

Symmetry

For AQA GCSE Mathematics (8300) • Foundation tier

Name _____

Total marks: **20**

Answer **all** questions in the spaces provided. Show your working: marks are given for correct method.

- 1** A shape has exactly 4 lines of symmetry.
Which of these could it be?
Circle your answer.

[1 mark]

Rectangle

Square

Rhombus

Regular hexagon

- 2** A quadrilateral has exactly **one** line of symmetry.
Which of these could it be?
Circle your answer.

[1 mark]

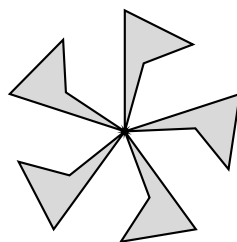
Rectangle

Kite

Rhombus

Square

- 3** Here is a design.



Circle the order of rotational symmetry of the design.

[1 mark]

1

2

5

10

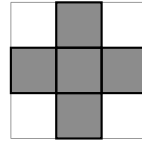
4 Here are four shapes made from squares.



A



B



C



D

(a) Which shape has rotational symmetry of order 2?

[1 mark]

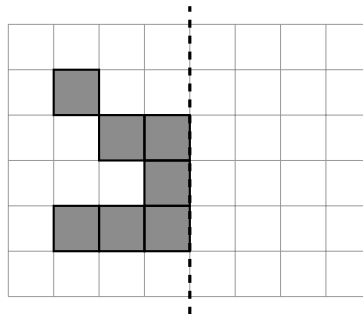
Answer _____

(b) Which shape has exactly one line of symmetry?

[1 mark]

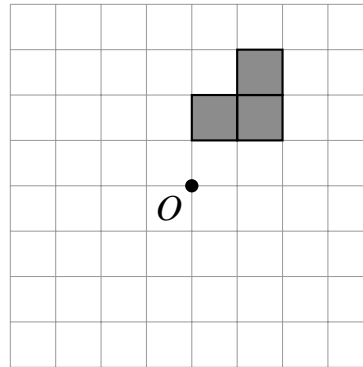
Answer _____

5 Shade squares so that the dashed line is a line of symmetry of the shape.



[2 marks]

- 6** The diagram shows part of a pattern on a square grid. Shade 9 more squares so that the completed pattern has rotational symmetry of order 4 about the point O .



[2 marks]

- 7** Write down the order of rotational symmetry of
- (a) a parallelogram

[1 mark]

Answer _____

- (b) a regular octagon

[1 mark]

Answer _____

8 (a) Kai says,

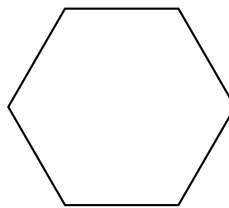
‘A regular hexagon has 3 lines of symmetry, one through each pair of opposite corners.’

Is Kai correct?

Give a reason for your answer.

[1 mark]

(b) Draw all the lines of symmetry on this regular hexagon.



[1 mark]

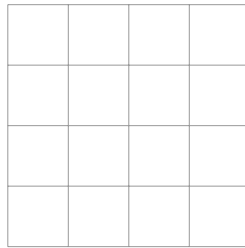
9 Which of these statements is true?

Tick one box.

[1 mark]

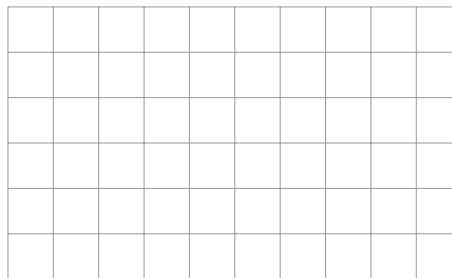
- ☐ Every quadrilateral has at least one line of symmetry
- ☐ A shape with rotational symmetry of order 2 must have a line of symmetry
- ☐ A rectangle has rotational symmetry of order 4
- ☐ An equilateral triangle has rotational symmetry of order 3

- 10** In the grid below, shade one quarter of the squares so that the grid has exactly two lines of symmetry. Shade complete squares only.



[2 marks]

- 11** On the grid, draw a hexagon that has exactly **two** lines of symmetry. Show the lines of symmetry as dashed lines.



[2 marks]

- 12** A rectangle has lines of symmetry $x = 1$ and $y = 5$
One vertex of the rectangle is at $P(4, 7)$
Work out the coordinates of the vertex opposite P .

[2 marks]

Answer (_____ , _____)