

Reflections in the Coordinate plane

Type of Reflection	Point	Becomes
Reflection over the x-axis	(a, b)	(a, -b)
Reflection over the y-axis	(a, b)	(-a, b)
Reflection over the $y = x$ line	(a, b)	(b, a)
Reflection over the $y = -x$ line	(a, b)	(-b, -a)
Point reflection at the origin (0, 0)	(a, b)	(-a, -b)

Rotations

When a rotation occurs the object is revolved around a fixed point called the ***center of rotation***. The ***angle of rotation*** is the angle about which the object is rotated. Rotations can be either clockwise or counterclockwise – and around any point in the plane.

Translations

In a translation or a slide, an object is shifted in a specific direction and distance (with no change in size). On a coordinate plane, if the object is translated right (+) or left (-), the x-coordinate will change by the number of units it is moved. If the object is translated up (+) or down (-), the y-coordinate will change by the number of units it is moved.