Centre Number						Candidate Number				
Surname										
Other Names										
Candidate Signature										

For Examiner's Use	
Examiner's Initials	
Pages	Mark
2–3	
4–5	
6–7	
8–9	
10–11	
TOTAL	

In the style of

AQA

General Certificate of Secondary Education
Foundation Tier

Mathematics 43601F

Past Paper Questions by Topic

Bearings

F

For this paper you must have: • mathematical instruments. You must **not** use a calculator.	

Time allowed
- 1 hour 15 minutes

Instructions
- Use black ink or black ball-point pen. Draw diagrams in pencil.
- Fill in the boxes at the top of this page.
- Answer **all** questions.
- You must answer the questions in the spaces provided. Do not write outside the box around each page or on blank pages.
- Do all rough work in this book.

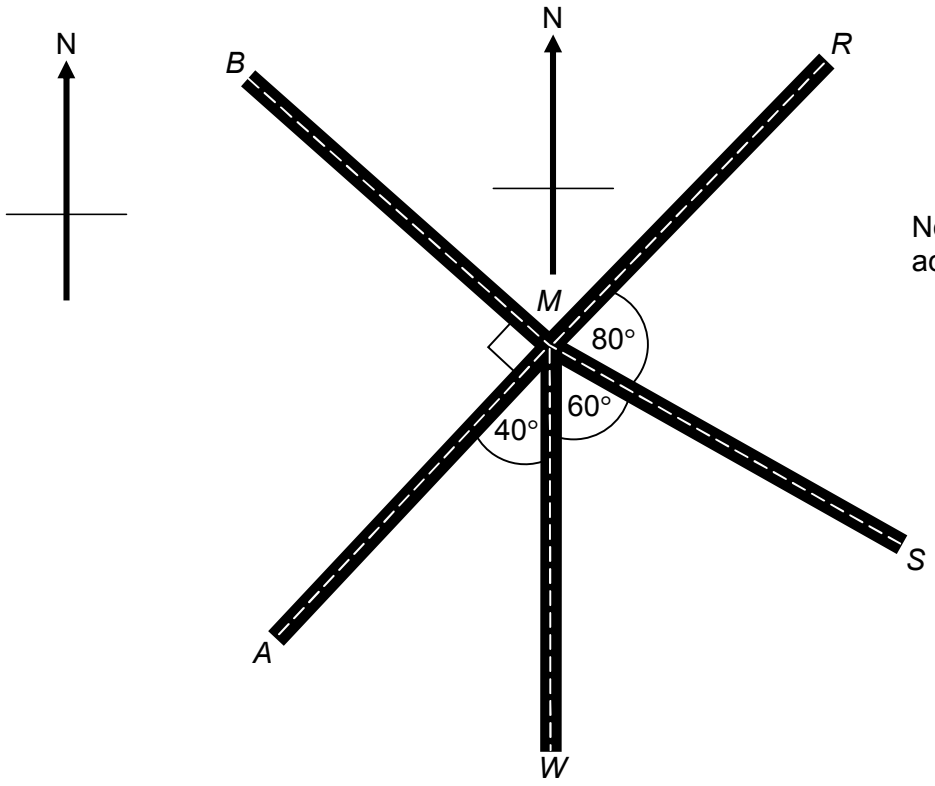
Information
- The marks for questions are shown in brackets.
- The quality of your written communication is specifically assessed in questions indicated with an asterisk (*)
- You may ask for more answer paper and graph paper. These must be tagged securely to this answer booklet.

Advice
- In all calculations, show clearly how you work out your answer.

by Peter Bland

✶**1** Five roads meet at *M*.

W is due South of *M*.



Not drawn accurately

1 (a) Is *AMR* a straight line?

Tick a box.

☐ Yes ☐ No

Show how you decide.

.....

.....

(1 mark)

1 (b)(i) What is the bearing of R from *M*?

.....

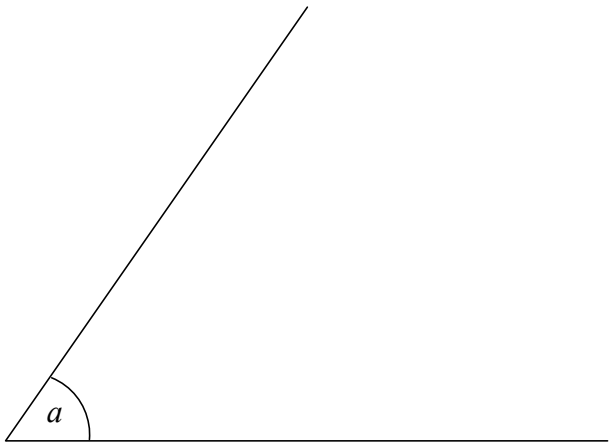
Answer ..... ° *(2 marks)*

1 (b)(ii) What is the bearing of *M* from *R*.

.....

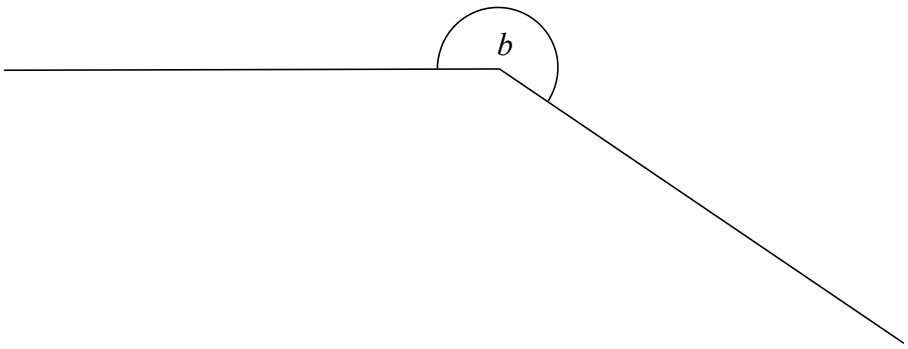
Answer ..... ° *(2 marks)*

2 (a) Measure the acute angle a.



Answer ..... degrees *(1 mark)*

2 (b) Use measurements to work out the size of angle b.



.....

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Answer ..... degrees *(2 marks)*

2 (c) An acute angle and an obtuse angle fit together to make an angle of 200°

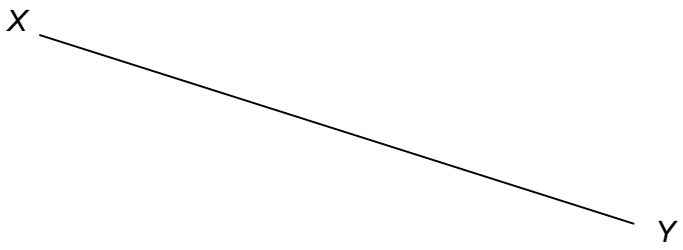
Work out two possible values for the angles

.....

Answer .....degrees and..... degrees *(2 marks)*

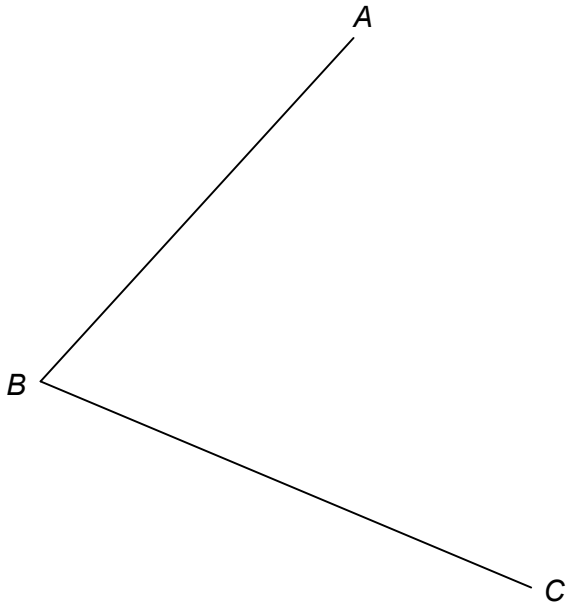
3 Use a ruler and compasses in this question.
Remember to show all construction lines and arcs clearly.

3 (a) Construct the perpendicular bisector of *XY.*



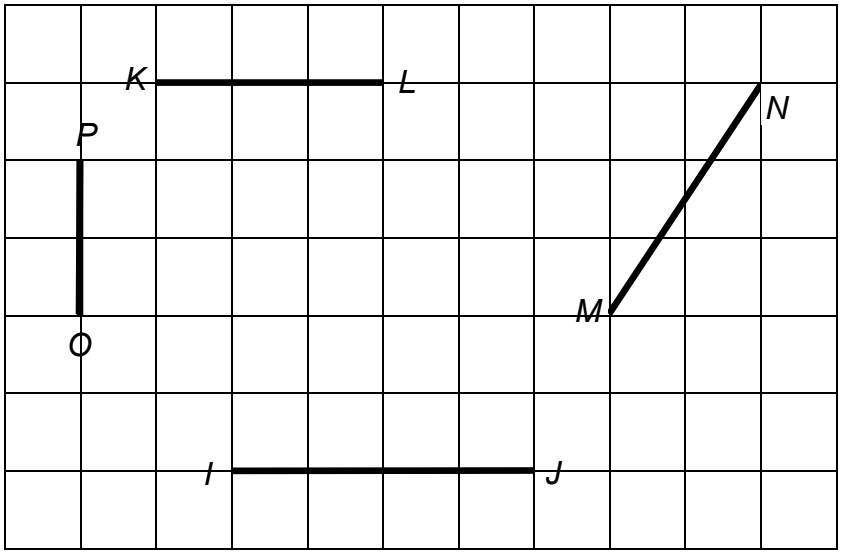
(2 marks)

3 (b) Construct the angle bisector of the angle *ABC*.



(2 marks)

4 Here are some lines drawn on a grid.



4 (a) Measure the length of *MN*.

Answer ..... cm (*1 mark*)

4 (b) Which line is parallel to *KL*.

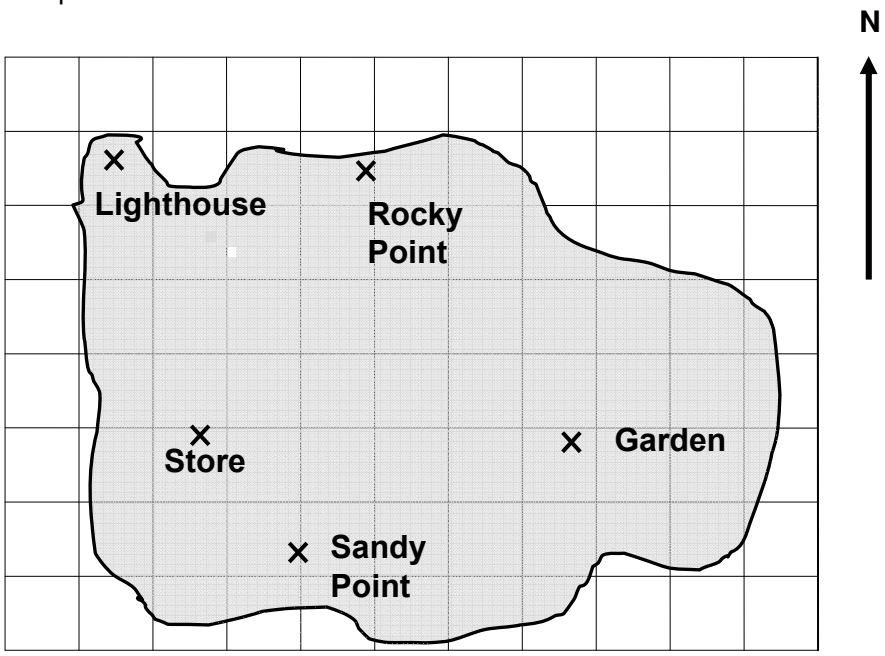
Answer ..... (*1 mark*)

4 (c) Draw a line at right angles to *IJ*.

(*1 mark*)

5 The diagram shows the map of an island drawn on a grid.

Each square represents 10 000 m².



5(a) Estimate the area of the island.

Give your answer in square metres.

.....

.....

.....

.....

.....

.....

Answer ..... m² (*4 marks*)

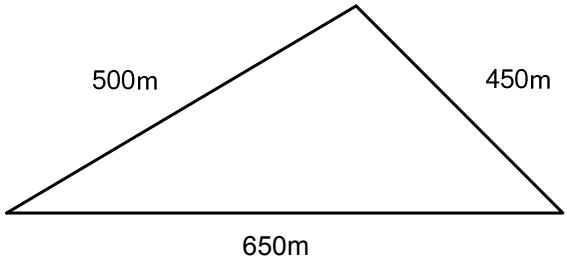
5(b) Measure the bearing of Sandy Point from Rocky Point.

Answer ……..... (*1 mark*)

5(c) A Football Stadium is on a bearing of 200° from Rocky Point and 070° from the Store

Mark with a cross the position of the Football Stadium on the map. (*3 marks*)

6 Here is a triangle.

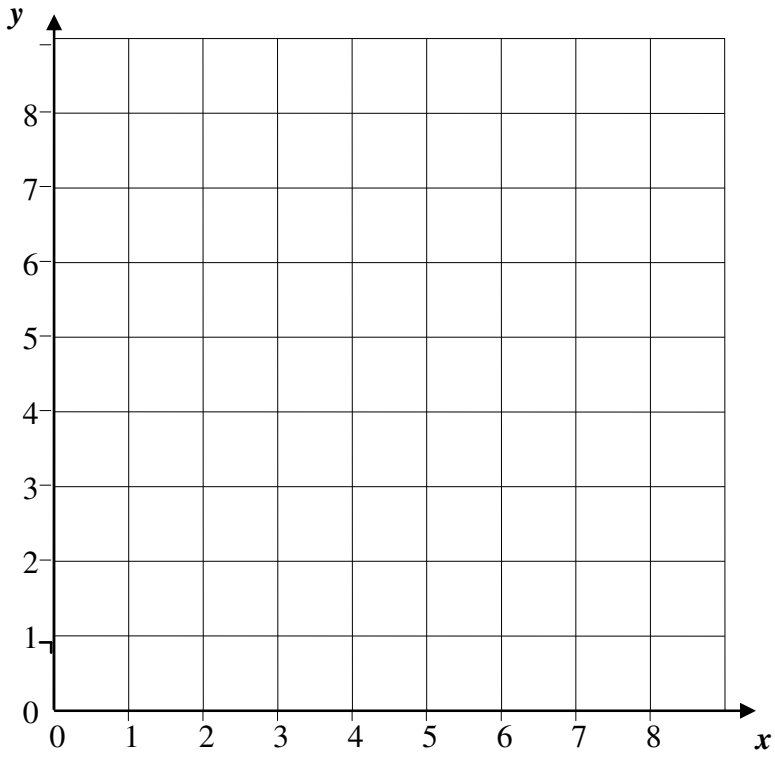


Not drawn accurately

Using ruler and compasses only, construct an accurate scale drawing of the triangle.
Use the scale 1 cm represents 50 m.

(*3 marks*)

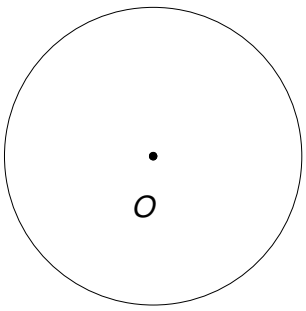
7 Here is a centimetre grid.



7 (a) On the grid, draw a circle of radius 3 centimetres with centre (5, 6).

(2 marks)

7 (b) Here is a circle, centre *O*.



7 (b)(i) Mark with a cross a point on the circumference.

(*1 mark*)

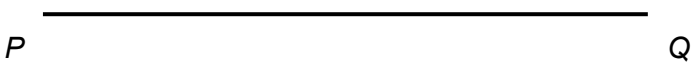
7 (b)(ii) Draw a diameter.

(*1 mark*)

7 (b)(iii) Draw a tangent.

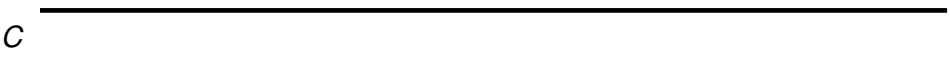
(*1 mark*)

8 (a) Measure the length of line *PQ* in centimetres.



Answer ..... cm (*1 mark*)

8 (b) The length of line *CE* is 12 centimetres.



D is a point on *CE*.

CD is $\frac{1}{4}$ of *CE*.

Work out the length of *DE*.

.....

.....

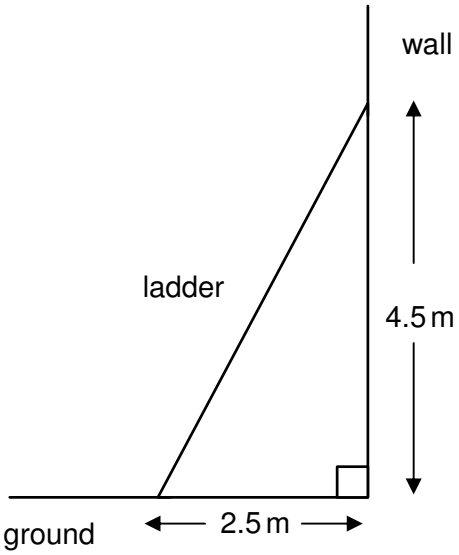
.....

Answer ..... cm (*3 marks*)

9 Sophie has put a ladder against a vertical wall.

The wall is at right angles to the ground.

Not drawn accurately



9 (a) Make a scale drawing of this diagram.

The ground has been drawn for you.

Use a scale of 2 cm to represent 1 metre.

ground

(*3 marks*)

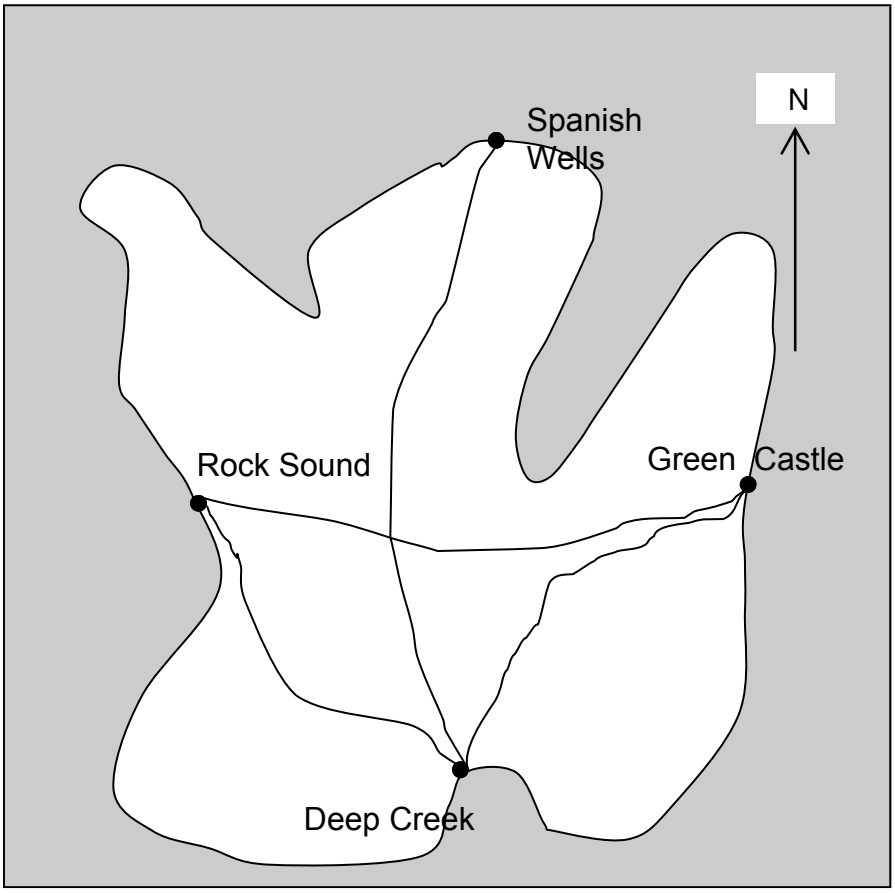
9 (b) For the ladder to be safe to use, the angle between the ladder and the ground must be between 70° and 75°

Is the ladder safe for Sophie to use?
Give a reason for your answer.

.....

(*1 mark*)

10 The diagram shows a map of an island with roads joining four towns.



10 (a) Choose the correct direction from the list to complete each sentence.

North	North-east	North-west	East
South	South-east	South-west	West

Green Castle is..... of Deep Creek.

Deep Creek is ..... of Rock Sound.

(*2 marks*)

(b) A ring is hidden on one of the roads.

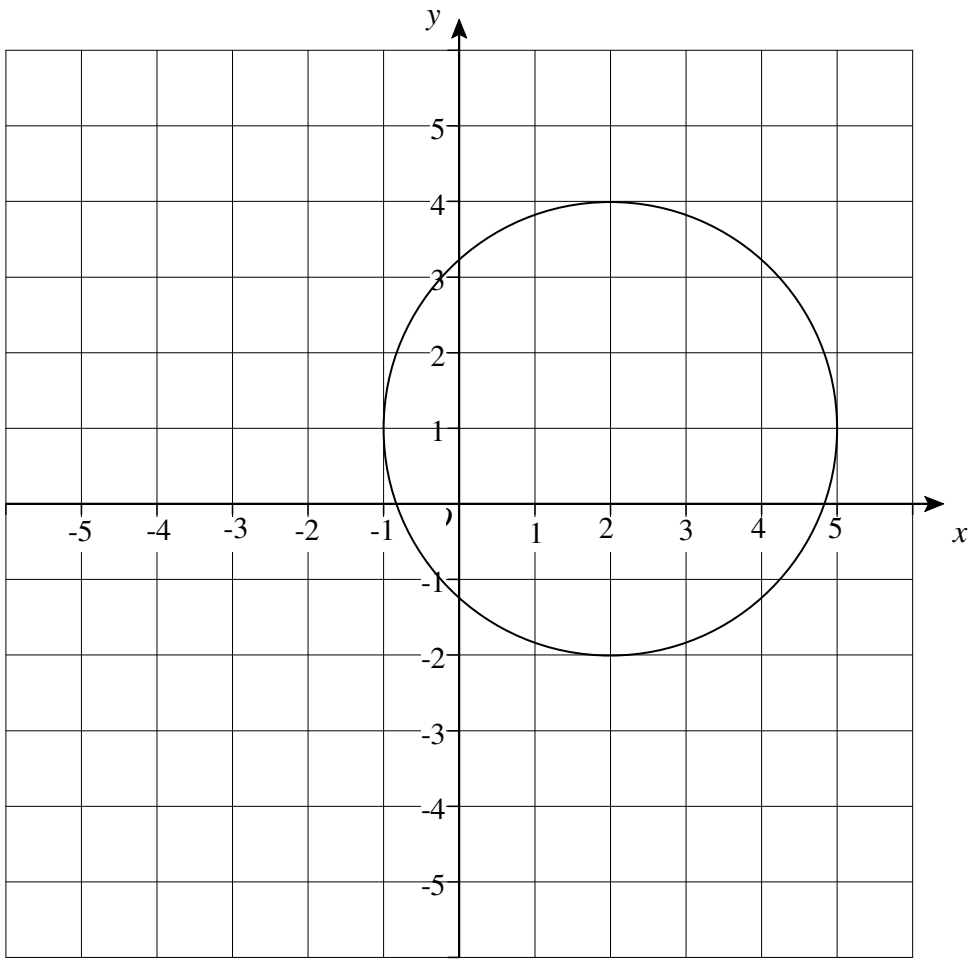
Here are some clues to find it.

The closest town to the ring is Green Castle.
The ring is twice as far from Rock Sound as from Deep Creek.

Mark with a cross, the approximate position of the ring on the map.

(*2 marks*)

11 The diagram shows a circle on a centimetre grid.



11(a) Write down the length of a diameter of the circle.

Answer ..... cm (*1 mark*)

11 (b) Write down the coordinates of the centre of the circle.

Answer (....., ...) (*2 marks*)

11 (c) Draw a tangent to the circle.

(*1 mark*)

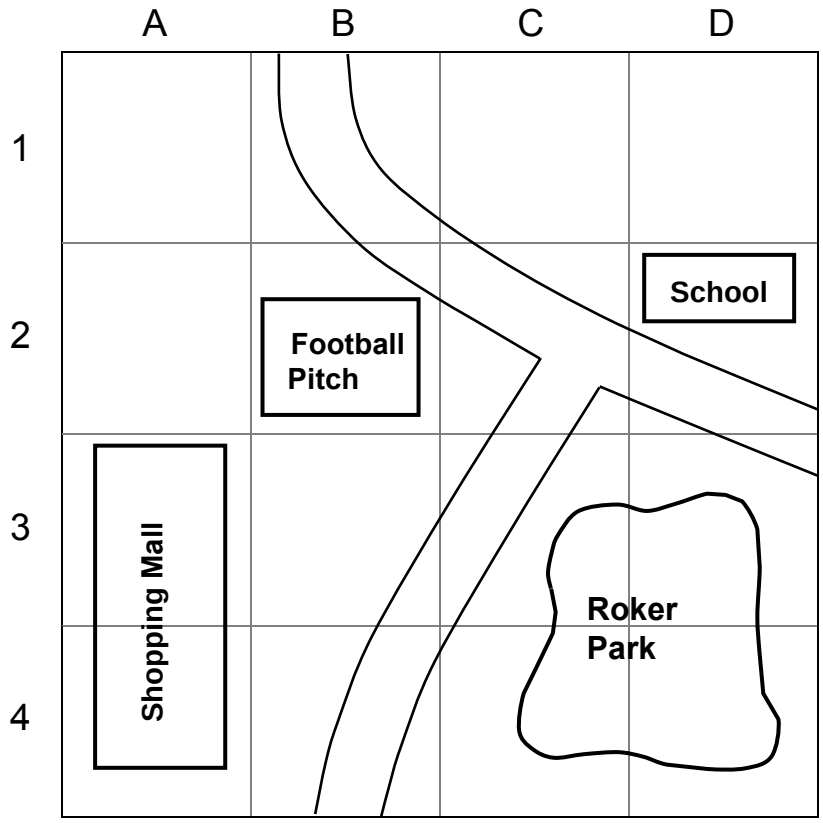
11 (d) State the units for the area of the circle.

Answer ..... (*1 mark*)

12 Part of a map is shown.

A location can be given by a letter and a number.

For example, the school is in D2.



12 (a) In which square is the football pitch?

Answer ..... *(1 mark)*

12 (b) Roker Park occupies several squares.

List all the squares.

.....

.....

Answer ..... *(2 marks)*

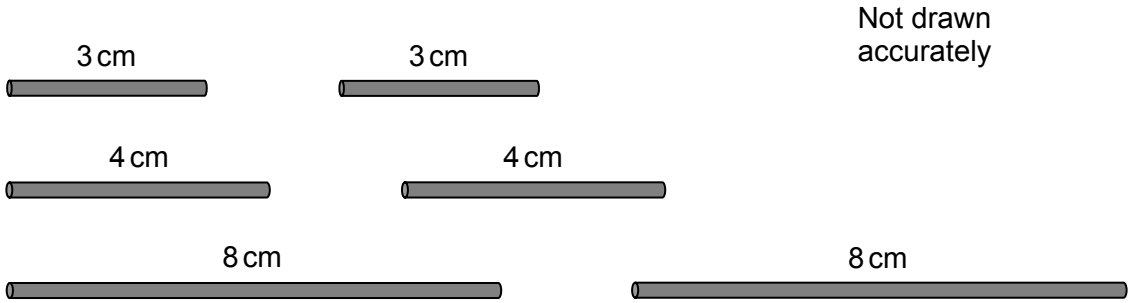
12 (c) The school is due East of the football pitch.

Complete this sentence.

The football pitch is due ..... of the school.

(1 mark)

13 Louis has 6 rods.



13 (a) He makes **two** isosceles triangles using all six of the rods.

Draw **two** different triangles that he can make using all of the rods.
Show the lengths on each side.

(2 marks)

13 (b) He tries to make a triangle using one rod of each length.

Explain why he **cannot** do this.

.....

.....

.....

.....

Answer ..... *(1 mark)*

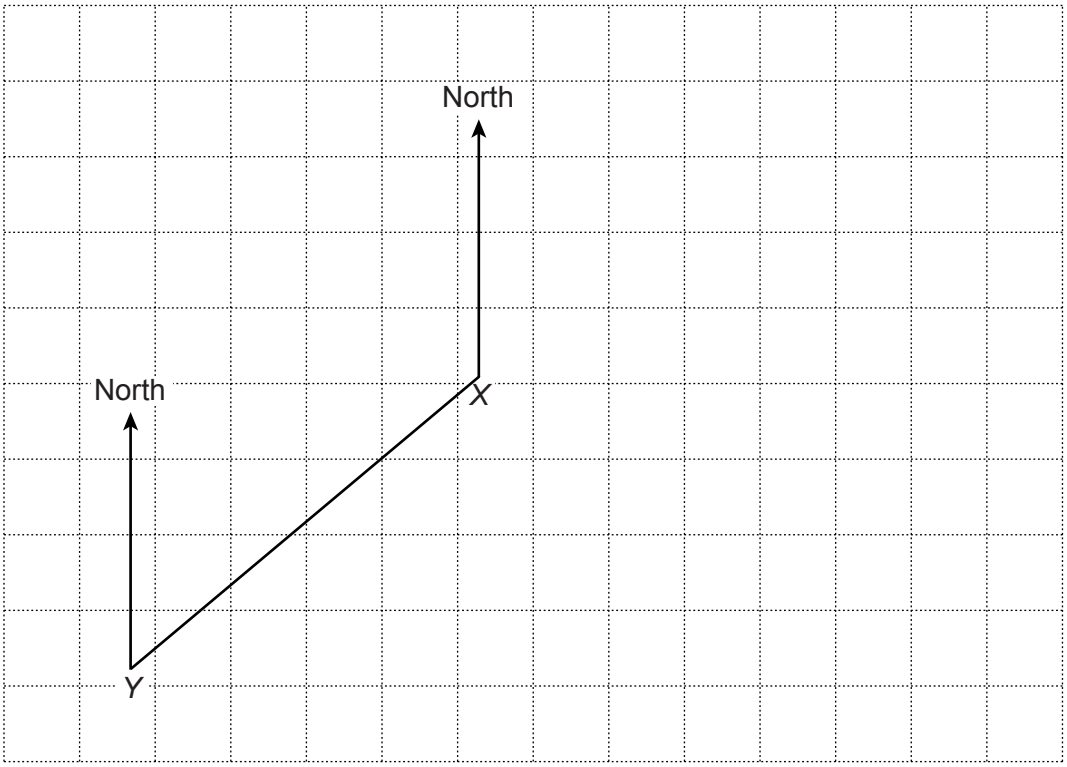
13 (c) Hassan says that it is impossible to have an isosceles triangle with a right angle.

Draw a fully labelled diagram to show that Hassan is wrong.

(2 marks)

14 A boat goes from *X* to *Y*.
The diagram shows the position of *X* and *Y*.
The diagram is drawn to scale.

Scale: 1 cm represents 50 km



14 (a) (i) Use the diagram to find the actual distance from *X* to *Y*.

.....

Answer ..... km *(1 mark)*

14 (a) (ii) Measure and write down the three figure bearing of *Y* from *X*.

Answer ..... ° *(1 mark)*

14 (b) The boat then goes to *Z*.
The bearing of *Z* from *X* is 110°
The bearing of *Z* from *Y* is 080°

Mark the position of *Z* on the diagram.

(3 marks)