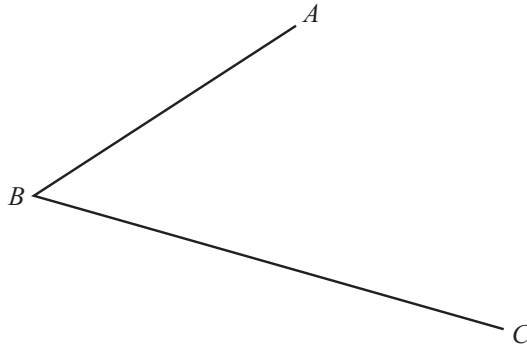


Scale drawing / loci / symmetry P1

1)

In this question use a straight edge and compasses only.
Leave in all your construction arcs.

(a) Construct the bisector of angle ABC .



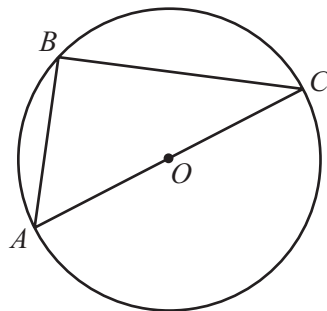
[2]

(b) Construct the perpendicular bisector of the line DE .



[2]

2)



NOT TO
SCALE

A , B and C are points on the circumference of a circle centre O .
 AC is a straight line.

(a) Explain why angle ABC is 90° .

Answer(a) [1]

Scale drawing / loci / symmetry P1

3)

Triangle ABC has sides $AB = 40$ m, $BC = 25$ m and $AC = 35$ m.

Using a scale of 1 cm to represent 5 m, construct triangle ABC .

The construction must be completed using a ruler and compasses only.

All construction arcs must be clearly shown.

Answer



[3]

Scale drawing / loci / symmetry P1

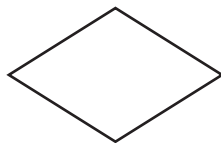
4)



- (a) Using a straight edge and compasses only, construct the perpendicular bisector of AB . Show all your construction arcs. [2]
- (b) Draw the locus of points that are 4 cm from A . [1]
- (c) Shade the region which is less than 4 cm from A and nearer to B than to A . [1]

5)

- (a) Write down the order of rotational symmetry of this shape.



Answer(a) [1]

- (b) Draw the lines of symmetry on this shape.

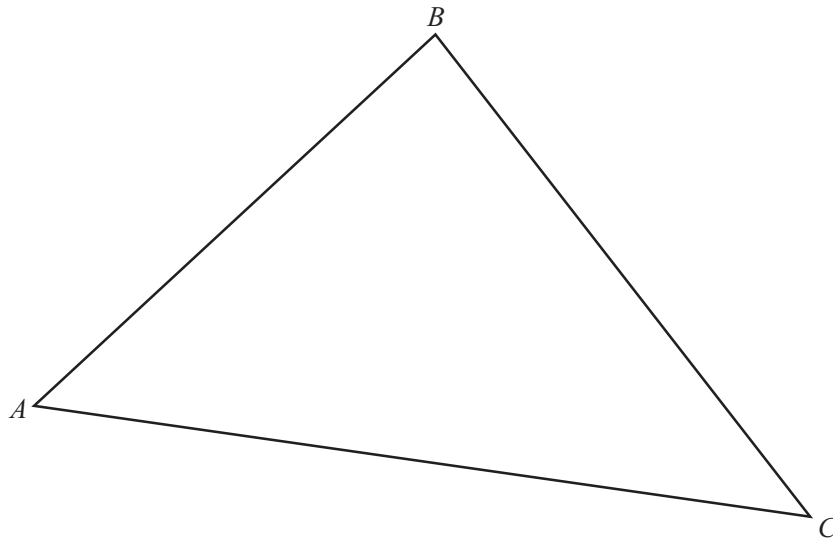


[1]

Scale drawing / loci / symmetry P1

6)

Use a straight edge and compasses only for the constructions in parts (a) and (b).
Leave in all your construction arcs.



(a) Construct the bisector of angle ABC . [2]

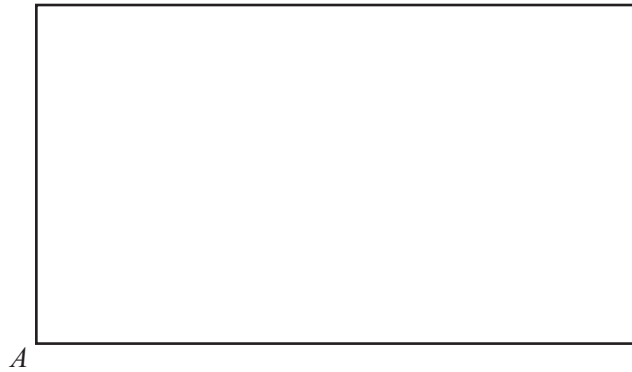
(b) Construct the perpendicular bisector of AB . [2]

(c) Shade the region inside triangle ABC containing points that are

- less than 7 cm from C
- and**
- closer to A than to B . [2]

Scale drawing / loci / symmetry P1

7)



- (a) Construct the locus of all the points which are 3 cm from vertex *A* **and** outside the rectangle. [2]
- (b) Construct, **using a straight edge and compasses only**, one of the lines of symmetry of the rectangle. [2]

Scale drawing / loci / symmetry P1

8)

(a) Add **one** line to the diagram so that it has two lines of symmetry.



[1]

(b) Add **two** lines to the diagram so that it has rotational symmetry of order 2.



[1]

9)

$A \cdot$

$\cdot B$

Using a straight edge and compasses only, construct the locus of points which are equidistant from point A and from point B .

Show clearly all your construction arcs.

[2]

10) P3

In this question, all construction arcs must be shown clearly.

Jalal buys an area of land on which to build a school.

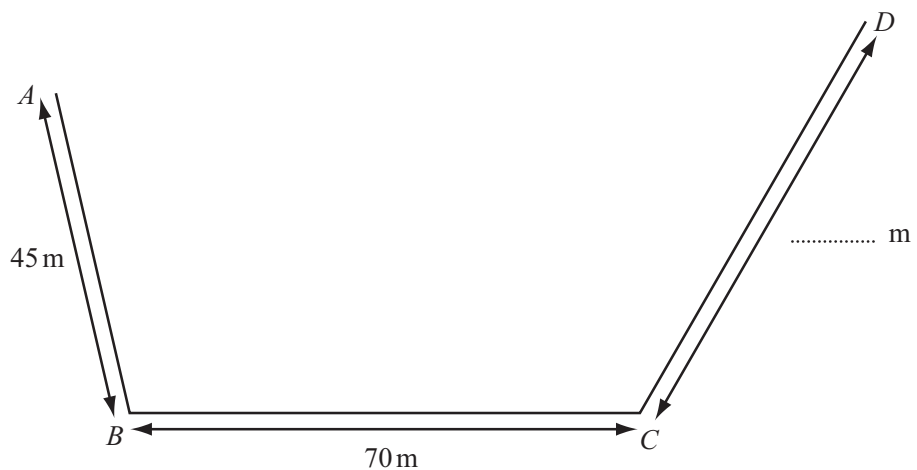
The land, $ABCDE$, is in the shape of a polygon with 5 sides.

(a) Write down the mathematical name of this polygon.

Answer(a) [1]

(b) Jalal starts to make an accurate plan of the land, as shown below.

He uses a scale of 1 centimetre to represent 10 metres.



(i) The actual lengths of AB and BC are written on the plan.

Write the actual length of CD on the plan.

[1]

(ii) Use compasses to find the point E such that $AE = 64$ m and $DE = 58$ m.

Draw the lines AE and DE .

[2]

Scale drawing / loci / symmetry P1

- (c) The land is to be divided into distinct regions.

Construct, using a straight edge and compasses only,

(i) the perpendicular bisector of BC , [2]

(ii) the bisector of angle ABC . [2]

- (d) The music department building will be nearer to B than to C **and** nearer to BC than to BA .

Write a letter M on the plan where the music department could be. [1]