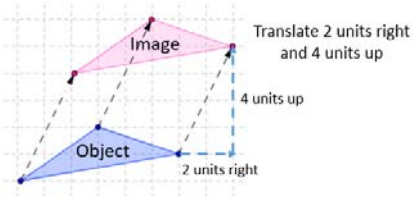
Maths Knowledge Organiser
Year 10 (F) Transformations

Transformations

In geometry, transformation refers to the movement of objects in the coordinate plane. The four types are: translation, reflection, rotation and enlargement.

Translation

"Translation" simply means moving without rotating, resizing or anything else,

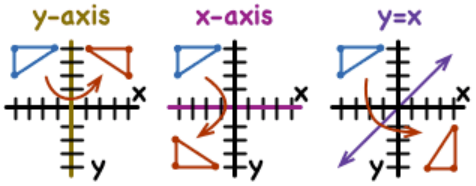


Column vectors

$$\begin{pmatrix} -\leftrightarrow + \\ + \\ \updownarrow \\ - \end{pmatrix}$$

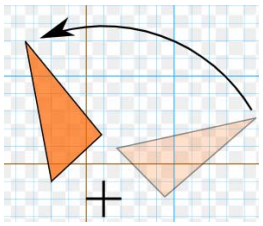
Reflection

“Reflection” is where a shape is flipped over a reflection line to produce an image



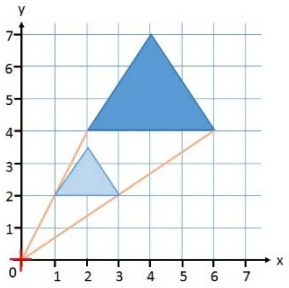
Rotation

“Rotation" is a circular movement. It has a central point that stays fixed and everything else moves around that point in a circle

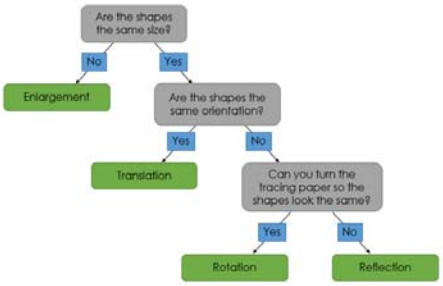


Enlargement

“Enlargement” sometimes called scaling or dilation, is a kind of transformation that changes the size of an object

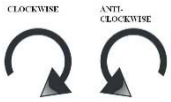


Describing transformations



Translation

Use a column vector to describe how far right/left and up/down the object has travelled.



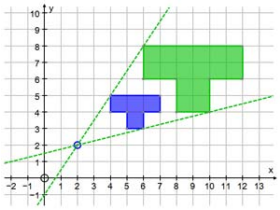
Rotation

Identify which direction to object has turned and how far (90°, 180° and 270°). Also use tracing paper and trial and error to find the centre of rotation.

Reflection

Draw the mirror line between the 2 shapes so its exactly in the middle, count the squares to help. Then identify the equation of that line.

Enlargement



Identify 2 corresponding sides and divide to find the scale factor. Then join corners of the 2 shapes and extend to find the centre of enlargement.