Name ANSWERS	Class

MATHS TEACHER HUB

www.MathsTeacherHub.com

Bearings

(9 – 1) Topic booklet

Higher

These questions have been collated from previous years GCSE Mathematics papers.

You must have: Ruler graduated in centimetres and millimetres, protractor, pair of compasses, pen, HB pencil, eraser.	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.*
- Diagrams are NOT accurately drawn, unless otherwise indicated.
- You must **show all your working out.**
- If the question is a **1H** question you are not allowed to use a calculator.
- If the question is a **2H** or a **3H** question, you may use a calculator to help you answer.

Information

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

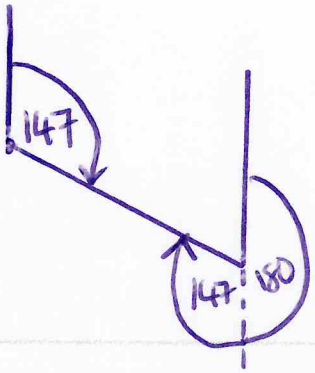
Advice

- 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.

Answer ALL questions
Write your answers in the space provided.
You must write down all the stages in your working.

6 The bearing of port B from port A is 147°

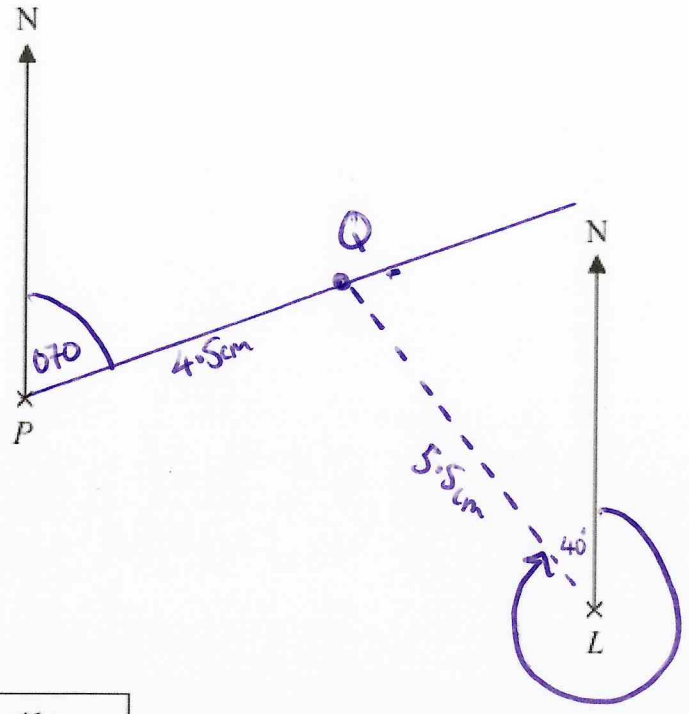
Work out the bearing of port A from port B.



327 °

(Total for Question 6 is 2 marks)

8 The accurate scale drawing shows the positions of port P and a lighthouse L.



QL = 5·5cm
= 22km

Scale: 1 cm represents 4 km.

Aleena sails her boat from port P on a bearing of 070°

She sails for $1\frac{1}{2}$ hours at an average speed of 12 km/h to a port Q.

Find

(i) the distance, in km, of port Q from lighthouse L,

(ii) the bearing of port Q from lighthouse L.

$12 \times \frac{3}{2} = 18\text{km}$

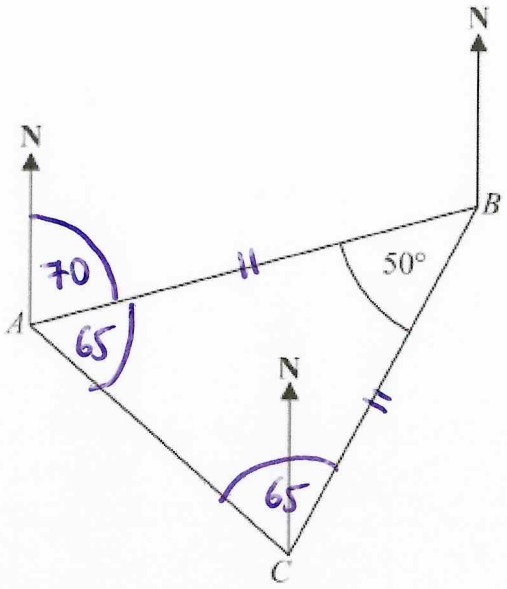
1cm = 4k
4·5cm = 18km

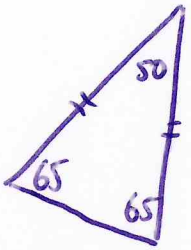
distance QL = 22 km

bearing of Q from L = 320 °

(Total for Question 8 is 5 marks)

9 The diagram shows the positions of three points, A, B and C, on a map.

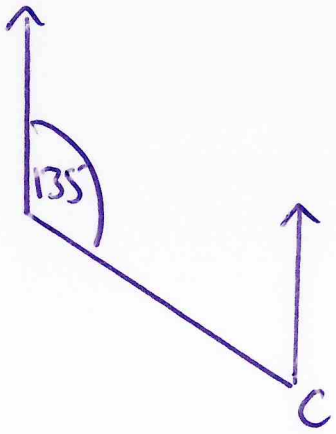




The bearing of B from A is 070°

Angle ABC is 50°
$AB = CB$

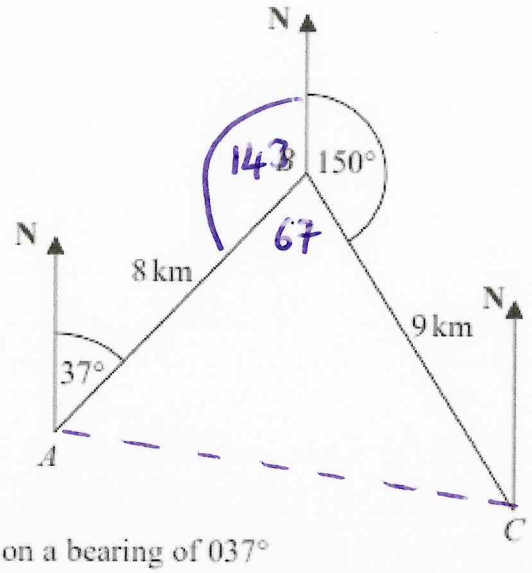
Work out the bearing of C from A.



135 °

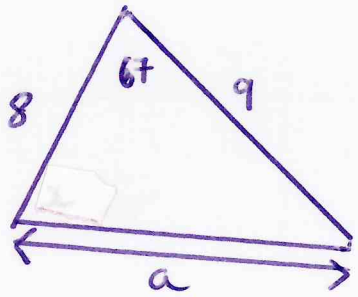
(Total for Question 9 is 3 marks)

23 The diagram shows the positions of three towns, Acton (A), Barston (B) and Chorlton (C).



Barston is 8 km from Acton on a bearing of 037°
Chorlton is 9 km from Barston on a bearing of 150°

Find the bearing of Chorlton from Acton.
Give your answer correct to 1 decimal place.
You must show all your working.

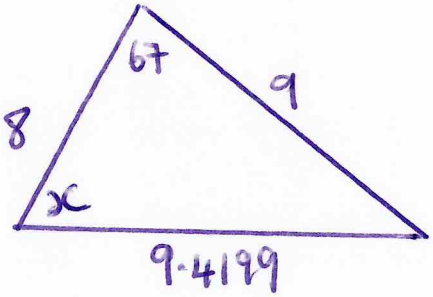


$a^2 = b^2 + c^2 - 2bc\cos A$

$a^2 = 9^2 + 8^2 - 2 \times 9 \times 8 \times \cos(67)$

$a^2 = 88.73$

$a = 9.4199\text{ km}$



$\frac{\sin x}{9} = \frac{\sin 67}{9.4199}$

$x = \sin^{-1}\left(\frac{\sin 67}{9.4199}\right) \times 9$

$x = 61.57880541°$

$x + 37°$

098.6°

(Total for Question 23 is 5 marks)