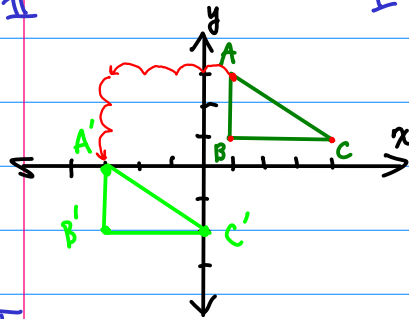


# Intro to Transformations, Translation

## Basic Xformations

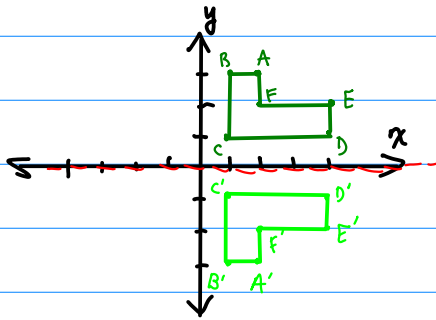
### Translation



Translate  $\triangle ABC$  left 4 units & down 3 units.

→ Shift/slide an image  
↑/↓, ←/→

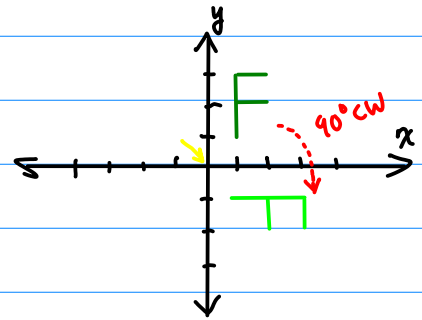
### Reflection



Reflect polygon ABCDEF in/over the  $x$ -axis.

→ flip an image over a line of reflection

### Rotation



Rotate "F" in quadrant I  $90^\circ$  clockwise  $\odot$

→ turn an image around a pt.

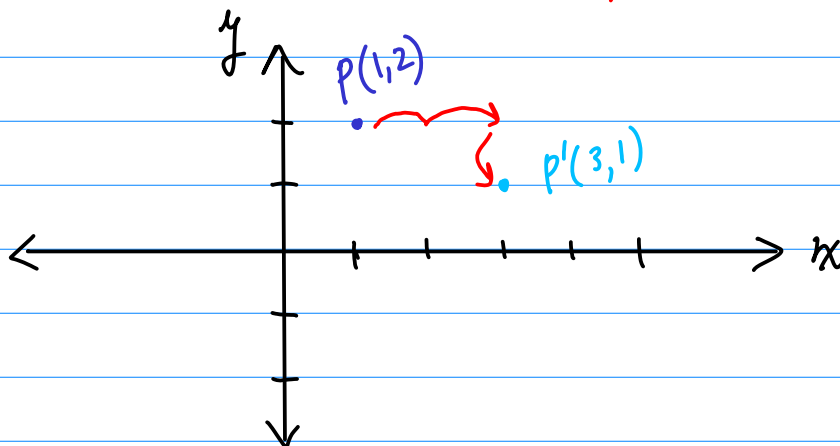
## \* Translation

Ex: Translate  $P(1, 2)$  according to this rule:

$$\overset{1}{(x, y)} \xrightarrow{\overset{2}{}} \overset{3}{(x + 2, y - 1)} \Rightarrow$$

~~X~~ or →      ~~X~~ or ↓

In words:  
RIGHT 2 units,  
Down 1 unit



Ex: Describe, in words, the translation:

a)  $(x, y) \longrightarrow (x, y+6)$  UP 6 units.  
 ~~$\leftarrow$~~   $\uparrow 6$

b)  $(x, y) \longrightarrow (x-5, y-7)$  LEFT 5 units,  
DOWN 7 units  
 $\leftarrow$   $\downarrow$

