Review of Transformation Mappings

$$r_{\text{x-axis}}\ (x, y) \longrightarrow (x, -y)$$
$$r_{\text{y-axis}}\ (x, y) \longrightarrow (-x, y)$$
$$r_{y = x}\ (x, y) \longrightarrow (y, x)$$
$$r_{y = -x}\ (x, y) \longrightarrow (-y,-x)$$
$$r_{\text{origin}}\ (x, y) \longrightarrow ((-x, -y)$$

$$T_{(a, b)}\ (x, y) \longrightarrow (x + a, y + b)$$

$$R_{(0,0)\ 90^\circ}\ (x, y) \longrightarrow (-y, x)$$
$$R_{(0,0)\ 180^\circ}\ (x, y) \longrightarrow (-x, -y)$$
$$R_{(0,0)\ 270^\circ}\ (x, y) \longrightarrow (y, -x)$$

$$D_{(0,0)\ k}\ (x, y) \longrightarrow (kx, ky).$$
$$D_{(a,b)\ k}\ (x, y) \longrightarrow (a + k(x-a), b + k(y-b)))$$