Transformation Rules Sheet

Line Reflections:

$$r_{x-axis}(x, y) = (x, -y)$$
$$r_{y-axis}(x, y) = (-x, y)$$
$$r_{y=x}(x, y) = (y, x)$$
$$r_{y=-x}(x, y) = (-y, -x)$$

Point Reflection:

$$R_{180°}(x, y) = (-x, -y)$$

Rotations:

$$R_{90°}(x, y) = (-y, x)$$
$$R_{180°}(x, y) = (-x, -y)$$
$$R_{270°}(x, y) = (y, -x)$$
$$R_{-90°}(x, y) = (y, -x)$$

Translation:

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

Dilation:

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