Bearings, Scale Drawing & Constructions
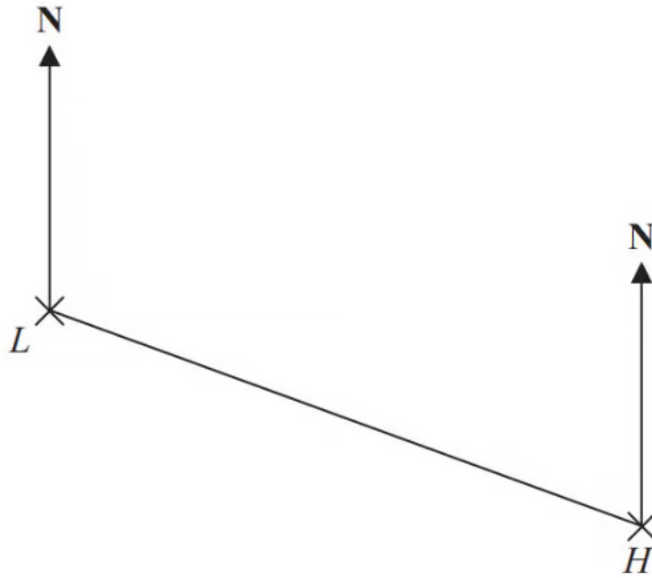
Question Paper

Course	Edexcel IGCSE Maths
Section	4. Geometry & Trigonometry
Topic	Bearings, Scale Drawing & Constructions
Difficulty	Medium

Time allowed: 40

Score: /33

Percentage: /100

Question 1a

The diagram shows the position of a lighthouse L and a harbour H.

The scale of the diagram is 1 cm represents 5 km.

Work out the real distance between L and H.

[1 mark]

Question 1b

Measure the bearing of H from L.

[1 mark]

Question 1c

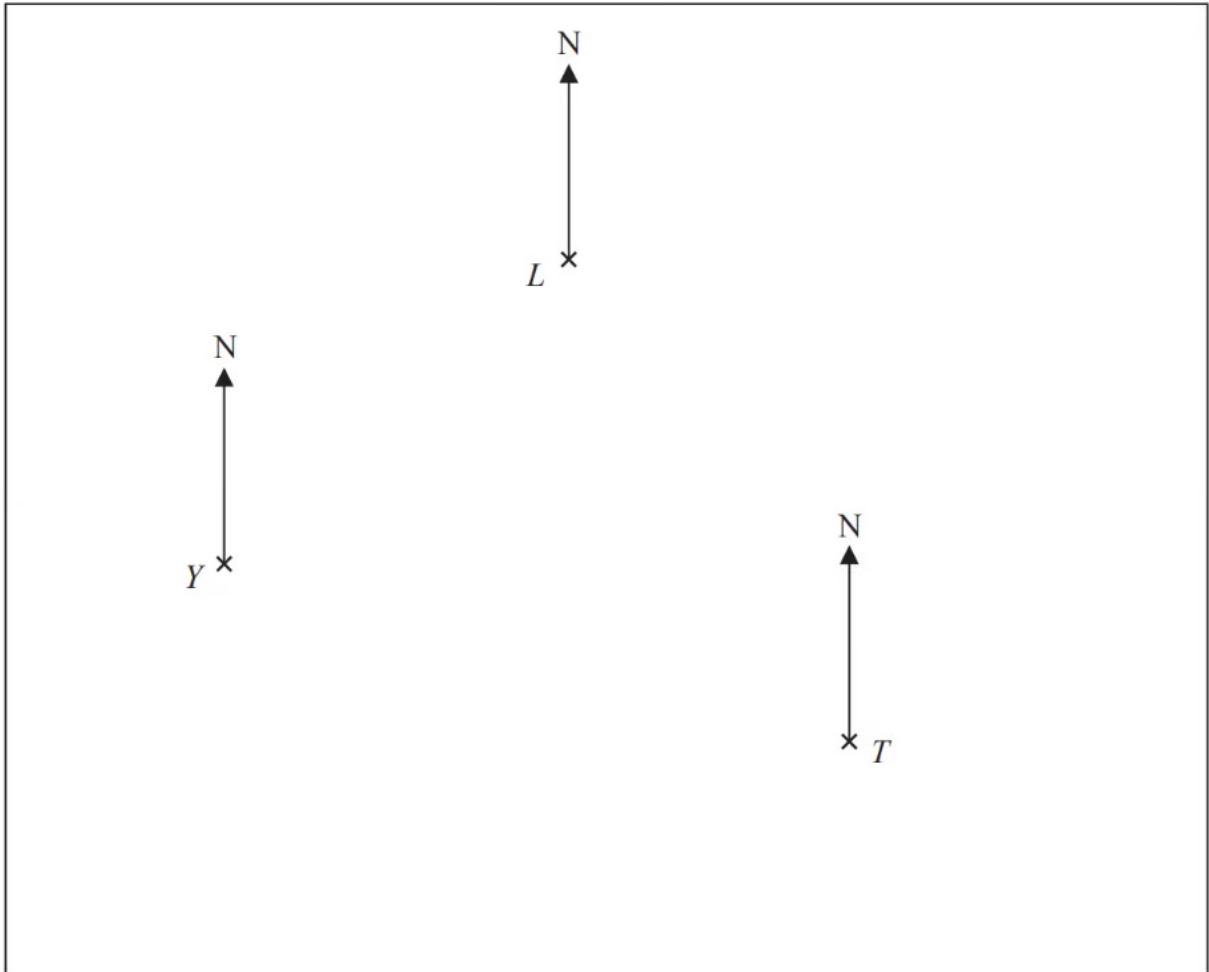A boat B is 20km from H on a bearing of $040°$.

On the diagram, mark the position of boat B with a cross (x).
Label it B.

[2 marks]

Question 2a

The diagram shows the positions of a lighthouse L, a yacht Y and a tanker T on a map.

Scale 1 cm represents 10 km

Measure the bearing of L from Y.

[1 mark]

Question 2b

The tanker, T, sails 80 km on a bearing of $320°$.

Find the distance, in km, between the tanker and the lighthouse when the tanker is closest to the lighthouse.

[2 marks]

Question 3

The diagram shows the position of two churches, A and B.

N

↑

×
A

N

↑

×
B

Church C is on a bearing of $130°$ from church A.
Church C is on a bearing of $245°$ from church B.

In the space above, draw an accurate diagram to show the position of church C.

Mark the position of church C with a cross (×).
Label it C.
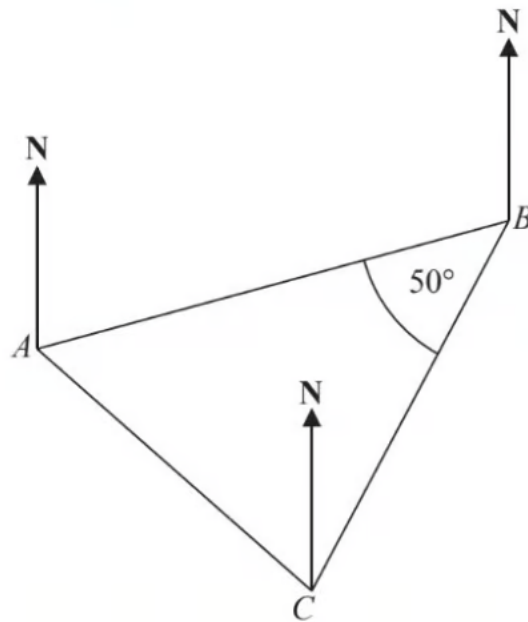
[3 marks]

Question 4

$$A \text{———————————} B$$

Use ruler and compasses to **construct** the perpendicular bisector of the line segment AB.
You must show all your construction lines.

[2 marks]

Question 5

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

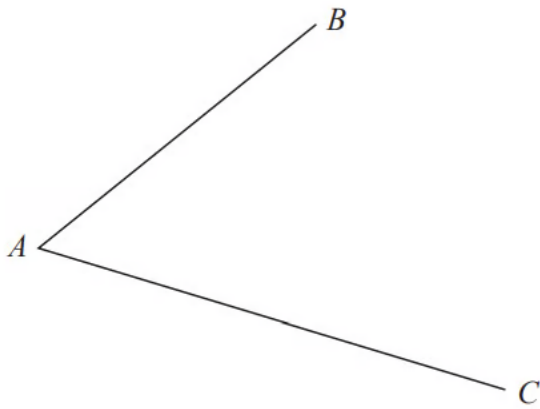The bearing of B from A is 070°

Angle ABC is 50°
$AB = CB$

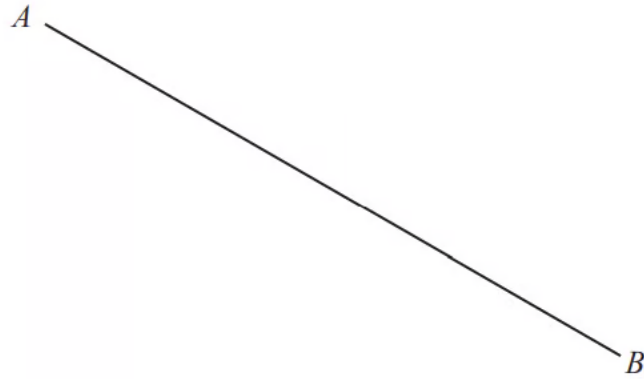Work out the bearing of C from A.

[3 marks]

Question 6

Use ruler and compasses to construct the bisector of angle BAC.
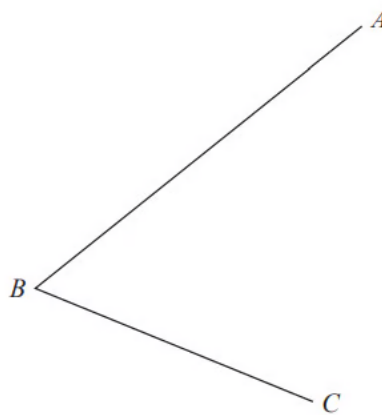You must show all your construction lines.

[2 marks]

Question 7

Use ruler and compasses only to construct the perpendicular bisector of the line AB.
You must show all your construction lines.

A

B

[2 marks]

Question 8

Using ruler and compasses only, construct the bisector of angle ABC.
You must show all your construction lines.

A

B

C

[2 marks]

Question 9a

The scale drawing shows the position of a hall and the position of a library.

Scale: 1 cm represents 20 metres

A post box is 140 metres from the library on a bearing of 220°

Show the position of the post box on the scale drawing.
Mark the position with a cross (×) and label it P.

[2 marks]

Question 9b

Use your scale drawing to find

i)
the real distance, in metres, of the hall from the post box,

ii)
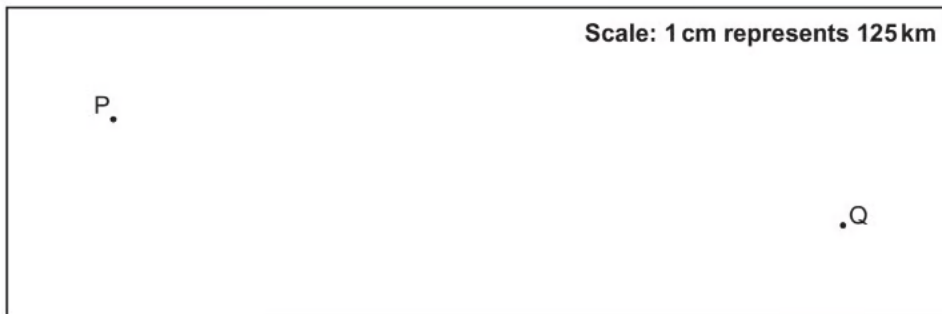the bearing of the hall from the post box.

[2]

[2 marks]

Question 10

Use ruler and compasses to construct the perpendicular bisector of the line DE.
You must show all your construction lines.

D _____ E

Question 11a

The scale diagram below shows two cities, P and Q.

Scale: 1 cm represents 125 km

P.

.Q

A plane departs from P at 09 47 and arrives at Q at 12 07.

Work out the average speed, in kilometres per hour, of the plane.

.... km/h

[5 marks]

Question 11b

Give one reason why your answer may be inaccurate.

[1 mark]