Maths Knowledge Organiser 9A2a: Transformations

Reflections

Reflection	The size does not change, but the shape is 'flipped'	Reflect shape C in the line $y = x$
	like in a mirror .	
	Line $x = ?$ is a vertical line. Line $y = ?$ is a horizontal line. Line $y = x$ is a diagonal line.	y B B C C B C C C C C C C C C C C C C C
		y=x/ 4-

Rotations

Rotation	The size does not change, but the shape is turned around a point.	Rotate Shape A 90° anti-clockwise about (0,1)
	Use tracing paper.	X. A.

Translations

Translation	Translate means to move a shape. The shape does not change size or orientation.	Q R 3 3 4 P Q' 4 P' 4 P' 4 P' 4 P' 4 P' 4 P' 4
Column Vector	In a column vector, the top number moves left (-) or right (+) and the bottom number moves up (+) or down (-)	$\binom{2}{3}$ means '2 right, 3 up' $\binom{-1}{-5}$ means '1 left, 5 down'

Enlargements

Enlargement	The shape will get bigger or smaller . Multiply each side by the scale factor .	Scale Factor = 3 means '3 times larger = multiply by 3'
		Scale Factor = ½ means 'half the size = divide by 2'
Finding the Centre of Enlargement	Draw straight lines through corresponding corners of the two shapes. The centre of enlargement is the point where all the lines cross over. Be careful with negative enlargements as the corresponding corners will be the other way around.	A to B is an enlargement SF 2 about the point (2,1)

Describing Transformations

Describing	Give the following information when describing each	- Translation, Vector
Transformations	transformation: Look at the number of marks in the question for a hint of how many pieces of information are needed. If you are asked to describe a 'transformation', you need to say the name of the type of transformation as well as the other details.	- Rotation, Direction, Angle, Centre - Reflection, Equation of mirror line - Enlargement, Scale factor, Centre of enlargement