

RULES OF TRANSFORMATIONS

REFLECTIONS

If a point (x, y) is reflected over the **y-axis**, the new coordinates will be $(-x, y)$.

Example: If $(3, -4)$ is reflected over the y-axis, the new coordinates will be $(-3, -4)$.

If a point (x, y) is reflected over the **x-axis**, the new coordinates will be $(x, -y)$.

Example: If $(3, -4)$ is reflected over the x-axis, the new coordinates will be $(3, 4)$.

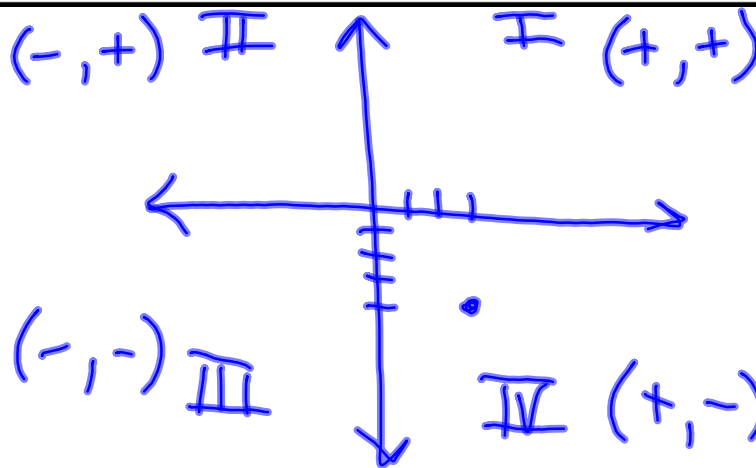
If a point (x, y) is reflected over the line **$y = x$** , the new coordinates will be (y, x) .

Example: If $(3, -4)$ is reflected over the line $y = x$, the new coordinates will be $(-4, 3)$.

If a point (x, y) is reflected over the line **$y = -x$** , the new coordinates will be $(-y, -x)$.

Example: If $(3, -4)$ is reflected over the line $y = -x$, the new coordinates will be $(4, -3)$.

ROTATIONS	<p>If a point (x, y) is rotated about the origin 90°, the new coordinates will be $(-y, x)$.</p> <p>Example: If $(3, -4)$ is rotated about the origin 90°, the new coordinates will be $(4, 3)$.</p>
	<p>If a point (x, y) is rotated about the origin 180°, the new coordinates will be $(-x, -y)$.</p> <p>Example: If $(3, -4)$ is rotated about the origin 180°, the new coordinates will be $(-3, 4)$.</p>
	<p>If a point (x, y) is rotated about the origin 270°, the new coordinates will be $(y, -x)$.</p> <p>Example: If $(3, -4)$ is rotated about the origin 270°, the new coordinates will be $(-4, -3)$.</p>



DILATIONS	<p>If a point (x, y) is dilated about the origin by a scale factor of k, the new coordinates will be (kx, ky).</p> <p><i>Example:</i> If $(3, -4)$ is dilated about the origin by a scale factor of 2, the new coordinates will be $(6, -8)$.</p>

TRANSFORMATION	PRESERVES ORIENTATION	PRESERVES LENGTH	PRESERVES ANGLE MEASURES	PRESERVES SLOPE
Reflection		✓	✓	
Rotation	✓	✓	✓	
Dilation	✓		✓	✓

