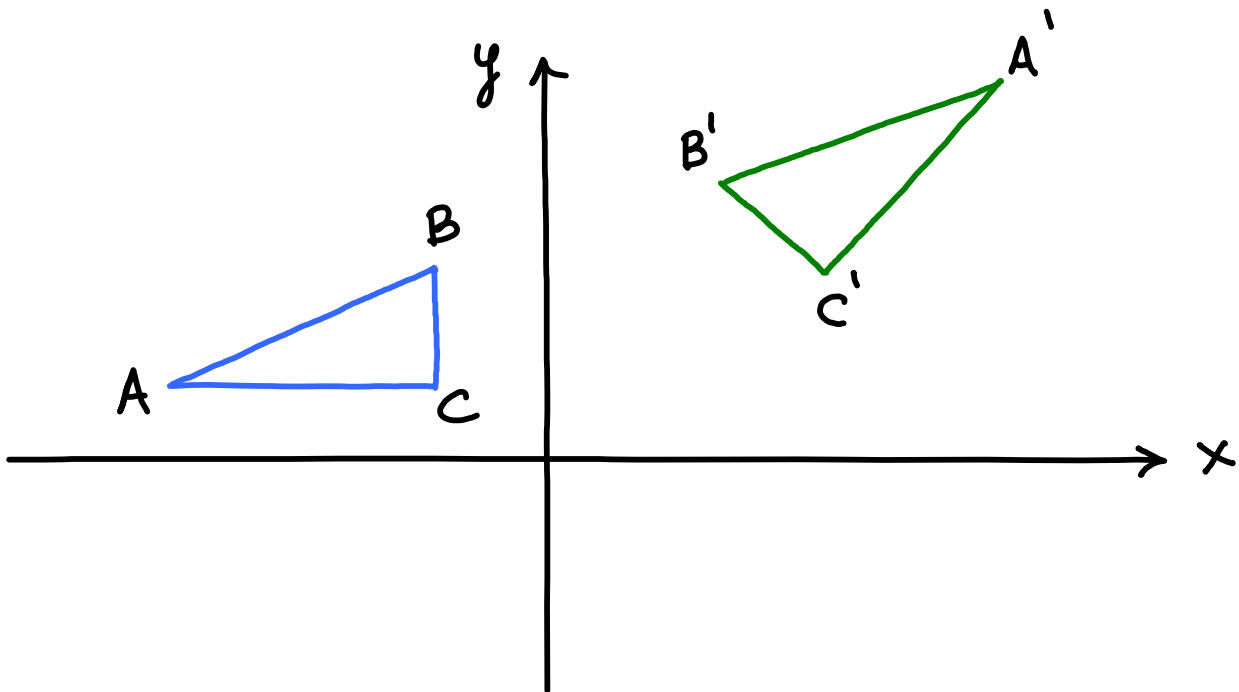


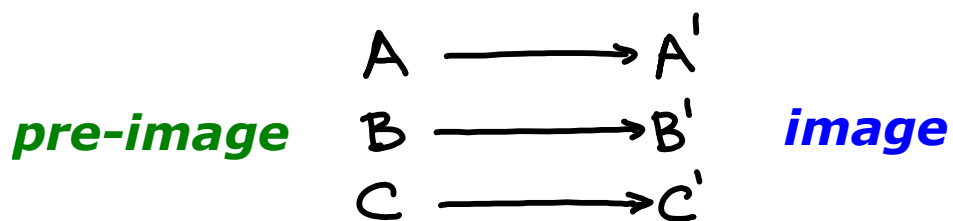
## Chapter Review



### Reflections

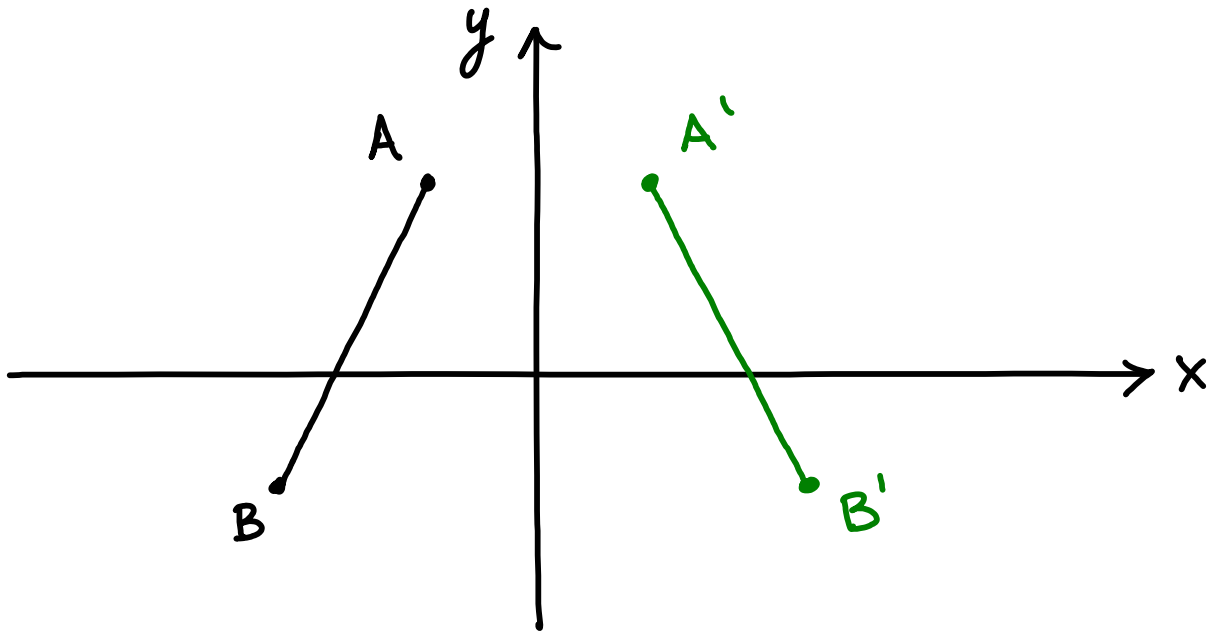


*A transformation is one-to-one mapping*



*Isometry is a transformation with congruent segments*

## Reflections...mirror image



$AA' \perp$  axis of reflection

The axis of reflection is the midpoint between pre-image and image

*a reflection is an isometry*

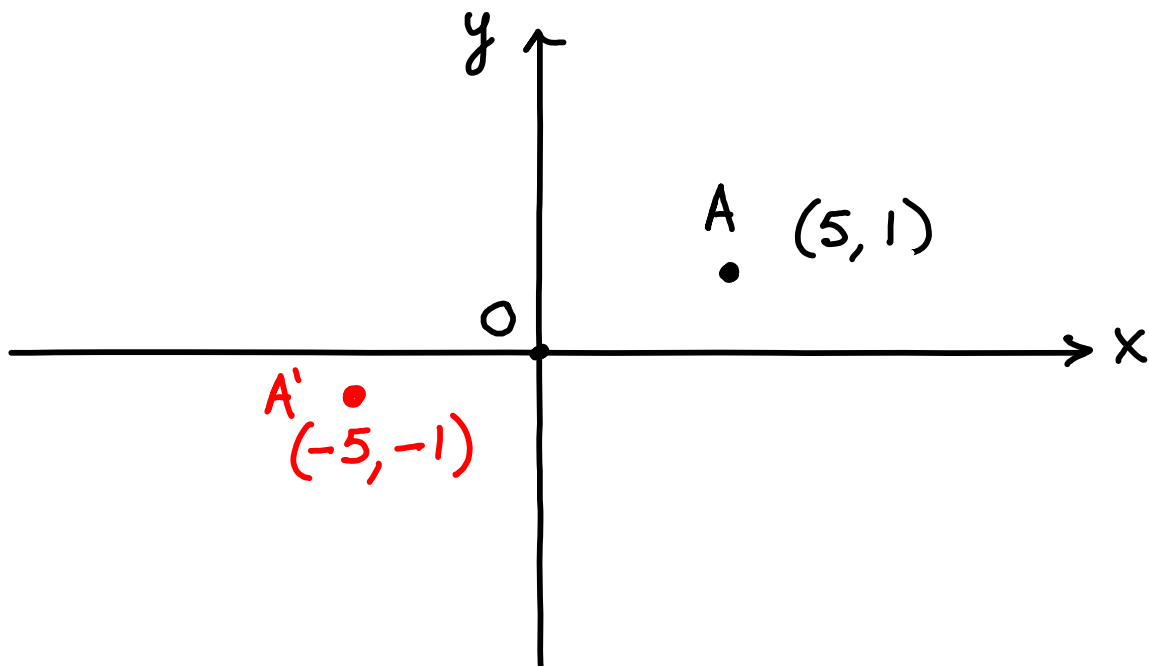


## Rotations and Dilations

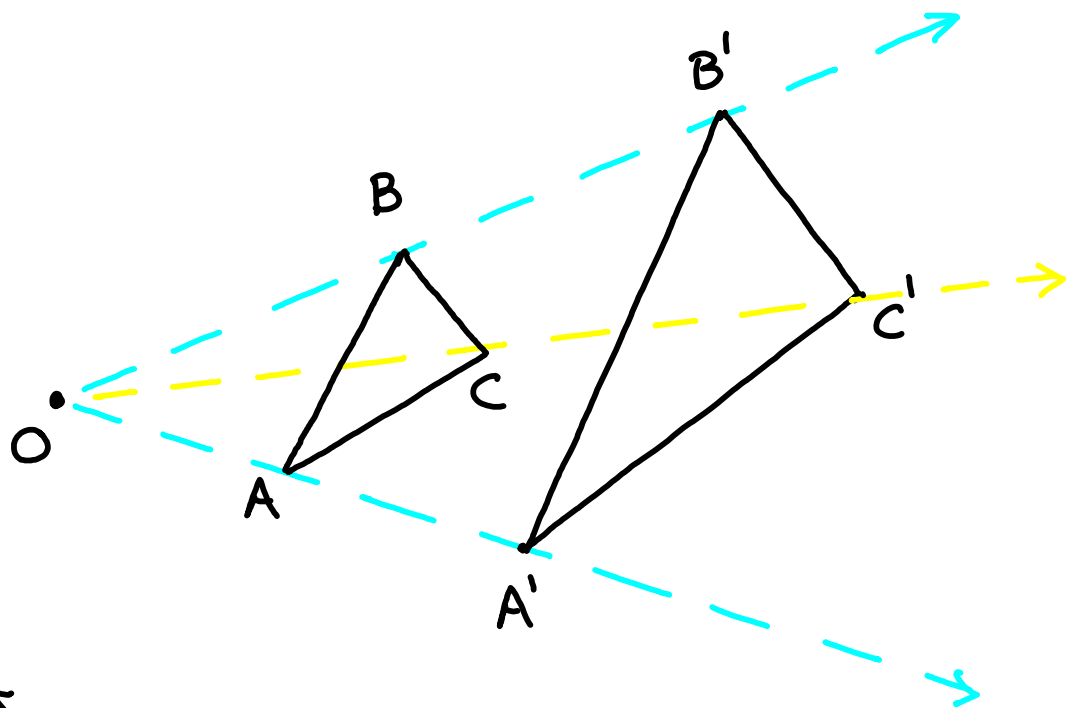
1. Rotations are transformations that rotate an image clockwise or counterclockwise.

### Half-turn

180° ROTATION  $R_O(x, y) \rightarrow (-x, -y)$



a dilation is a transformation that creates a similar image



$D_{O,2}$

scale factor of 2

dilation around center  $O$ .

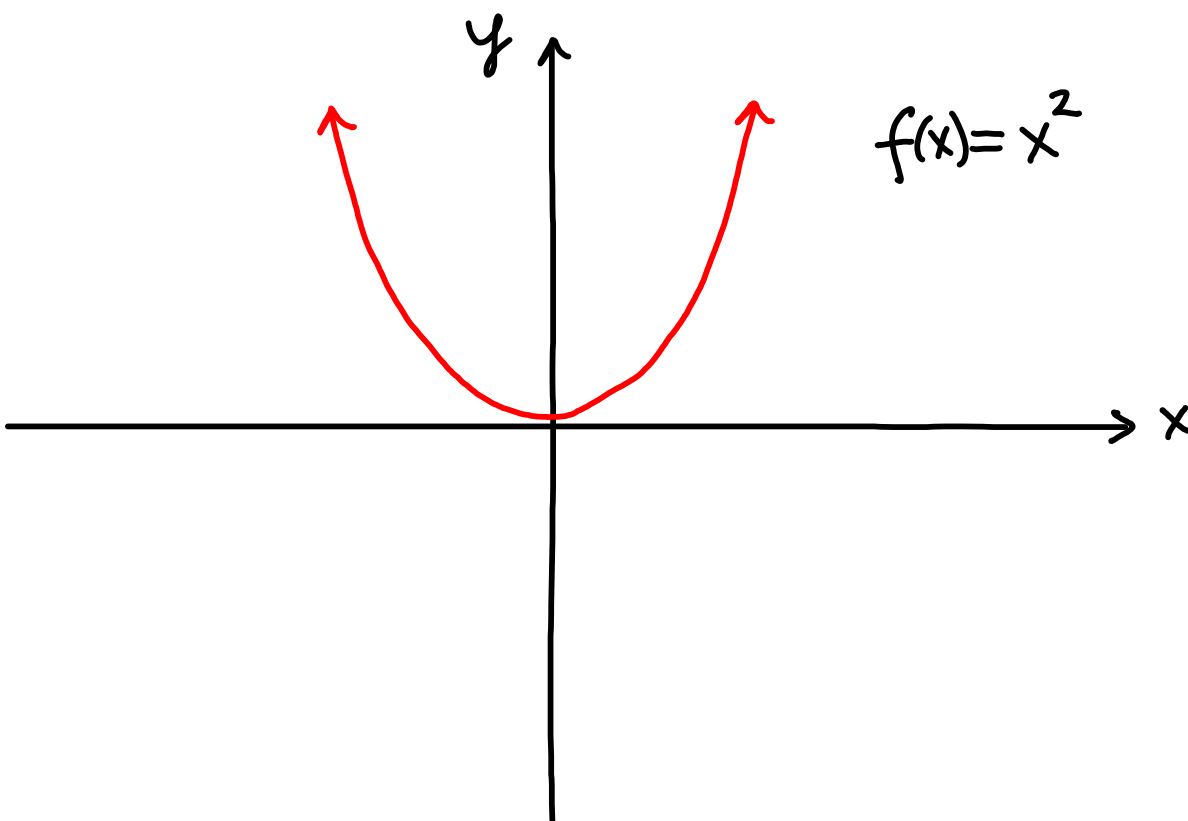
let  $k =$  scale factor of a dilation

$|k| > 1$ , the dilation is an "expansion"

$|k| < 1$ , the dilation is a "contraction"



## Translations and Glide Reflections



A **translation** (glide) is a transformation which maps a point  $(x, y)$  such that:

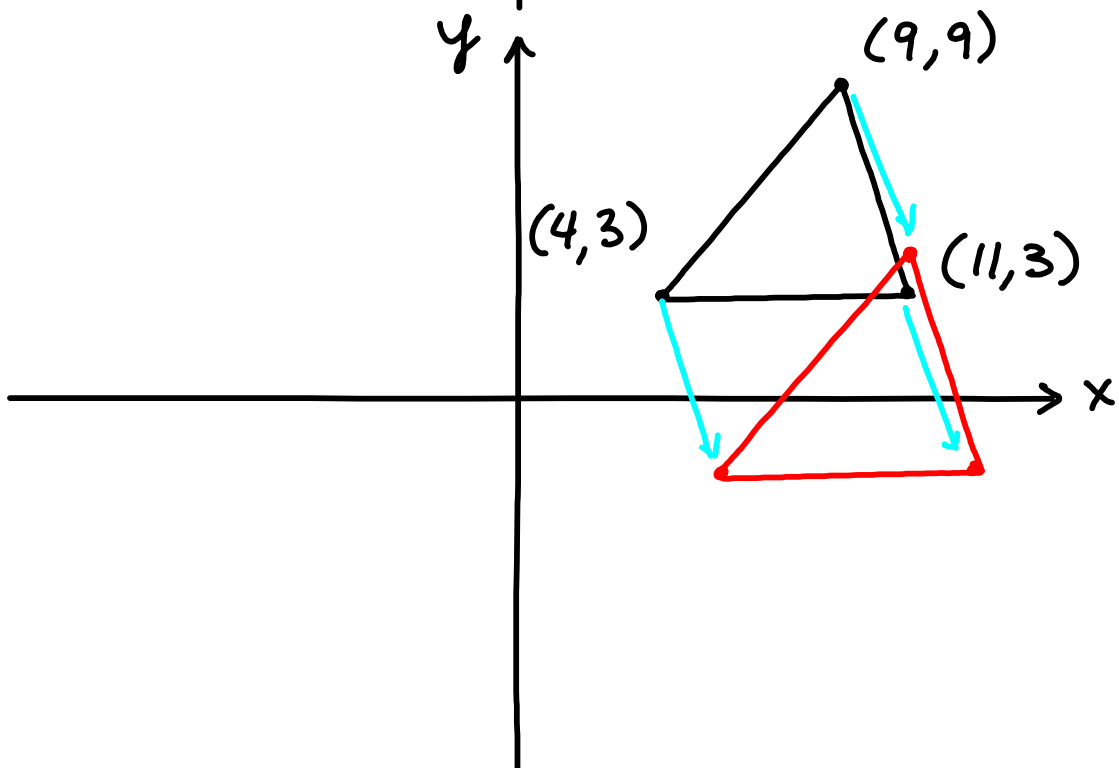
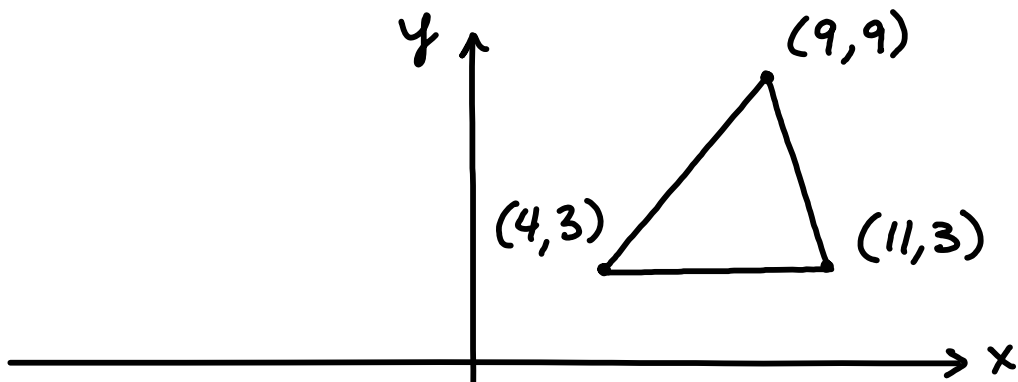
$$(x, y) \longrightarrow (x+a, y+b)$$

$$T: (x, y) \rightarrow (x+2, y-5)$$

$$(4, 3) \rightarrow (6, -2)$$

$$(9, 9) \rightarrow (11, 4)$$

$$(11, 3) \rightarrow (13, -2)$$





## Glide reflections

*A glide reflection is a transformation where both a glide(translation) and a reflection occur; glide first, then reflect.*