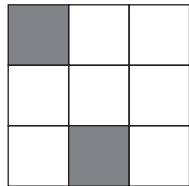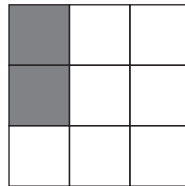Name:

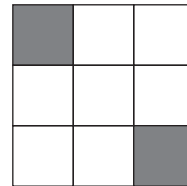Section:

# Symmetry Worksheet

**1**  Sam has six square tiles labelled *A*, *B*, *C*, *D*, *E* and *F*.



*A*                         *B*                         *C*



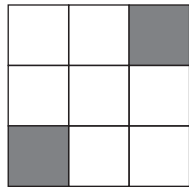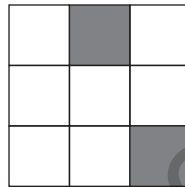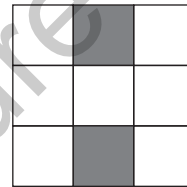*D*                         *E*                         *F*
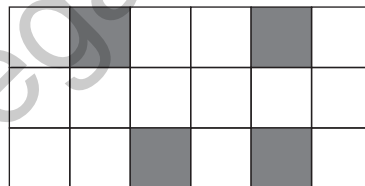
When Sam places tiles *E* and *F* side by side the resulting rectangle has no lines of symmetry and no rotational symmetry.



*E*               *F*

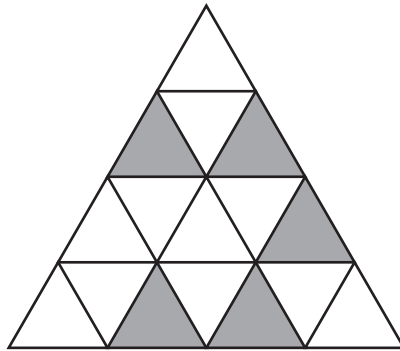Write down the two tiles that Sam should place side by side to make a rectangle that has

**(a)** one line of symmetry only,

.................................................. [1]

**(b)** rotational symmetry of order 2.

.................................................. [1]

**2**



Shade **one** more small triangle so that the shape has rotational symmetry of order 3.                [1]

**3**    Complete the description of the symmetry for each shape.



.......... lines of symmetry                              .......... lines of symmetry

Rotational symmetry of order ..........        Rotational symmetry of order ..........

[2]

**4    (a)**
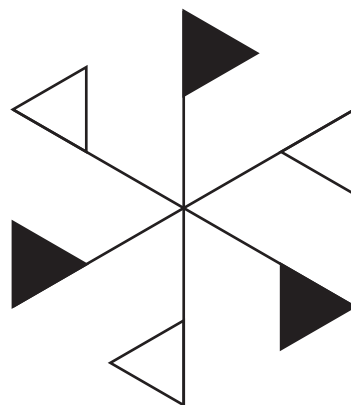


Write down the order of rotational symmetry of this shape.

................................................... [1]

**(b)** Samuel describes a special quadrilateral.

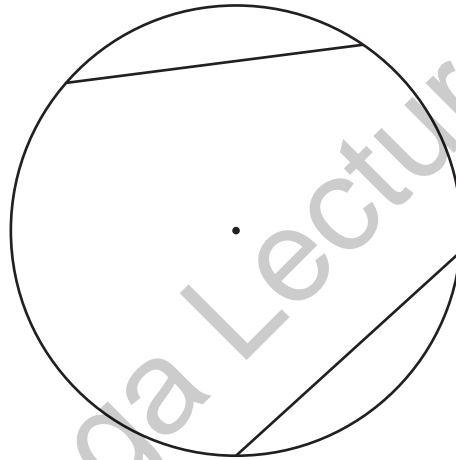It has only one line of symmetry.
Its diagonals cross at right angles.

Write down the name of this special quadrilateral.

.................................................. [1]

**5** **(a)** The diagram shows a circle, its centre and two chords of equal length.
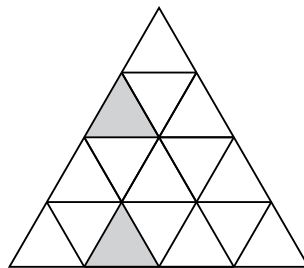The diagram has one line of symmetry.

Draw this line of symmetry.



[1]

**(b)** In the diagram below, two small triangles are shaded.

Shade **one** more small triangle to give a diagram that has rotational symmetry of order 3.
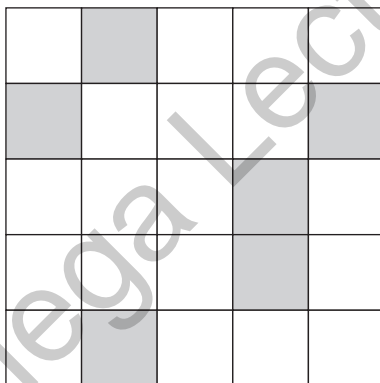


[1]

**6** **(a)** The diagram shows **part** of a figure that has rotational symmetry of order 4 about the point *O*.
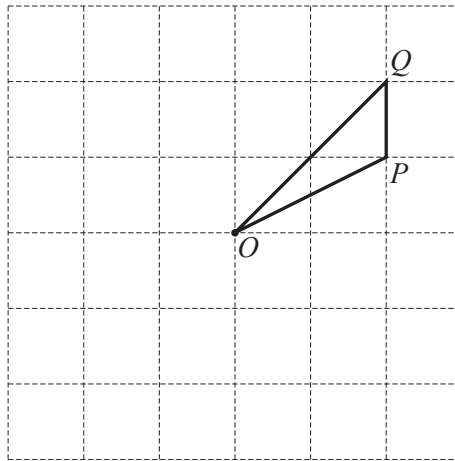
Complete the figure.



[1]

**(b)** In the diagram, six small squares are shaded.

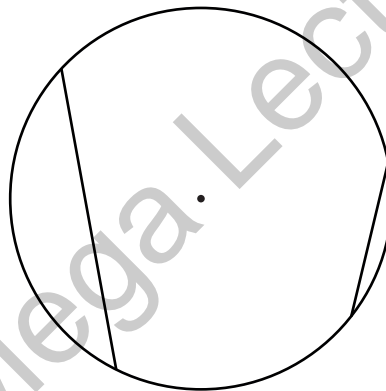Shade **one** more small square to give a diagram that has exactly one line of symmetry.



[1]

**7** **(a)** Triangle *OPQ* is **part** of a figure that has rotational symmetry of order 2 about the point *O*.
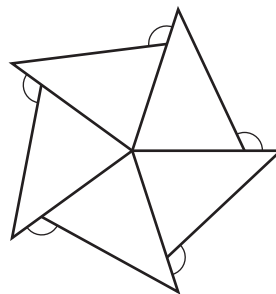
Complete the figure.



[1]

**(b)** The diagram shows a circle, its centre, and two chords.

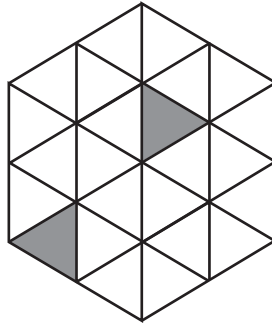Add **one** chord, to give a diagram that has one line of symmetry.



[1]

**8**



The diagram shows a figure made from five identical triangles.
The figure has rotational symmetry.

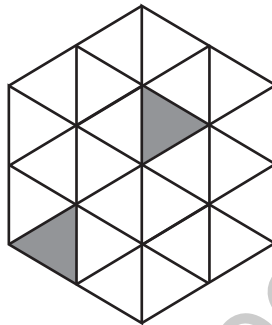**(a)** Write down the order of rotational symmetry.

*Answer* ......................................... [1]

**9** **(a)** Shade **one** more small triangle in the shape below to make a pattern with one line of symmetry.
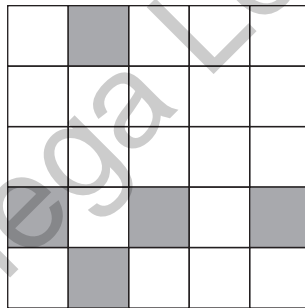


[1]

**(b)** Shade **two** more small triangles in the shape below to make a pattern with rotational symmetry of order 2.



**10** **(a)** [1]
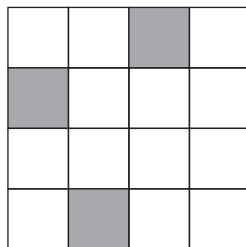


In the diagram, five small squares are shaded.

Shade **one more** small square, so that the diagram has exactly one line of symmetry. [1]

**(b)**



In the diagram, three small squares are shaded.

Shade **one more** small square, so that the diagram has rotational symmetry of order 4. [1]
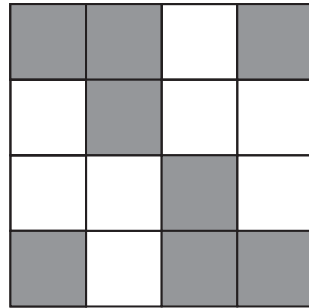
**11 (a)** Complete this description.

A rectangle has rotational symmetry of order ………
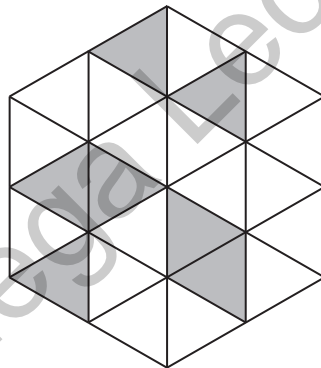
and ……… lines of symmetry. [1]

**(b)** Shade 4 more small squares in the shape below to make a pattern with rotational symmetry of order 4.



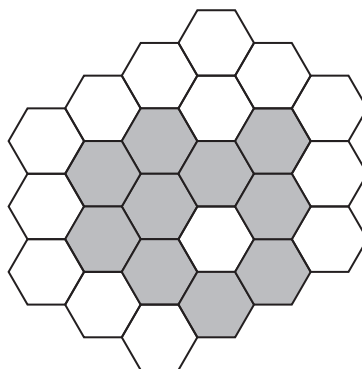**12 (a)** In the diagram, seven small triangles are shaded. [1]

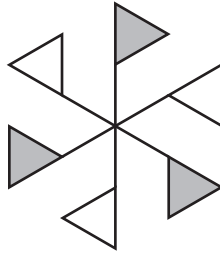Shade two more small triangles, so that the diagram will then have rotational symmetry of order 3.



[1]

**(b)** In the diagram, ten small hexagons are shaded.

Shade one more small hexagon, so that the diagram will then have exactly one line of symmetry.



[1]

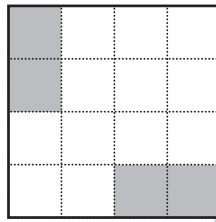**13 (a)** Complete the description of the pattern below.



The pattern has rotational symmetry of order ...............
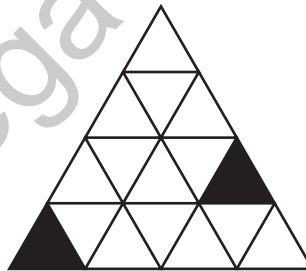
and ............... lines of symmetry. [1]

**(b)** Shade in **two** more small squares in this shape to make a pattern with exactly 2 lines of symmetry.



[1]

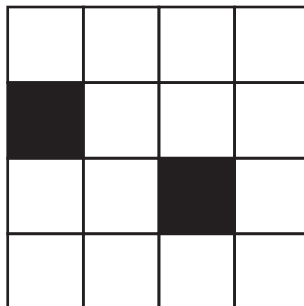**14 (a)** In the diagram, two small triangles are shaded.

Shade one more small triangle, so that the diagram will then have one line of symmetry.



[1]

**(b)** In the diagram, two small squares are shaded.

Shade two more small squares, so that the diagram will then have rotational symmetry of order 2.



[1]

**15** **(a)** On the grid below, draw a quadrilateral with

no rotational symmetry
**and** just 1 line of symmetry.

[1]

**(b)** Complete this description.

A parallelogram has rotational symmetry of order ..........................

and .......................... lines of symmetry. [1]