S3.5 Rotational symmetry

This spread will show you how to:

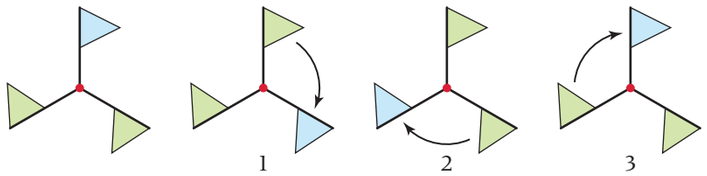
- Recognise rotational symmetry of 2-D shapes

Keywords

Order of rotational symmetry
Regular polygon
Rotational symmetry

- A shape has **rotational symmetry** if the shape looks like itself more than once in a full turn.

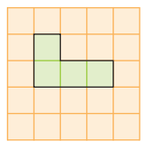
The **order of rotational symmetry** is the number of times a shape looks exactly like itself in a complete turn.

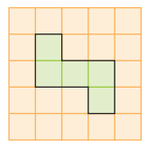


The order of rotational symmetry is 3.

Example

Add one extra square so that the shaded shape has rotational symmetry of order 2.



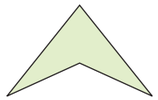


Example

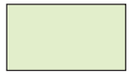
Name these shapes. State the order of rotational symmetry for each one.

a

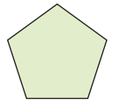
b



c

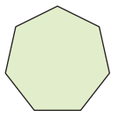


d

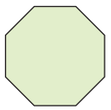


a rhombus 2 **b** arrowhead 1 **c** rectangle 2 **d** regular pentagon 5

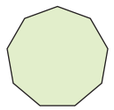
- A **regular polygon** with n sides has rotational symmetry of order n.



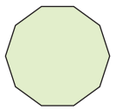
regular heptagon



regular octagon



regular nonagon



regular decagon

Turn the page around to see the rotational symmetry.

Exercise S3.5

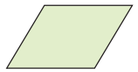
1 Copy these 2-D shapes and state the order of rotational symmetry for each shape.

a

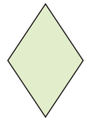
b

c

d



e



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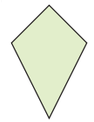
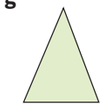


g



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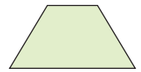


i

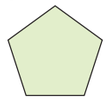
j

2 State the order of rotational symmetry for these regular polygons.

a

b

c



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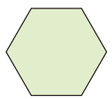

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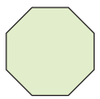
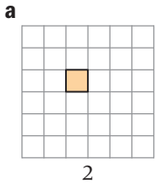
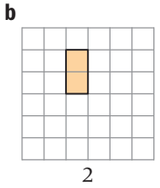


3 Draw these shapes on square grid paper. Add one square to each to give a shape with the given order of rotational symmetry.

a



b



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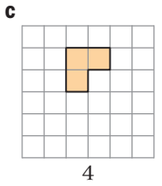

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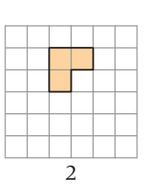

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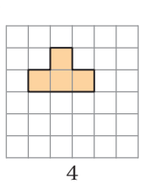

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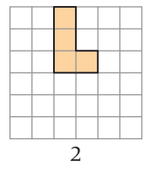

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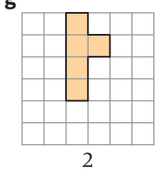

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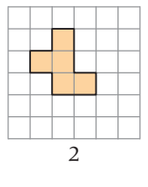

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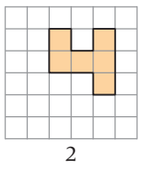

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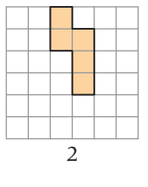
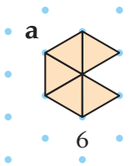
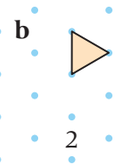


4 Draw these shapes on isometric paper. Add one triangle to give a shape with the given order of rotational symmetry.

a



b



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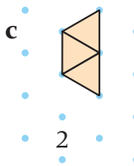

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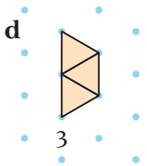
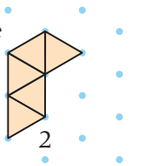
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