Rules for translations:

Example:
Translate 4 units right and 7 units down:

(x,y) ⟶ (x+4, y−7)

Every translation is different
so there are no generic rules
for translations.

Get a sheet of graph paper and a ruler.

Rules for Reflections:

Reflect over the x-axis:

(x,y) ⟶ (x, −y)

Reflect over the y-axis:

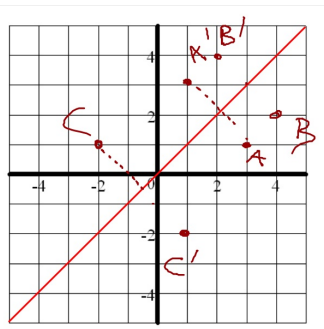
(x,y) ⟶ (−x, y)

Reflecting over any other line y = x.

(x,y) ⟶ (y,x)

Reflecting over the line y= -x

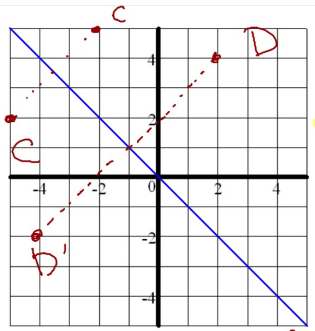
(x,y) ⟶ (−y, −x)



Reflect over:
y = x

(x,y) ⟶ (y,x)

A(3,1)	1,3
B(4,2)	(2,4)
C(−2,1)	(1,−2)



Reflect over:
y = -x

(x,y) ⟶ (−y, −x)

A(−3,−1)	A'(1 3)
B(1,1)	B(−1,−1)
C(−5,2)	C(−2,5)
D(2,4)	D'(−4,−2)

Rules for Rotations on the x-y plane:

Rotate 90° CCW (same as 270° CW)

(x,y) ⟶ $(-y, x)$

Rotate 270° CCW (same as 90° CW)

(x,y) ⟶ $(y, -x)$