

Transformation Rules

Line Reflections

$$\Gamma_{x\text{-axis}}(x, y) = (x, -y)$$

$$\Gamma_{y\text{-axis}}(x, y) = (-x, y)$$

$$\Gamma_{y=x}(x, y) = (y, x)$$

$$\Gamma_{y=-x}(x, y) = (-y, -x)$$

Rotation - Counter clockwise

$$R_{90^\circ}(x, y) = (-y, x)$$

$$R_{180^\circ}(x, y) = (-x, -y)$$

$$R_{270^\circ}(x, y) = (y, -x)$$

Translations

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

Dilation

$$D_k(x, y) = (kx, ky)$$