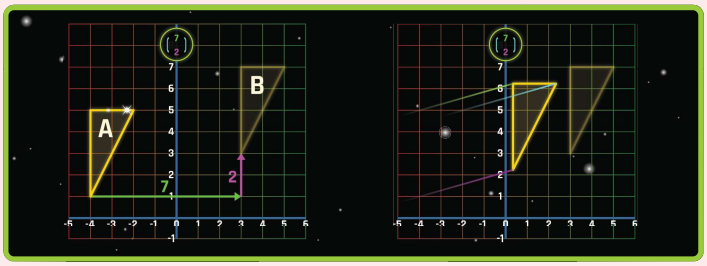
MANGAHIGH
westermann

TRANSFORMATIONS

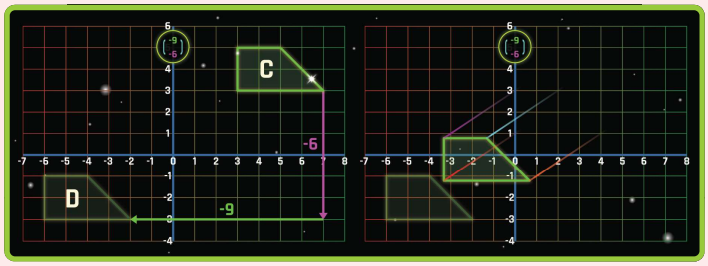
Geometric TRANSFORMATIONS involve taking an 'original' image and transforming it in some way to produce a 'new' image

A TRANSLATION moves every point on a shape the same distance and the same direction



A TRANSLATION of A to B is expressed as a vector $\begin{pmatrix}7\\2\end{pmatrix}$

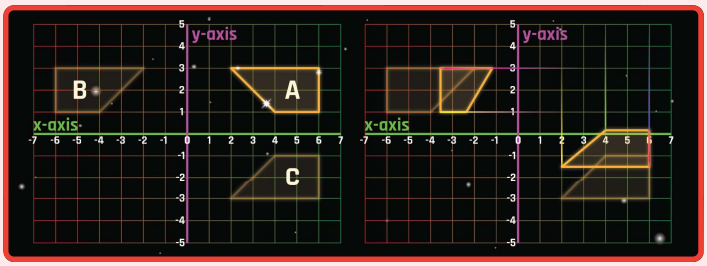
This means, move the original image (A) 7 units horizontally, and 2 units vertically, to form the new image (B).



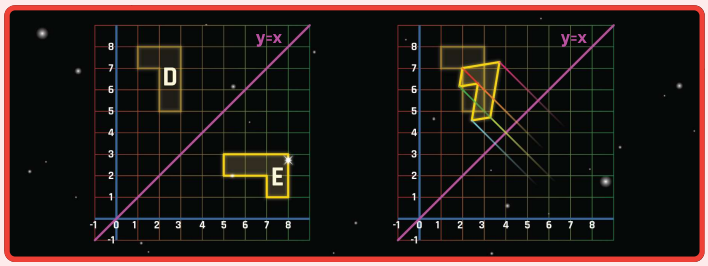
A TRANSLATION of C to D is expressed as a vector $\begin{pmatrix}-9\\-6\end{pmatrix}$

This means, move the original image (C) -9 horizontally, and -6 units vertically, to form the new image (D).

A REFLECTION produces a mirror image of a shape along a line of reflection



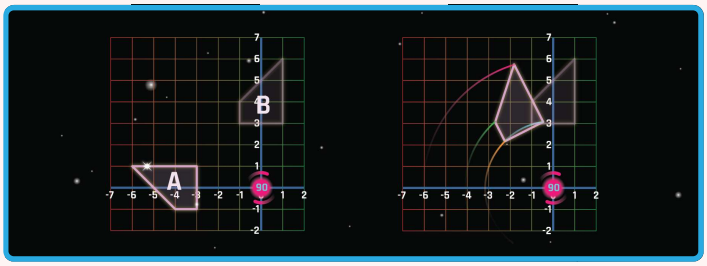
B is a REFLECTION of A across the y-axis
C is a REFLECTION of A across the x-axis



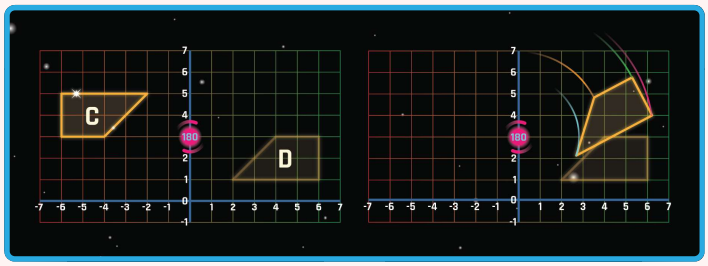
D is a REFLECTION of E across the y=x axis

A ROTATION turns a shape about a fixed point. To perform a rotation, consider these three elements:

❶ The centre of rotation. ❷ The angle of rotation. ❸ The direction of rotation.



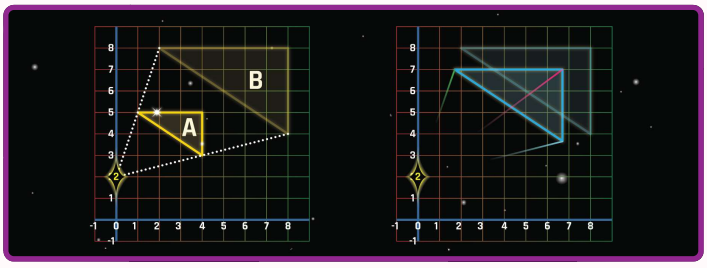
Shape B is a ROTATION of shape A 90° clockwise about the origin (0, 0).



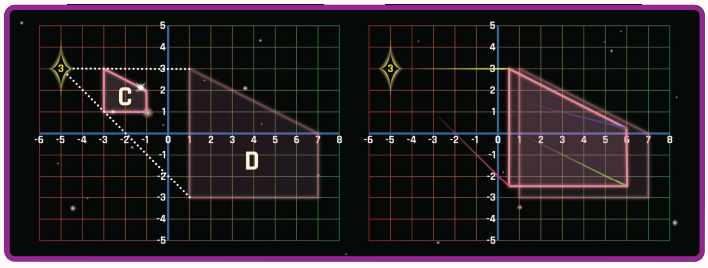
Shape D is a ROTATION of shape C 180° clockwise about the origin (4, 0)

A ENLARGEMENT changes the size of the shape. To perform an enlargement, consider these two elements:

❶ The centre of enlargement – the point from which the object is enlarged. ❷ The scale factor- the size of the enlargement



Shape B is an ENLARGEMENT of shape A by a scale factor of 2, centre (0,2)



Shape D is an ENLARGEMENT of shape C by a scale factor of 3, centre (-5,3)

Following enlargement, the shapes are similar. This means the shapes are not the same size, but the angles are the same, and side lengths are proportionate.

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