

# Angles and 2D Shapes

ANSWERS

Protractor and ruler | 30 minutes | Total marks: 30

Name ..... Class .....

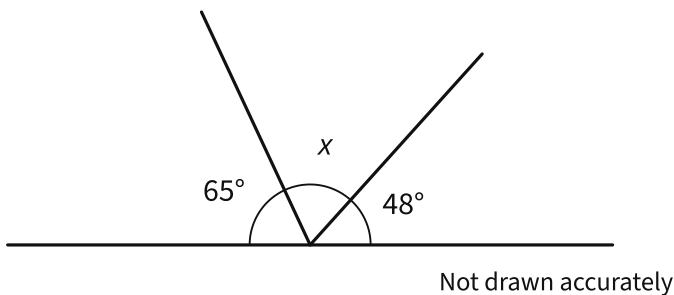
- 1 Rosa is facing North.  
She turns clockwise until she is facing South East.  
Write down the size of the angle she turns through.

Answer 135 (1) ° [1 mark]

- 2 The diagram shows three angles on a straight line.

Work out the size of angle  $x$ .

$$180 - 48 - 65 (1)$$

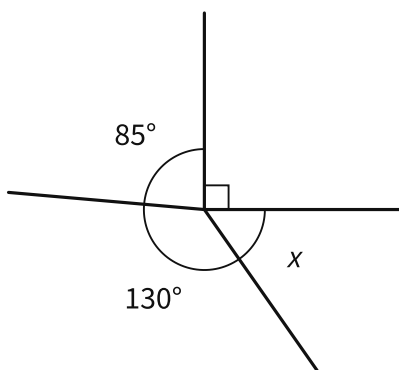


$x =$  67 (1) ° [2 marks]

- 3 The diagram shows four angles at a point.

Work out the size of angle  $x$ .

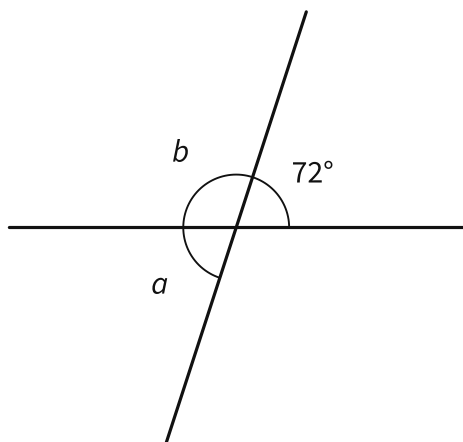
$$360 - 90 - 85 - 130 (1)$$



$x =$  55 (1) ° [2 marks]

4

The diagram shows two straight lines that cross.



Not drawn accurately

- (a) Write down the size of angle  $a$ .

Give a reason for your answer.

$$a = 72 \text{ (1)}^\circ$$

*Vertically opposite angles are equal (1)*

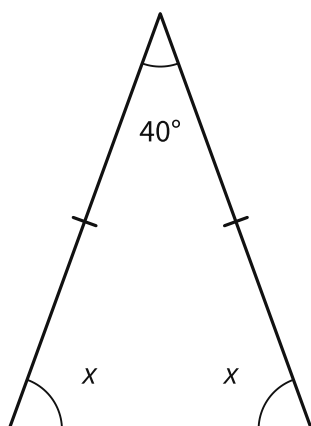
[2 marks]

- (b) Work out the size of angle  $b$ .

$$b = 108 \text{ (1)}^\circ \quad [1 \text{ mark}]$$

5

The diagram shows an isosceles triangle.



Not drawn accurately

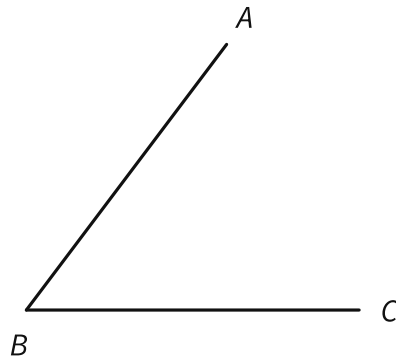
Work out the size of angle  $x$ .

$$180 - 40 = 140 \text{ (1)}$$

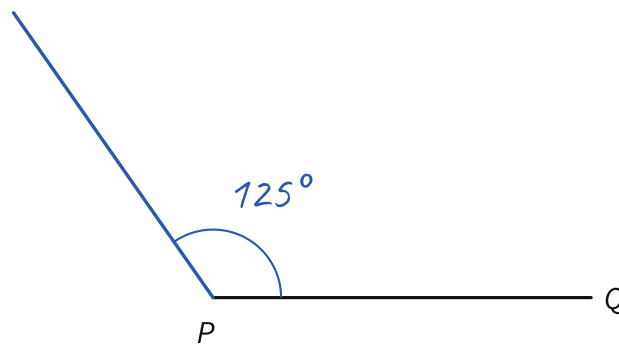
$$140 \div 2$$

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

6

(a) Measure the size of angle  $ABC$ .

Answer 53 (1) accept 51 to 55 ° [1 mark]

(b) The line  $PQ$  is drawn below.Draw an angle of  $125^\circ$  at  $P$ .

Angle between  $123^\circ$  and  $127^\circ$  (1) Drawn at P with a ruler (1)

[2 marks]

7

Write down the name of each quadrilateral.

It has exactly one pair of parallel sides.

trapezium (1)

It has four equal sides and no right angles.

rhombus (1)

It has two pairs of equal sides. The equal sides are next to each other.

kite (1)

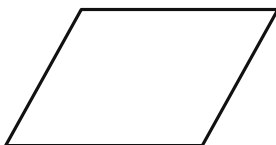
[3 marks]

8

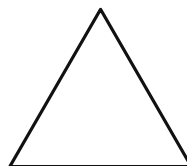
Here are a rectangle, a parallelogram and an equilateral triangle.



A



B



C

Complete the table.

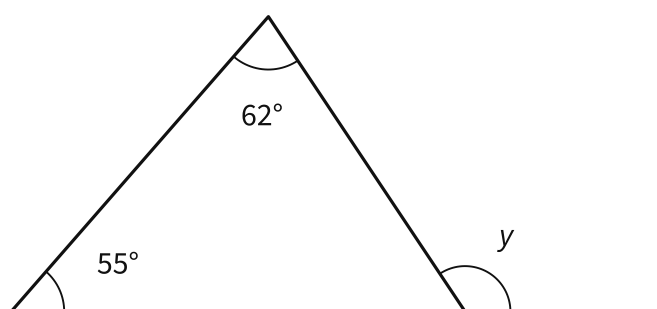
| Shape | Lines of symmetry | Order of rotational symmetry |
|-------|-------------------|------------------------------|
| A     | 2                 | 2 (1)                        |
| B     | 0                 | 2 (1)                        |
| C     | 3                 | 3 (1)                        |

[3 marks]

9

The diagram shows a triangle.

One side of the triangle has been extended.



Not drawn accurately

Work out the size of angle  $y$ .

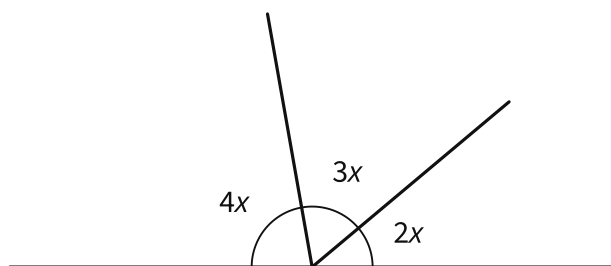
$$180 - 55 - 62 = 63 \text{ (1)}$$

$$180 - 63 \text{ (1)}$$

$$y = 117 \text{ (1)}^\circ \text{ [3 marks]}$$

10

The diagram shows three angles on a straight line.



Not drawn accurately

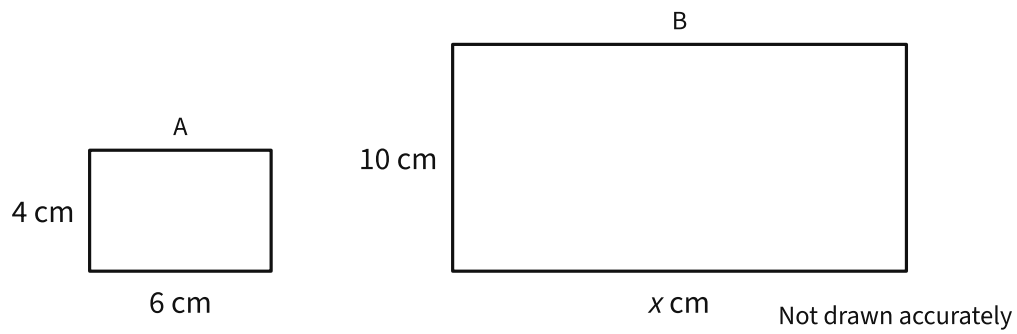
Work out the size of the largest angle.

$$2x + 3x + 4x = 180 \text{ (1)}$$

$$9x = 180, \text{ so } x = 20 \text{ (1)}$$

$$\text{Answer } 80 \text{ (1)}^\circ \text{ [3 marks]}$$

- 11** Rectangle A and rectangle B are similar.



Work out the value of  $x$ .

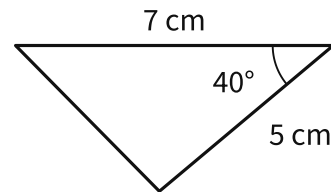
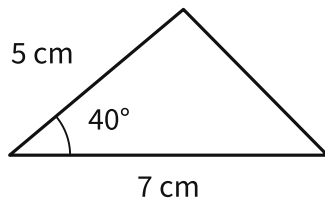
*scale factor  $10 \div 4 = 2.5$  (1)*

*$6 \times 2.5$  (1)*

$x =$  15 (1) [3 marks]

12

Here are two triangles.



Not drawn accurately

Explain why the two triangles are congruent.

*Two sides and the angle between them are the same (1)*

*SAS (1)*

[2 marks]

| Question | Topic                                                  | RAG |
|----------|--------------------------------------------------------|-----|
| 1        | I can work out a turn using compass directions         |     |
| 2        | I can use angles on a straight line                    |     |
| 3        | I can use angles at a point                            |     |
| 4        | I can use vertically opposite angles and give a reason |     |
| 5        | I can find angles in an isosceles triangle             |     |
| 6        | I can measure and draw angles                          |     |
| 7        | I know the properties of quadrilaterals                |     |
| 8        | I can describe line and rotational symmetry            |     |
| 9        | I can find angles in a triangle with a side extended   |     |
| 10       | I can form and solve an equation with angles           |     |
| 11       | I can find a missing length in similar shapes          |     |
| 12       | I can explain why two triangles are congruent          |     |