Transformations

by becca firman

What are transformations ?

There are four types of transformation translation, rotation, reflection and finally dilation
A transformations meaning is basically size or position of a shape and every point is translated the same distance in the same direction

Rotation

Rotation is a circular movement of an object around its center point its rotation is infinitive so it can always rotate due to the imaginary line known as the rotation axis
The rotation itself can only happen if you know the the centre of rotation, the angle of rotation and of course the direction whether its anticlockwise or clockwise a rotation is also the same as composition of reflections over intersecting lines. At the bottom of the page there's an example of this

Translation

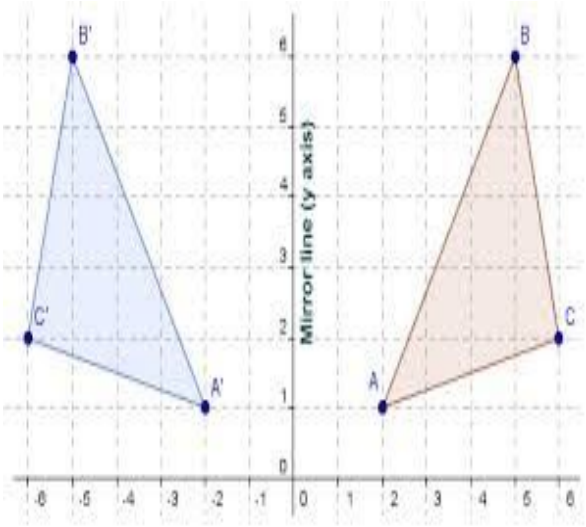
A translation can move an object or a shape up, down or to the side but it does not change its size or appearance . translations are often referred to as slides and they are usually described in question like " move up 3 and right 7 "
Translation is also a form of geometry. To do a translation the object must be moved in the same direction and for the same distance otherwise the shape will change and it will not be classified as a translation

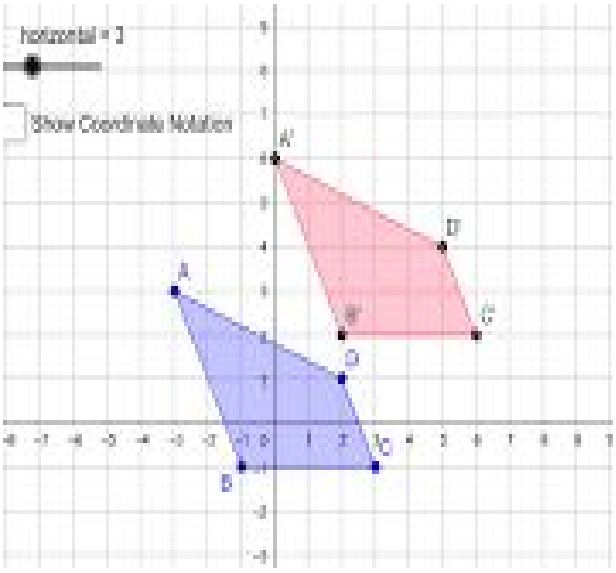
Reflection

A reflection is like placing a mirror on a page when describing a reflection you also must state a line in which the shape was reflected on. the line of reflection will be the same as the distance as the reflected point of the line. A cool thing about reflection is that it doesn't just happen on a piece of squared paper you see them in water reflecting of something else

dilation

Dilation is when you change a shape's size. The scale factor, sometimes called the scalar factor, measures how much larger, smaller, longer or wider the image or shape is. If the scale factor is 1 the image is an enlargement (a stretch). If the scale factor is between 0 and 1. The image is a reduction (a shrink)
To make a dilation smaller you multiply each of the coordinates in the coordinate plane by ½ it would of obviously eb a reduction because when you multiply something by 1 you get a smaller number





The one at the top is an example of reflection as you can see on the image in the middle there's a mirror line this is where you reflect so on the pink image it two squares a way at point and on the blue image its the same so it is a reflection

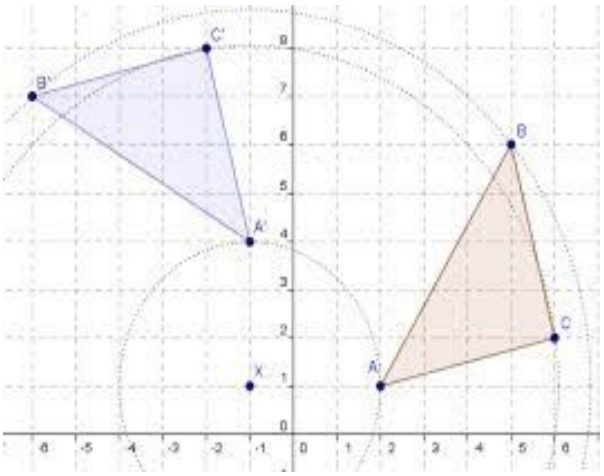
The image below that is an example of translation where they've moved the points up and to the right a bit you can see that the image itself has stayed the same

So what transformations are similar?

Well the transformations that are similar are reflection, rotation and translation due to the fact that the size will always stay the same even when there being moved, rotated and reflected in the image itself won't change appearance or size.

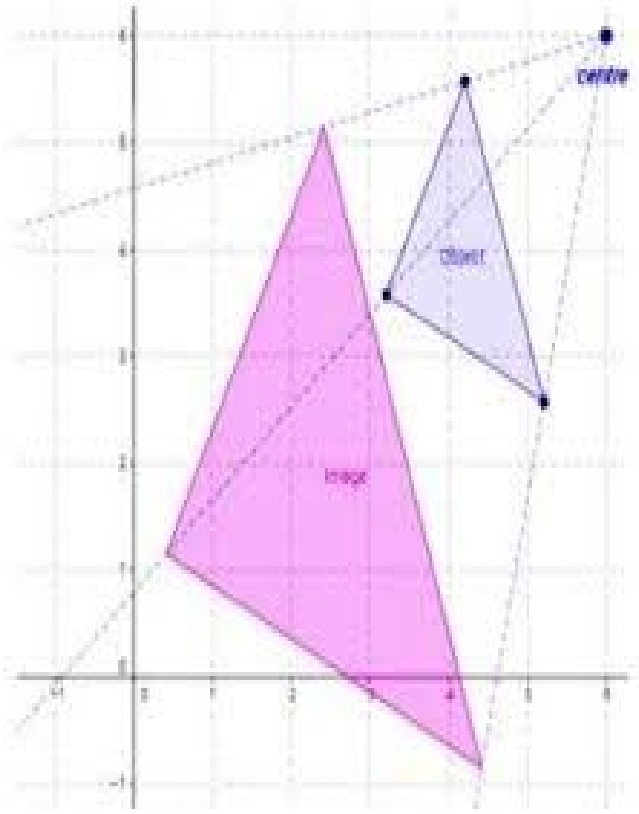
What transformation is the odd one out ?

The transformation that's the odd one out is dilation in my opinion as the size changes and so does the appearance which is basically what the other transformations will never do



Rotation

The centre circle is where both the points join up and you couldn't do a rotation without it



Diation

"The odd one out " where you enlarge a shape