

Angles and Constructions

ANSWERS

Ruler, protractor and compasses

30 minutes

Total marks: 28

Name

Class

- 1 Write **acute**, **right**, **obtuse** or **reflex** under each angle.

35°

acute

90°

right

140°

obtuse

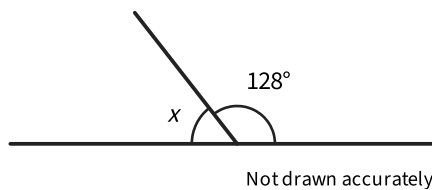
250°

reflex

All four correct (2) Two or three correct (1)

[2 marks]

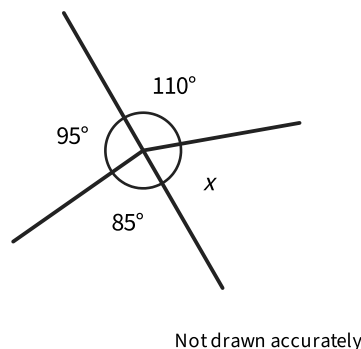
- 2 (a)



The diagram shows a straight line.
Work out the size of angle x .

$x =$ 52 (1) $^\circ$ [1 mark]

- (b)

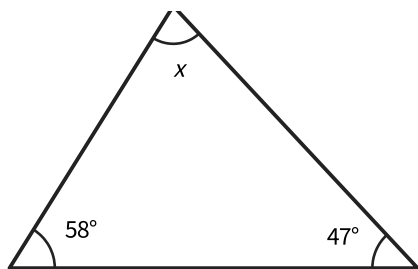


Four angles meet at a point.
Work out the size of angle x .

$x =$ 70 (1) $^\circ$ [1 mark]

3

(a)

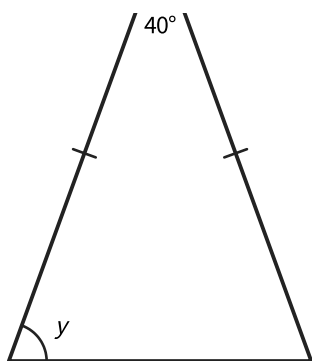


Not drawn accurately

Work out the size of angle x .

$$x = \underline{75 \text{ (1)}}^\circ \quad [1 \text{ mark}]$$

(b)



Not drawn accurately

This triangle is isosceles.

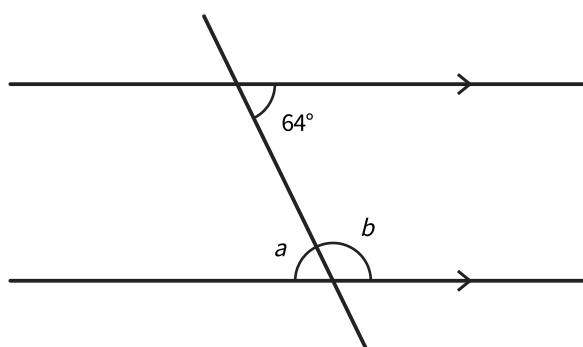
Work out the size of angle y .

$$(180 - 40) \div 2 \text{ (1)}$$

$$y = \underline{70 \text{ (1)}}^\circ \quad [2 \text{ marks}]$$

4

The diagram shows two parallel lines crossed by a straight line.



Not drawn accurately

(a) Write down the size of angle a .

Give a reason for your answer.

$$a = \underline{64 \text{ (1)}}^\circ$$

Reason

Alternate angles are equal (1)

[2 marks]

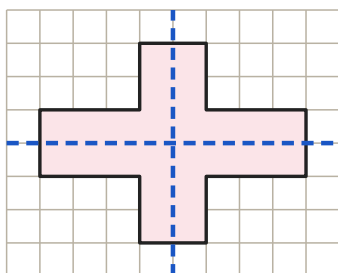
(b) Work out the size of angle b .

$$b = \underline{116 \text{ (1)}}^\circ \quad [1 \text{ mark}]$$

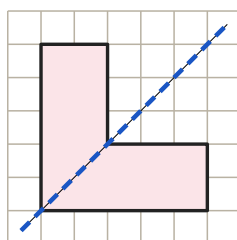
5

Draw all the lines of symmetry on each shape.

(a)



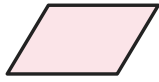
(b)



(a) both lines and no others (1) (b) the diagonal line (1)

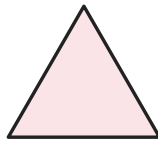
[2 marks]

- 6 Write down the order of rotational symmetry of each shape.



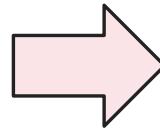
A

2



B

3



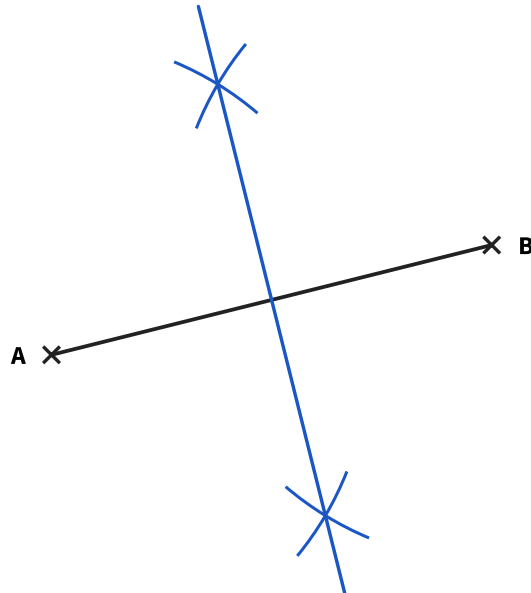
C

1

All three correct (2) Two correct (1)

[2 marks]

- 7 Use a ruler and compasses to construct the perpendicular bisector of the line AB.
You must show your construction arcs.

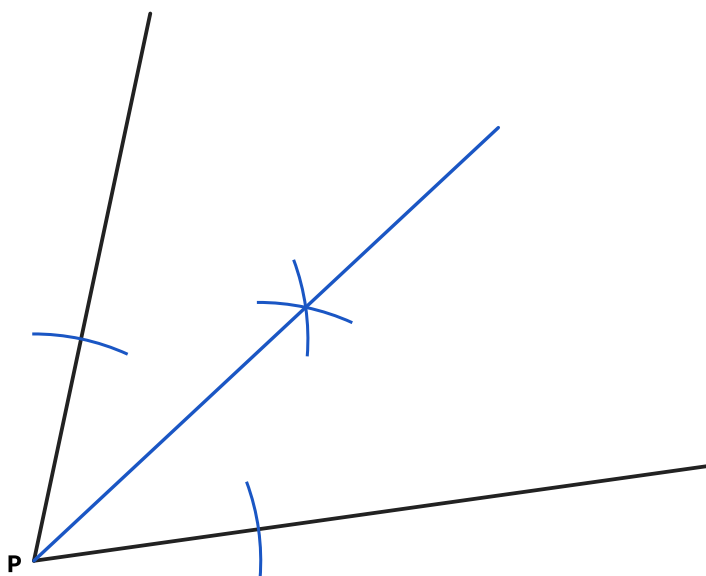


Two pairs of arcs crossing (1) Bisector drawn through the crossings (1)

[2 marks]

- 8 Use a ruler and compasses to construct the bisector of the angle at P.

You must show your construction arcs.

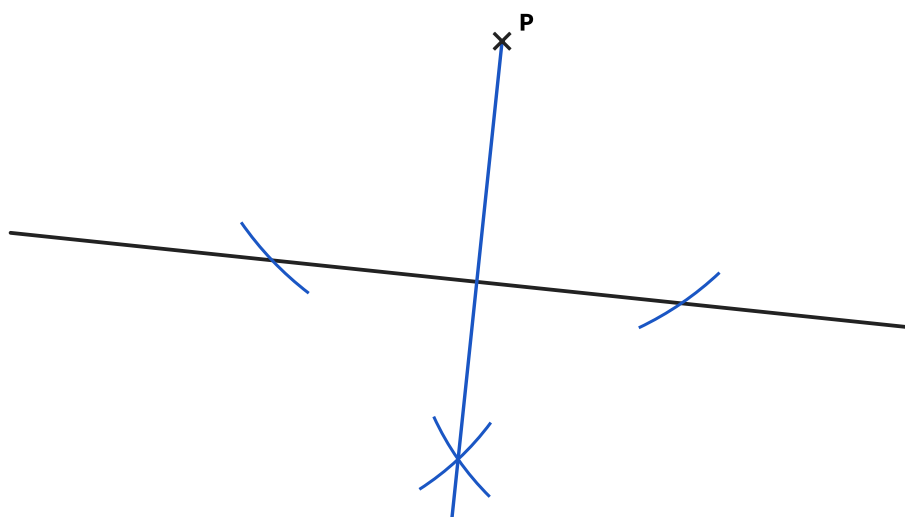


Arc across both arms with two arcs crossing (1) Bisector drawn (1)

[2 marks]

- 9 Use a ruler and compasses to construct the perpendicular from the point P to the line.

You must show your construction arcs.



Arcs on the line from P, then two arcs crossing (1) Perpendicular drawn from P (1)

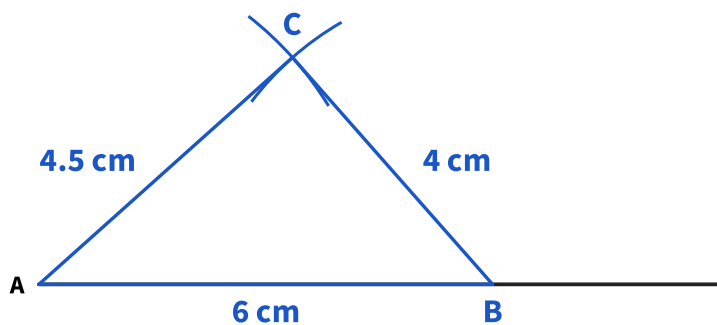
[2 marks]

10

The point A is marked on a line below.

Use a ruler and compasses to construct triangle ABC with $AB = 6\text{ cm}$, $AC = 4.5\text{ cm}$ and $BC = 4\text{ cm}$.

You must show your construction arcs.



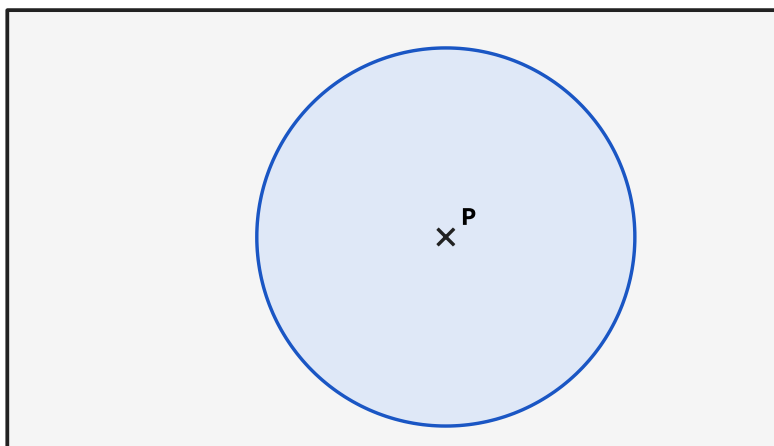
AB = 6 cm along the line and an arc of radius 4.5 cm from A (1) Arc of radius 4 cm from B (1) Triangle completed (1)

[3 marks]

11

The diagram shows a field. A goat is tied to a post at P with a rope 2.5 m long.

Shade the region where the goat can reach.



Scale: 1 cm represents 1 m

Circle of radius 2.5 cm centred on P (1) Inside shaded (1)

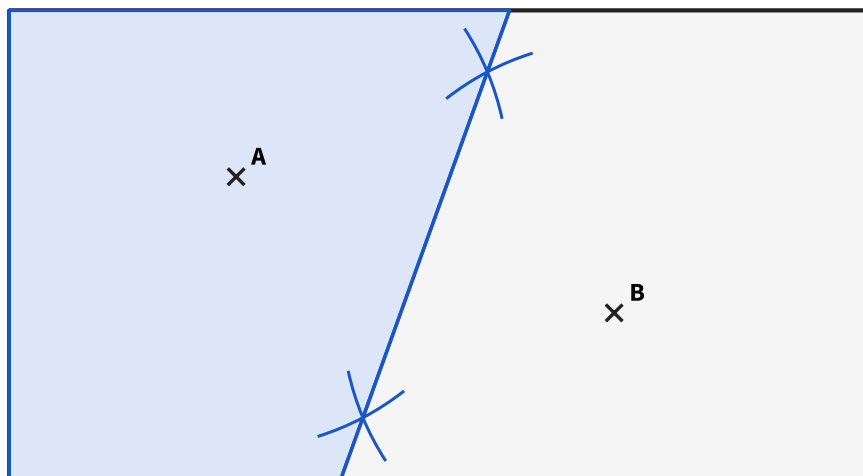
[2 marks]

12

The rectangle is a garden. There is a tree at A and a tree at B.

Shade the region of the garden that is nearer to A than to B.

You must show your construction arcs.



Two pairs of arcs crossing (1) Perpendicular bisector of AB (1) The side nearer to A shaded (1)

[3 marks]

Question	Topic	RAG
1	I know the types of angle	
2	I can use angles on a straight line and around a point	
3	I can find angles in a triangle and an isosceles triangle	
4	I can find angles on parallel lines and give a reason	
5	I can draw lines of symmetry	
6	I can find the order of rotational symmetry	
7	I can construct a perpendicular bisector	
8	I can construct an angle bisector	
9	I can construct a perpendicular from a point to a line	
10	I can construct a triangle from three sides	
11	I can draw a locus a fixed distance from a point	
12	I can find the region nearer to one point than another	