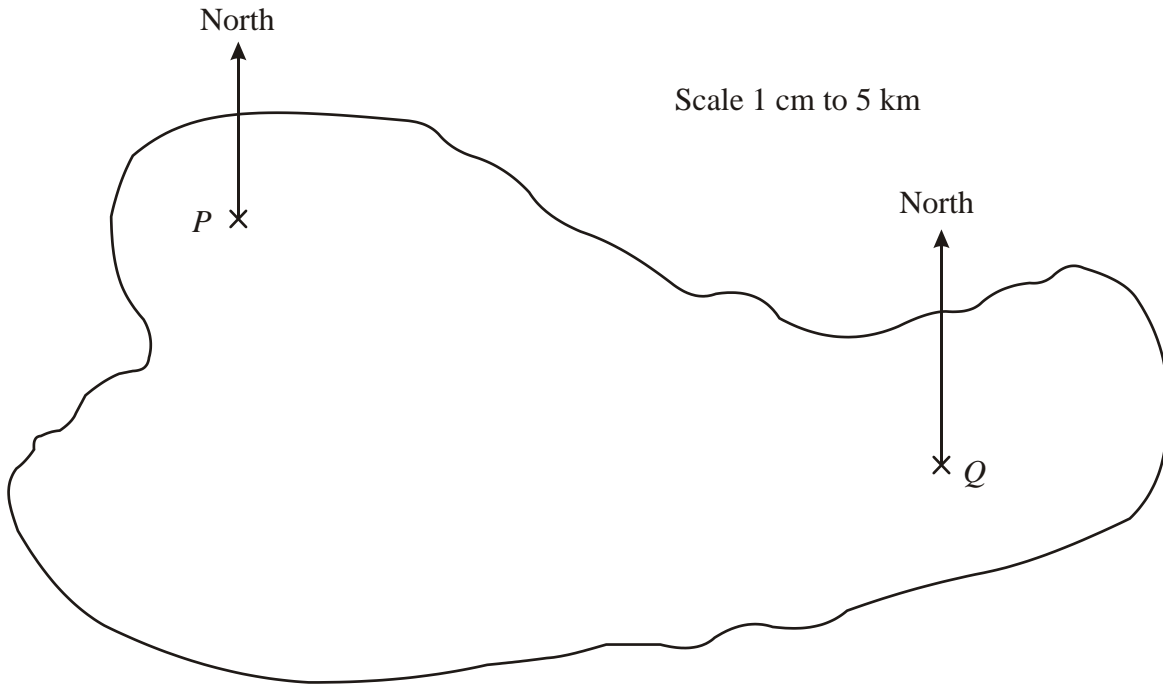
Answer ..... km

(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.

Answer .....km

(2)

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

(2)

(Total for Question 13 is 5 marks)

