

TRANSFORMATIONS

TRANSLATION → SLIDE

$(x + \#, y) \rightarrow$ Right

$(x - \#, y) \rightarrow$ Left

$(x, y + \#) \rightarrow$ Up

$(x, y - \#) \rightarrow$ Down

REFLECTION → FLIP

x-axis: $(x, y) \rightarrow (x, -y)$ Change the sign of y

y-axis: $(x, y) \rightarrow (-x, y)$ Change the sign of x

y = x: $(x, y) \rightarrow (y, x)$ Swap both

y = -x: $(x, y) \rightarrow (-y, -x)$ Swap & Negate

ROTATION → TURN

90 CW & 270 CCW: $(x, y) \rightarrow (y, -x)$ Negate x & swap

90 CCW & 270 CW: $(x, y) \rightarrow (-y, x)$ Negate y & swap

180 either way: $(x, y) \rightarrow (-x, -y)$ Negate both

TRANSLATION

REFLECTION

ROTATION