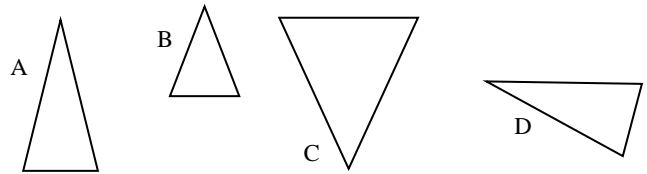


TRANSFORMATIONS - Foundation

Congruent Shapes

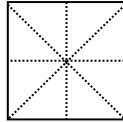
- Congruent shapes are exactly the same size and shape
Shapes **A** and **D** are congruent



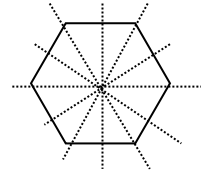
Symmetry



A rectangle has two lines of symmetry



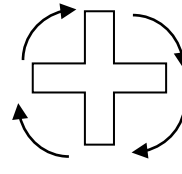
A square has four lines of symmetry



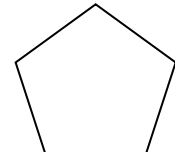
A Hexagon has six lines of symmetry

Rotational Symmetry

A shape has **Rotational Symmetry**, if it fits on top of itself more than once as it is rotated a complete circle.



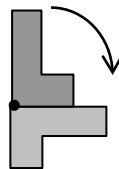
Order of Rotational = 4



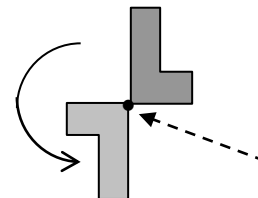
Order of Rotational = 5

Rotation Is a circular movement

Use tracing paper in the exam



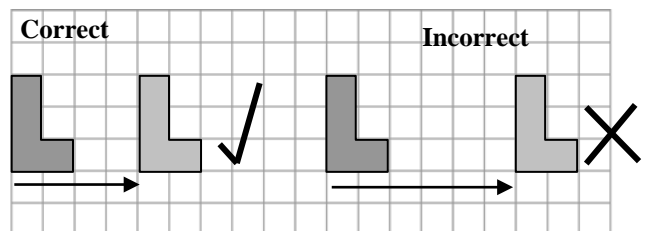
Quarter turn clockwise
90° clockwise



A half turn anticlockwise
180° anticlockwise

Centre of Rotation

Translations Is movement in a straight line



4 squares to the right

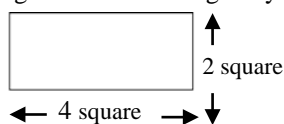
Enlargement

- An **Enlargement** is a change in the size of an object. It changes by the same amount in each direction

- **Scale factor**

The **scale factor** tells us how many times bigger the enlargement is

- The rectangle has been enlarged by a **scale factor of 2**



Object

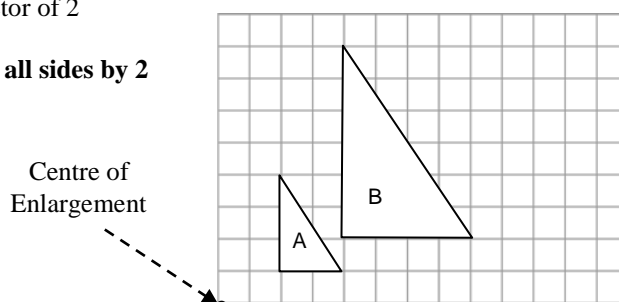


Enlargement

- **Centre of Enlargement**

Scale Factor of 2

Multiply all sides by 2

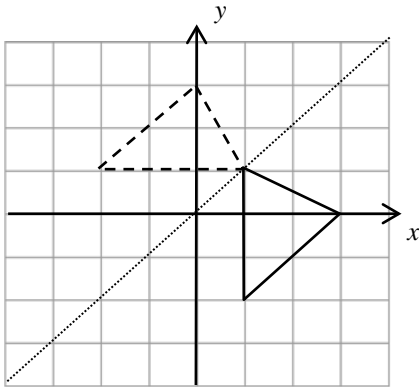


Triangle **B** 4 by 6

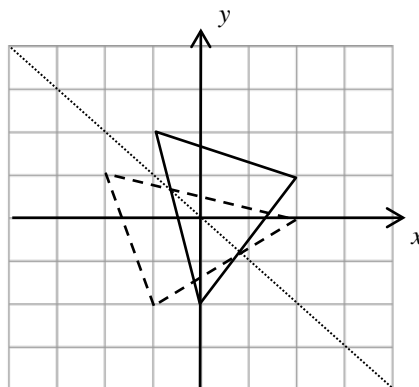
Triangle **A** 2 by 3

TRANSFORMATIONS INTERMEDIATE

REFLECTION

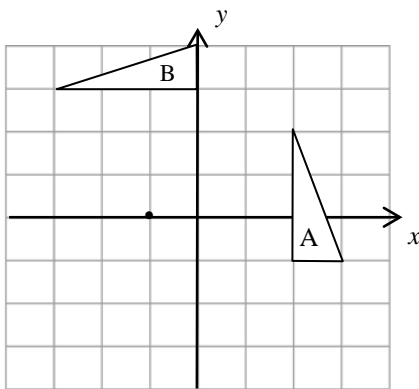


Reflection in the line $y = x$



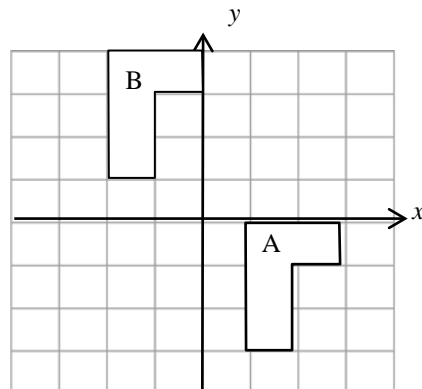
Reflection in the line $y = -x$

ROTATION



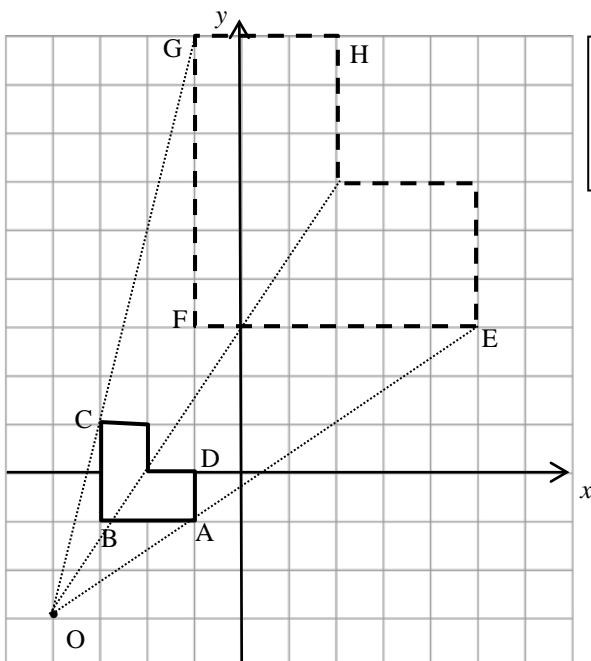
Rotation anticlockwise around the point $(-1, 0)$. A to B

TRANSLATION



Translate -3 units in the direction x
And 4 units in the direction y
Translation of A to B vector form $\begin{pmatrix} -3 \\ 4 \end{pmatrix}$

ENLARGEMENT



Shape ABCD is enlarged to EFGH, by the scale factor of 3 and centre of enlargement $O(-4, -3)$