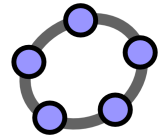


Functions in geometry!



Isometries

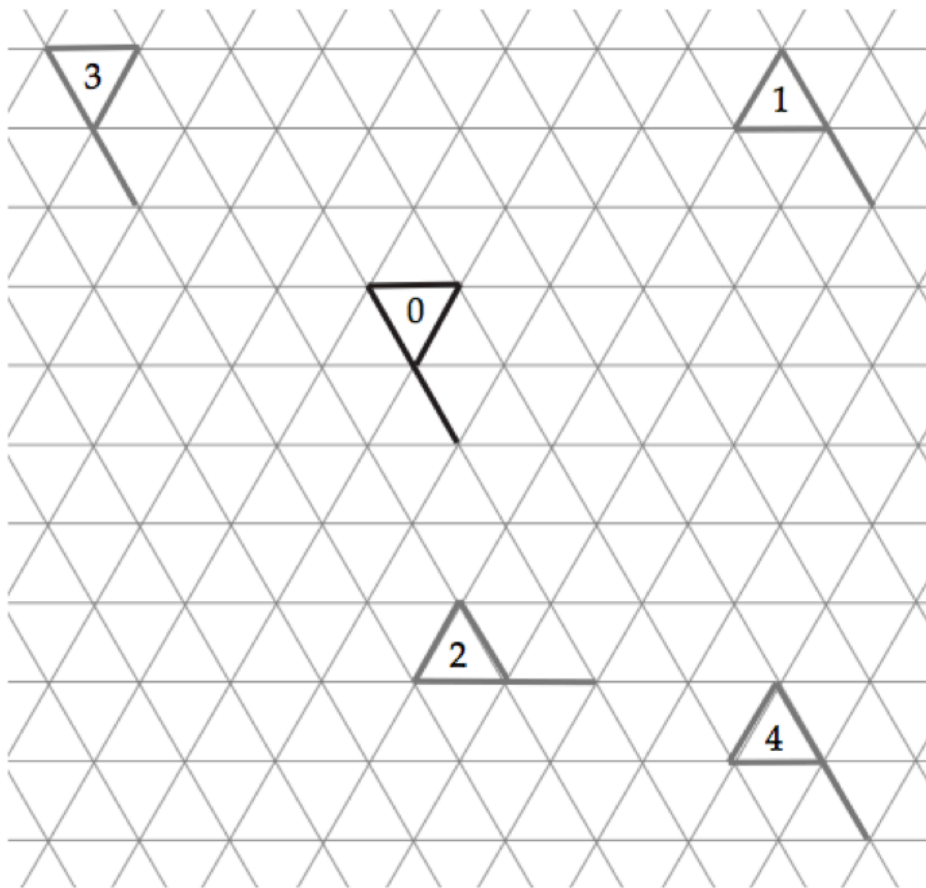
on GeoGebra

kinesthetically

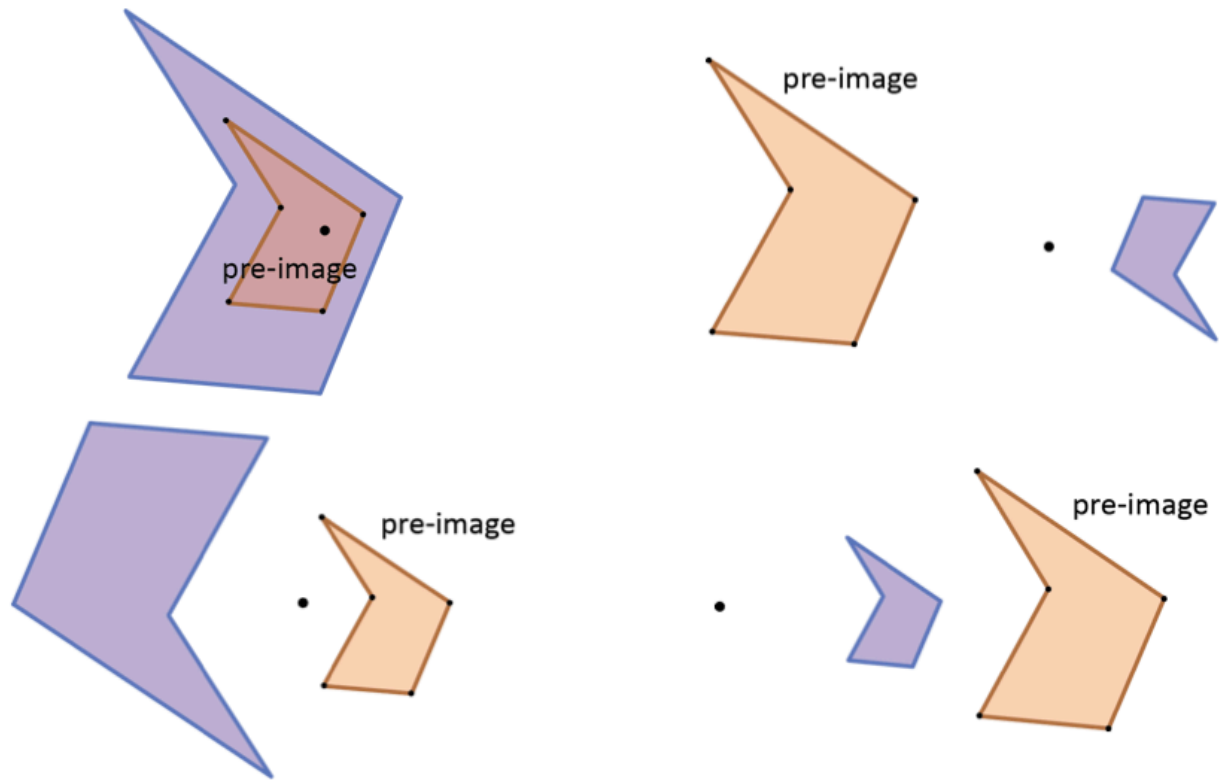
Isometries, pp. 3-4
(hands on)

Isometries, pp. 5-6
(see-through mirrors)

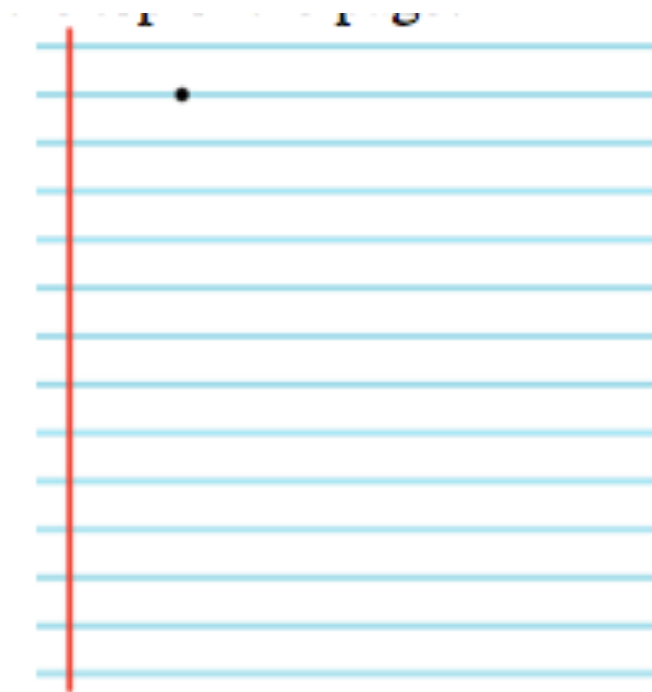
Isometries, p. 7



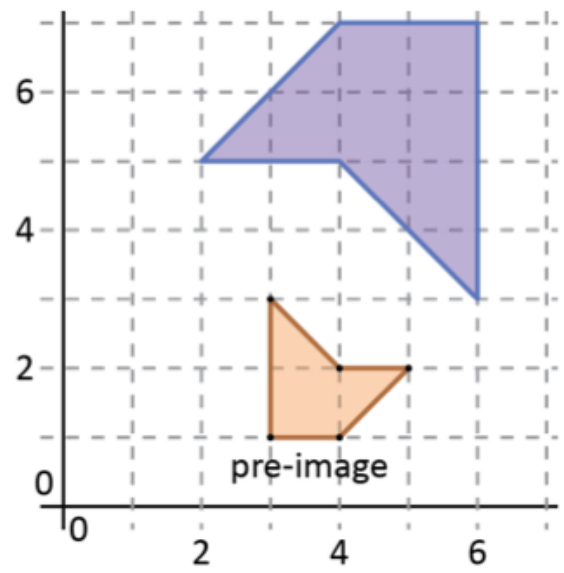
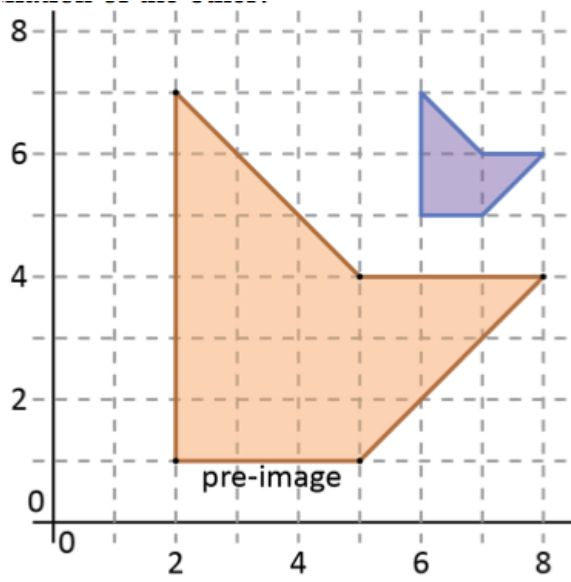
Dilations pp. 3-4



Dilation p. 5



Dilation p. 8



Geometric Mappings

Review:

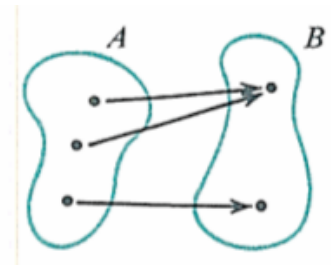
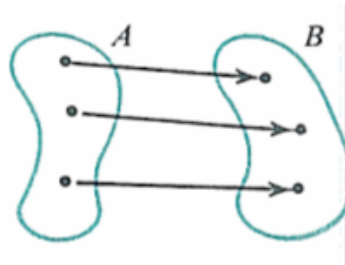
What is a function?

Function notation

Domain and range

Inverse function

One-to-one



Transformation of the plane

Domain: the whole plane

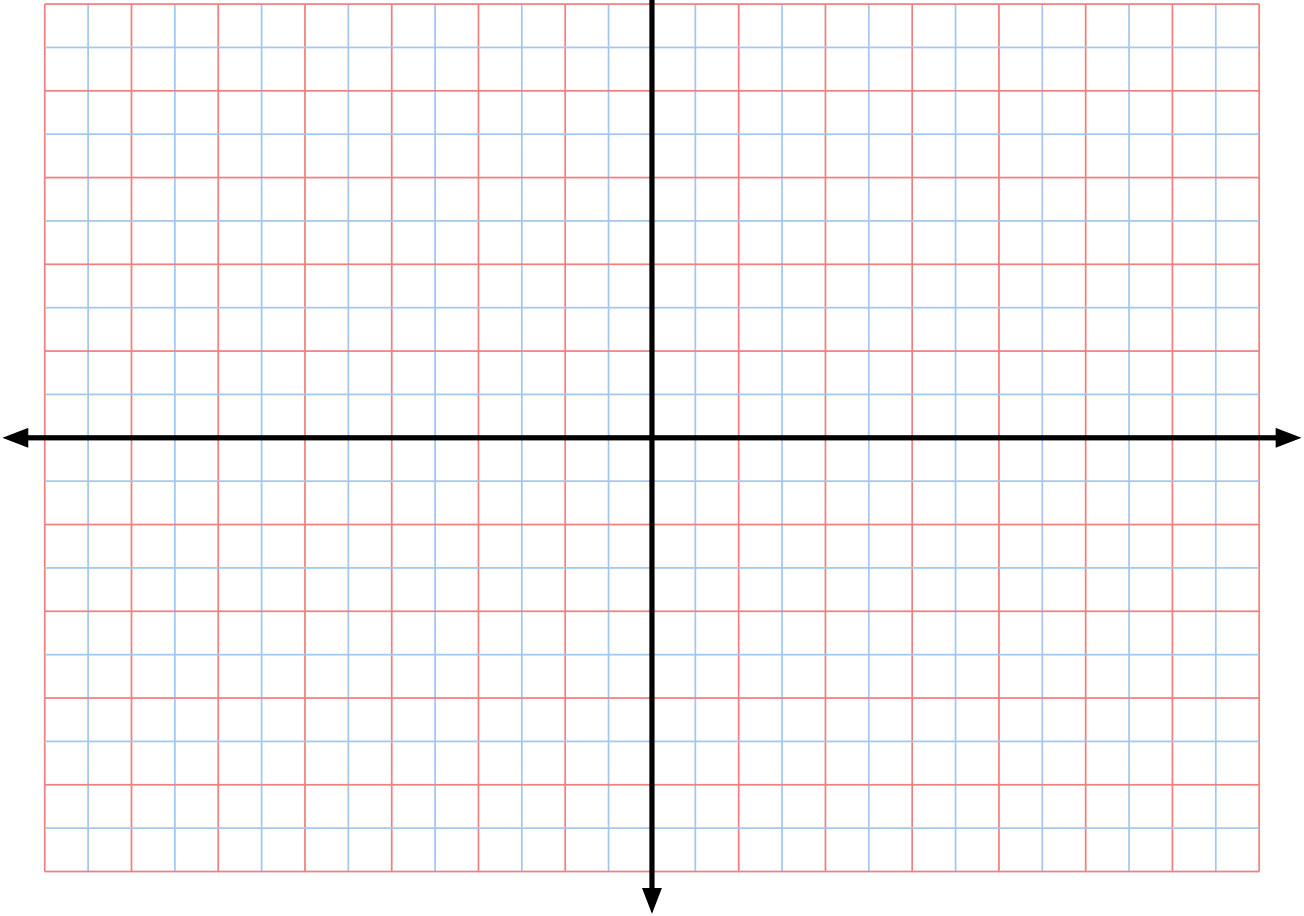
Range: the whole plane

One-to-one

$(x,y) \longrightarrow (2x, y+1)$

pre-image

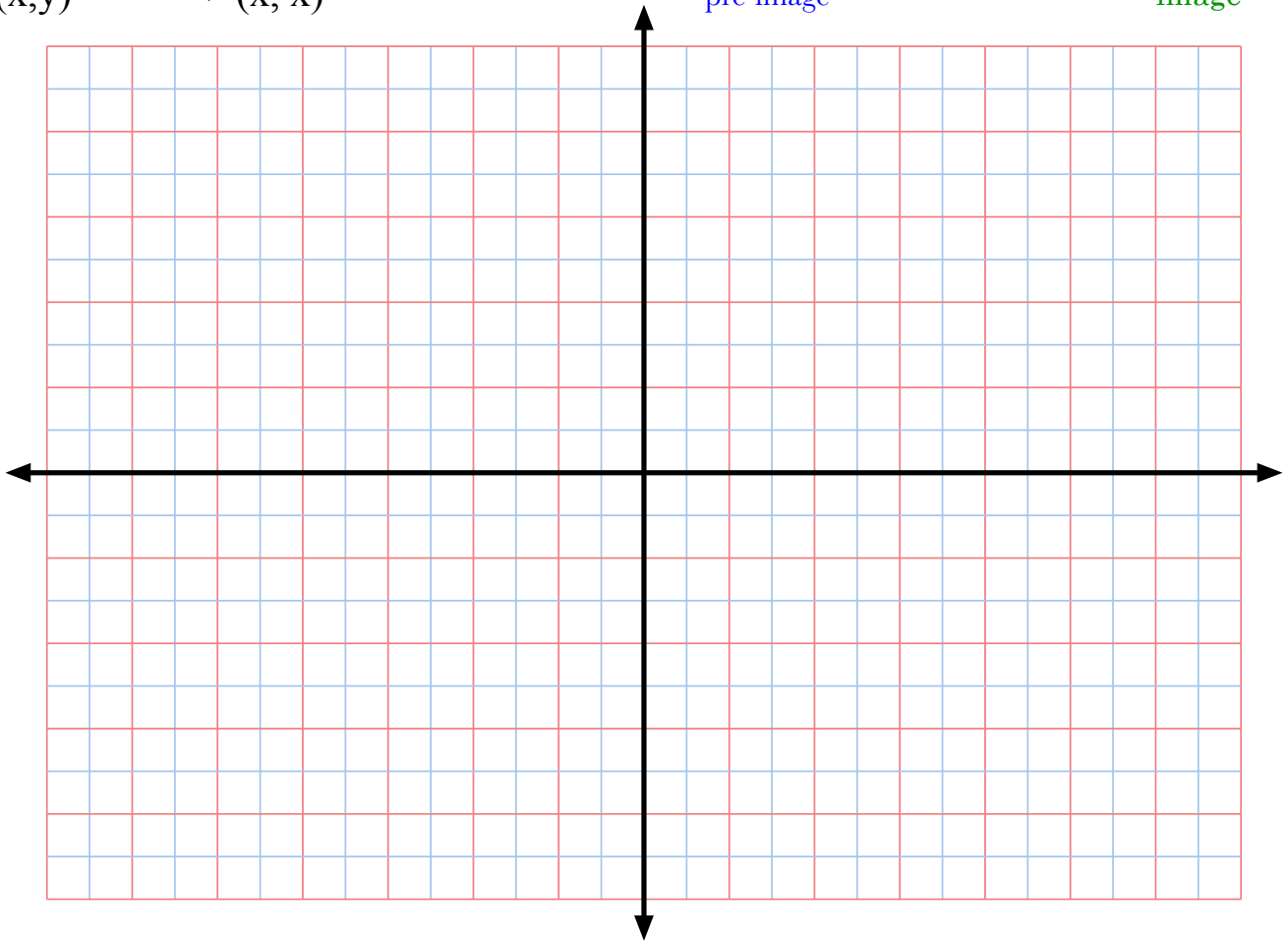
image

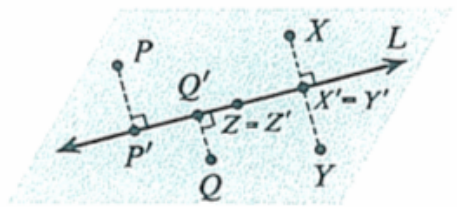
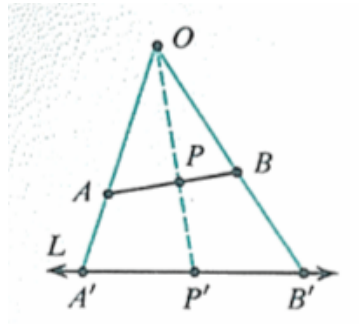


$(x,y) \longrightarrow (x, x)$

pre-image

image





Orientation

What is preserved?

Translation

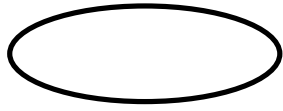
Rotation

Reflection

- a. distance
- b. angles
- c. coordinates
- d. collinearity
- e. parallelism
- f. orientation

Dilation

Handedness



Fixed points

Invariant sets

Inverse mappings

Translation, vector v

Rotation, center O , angle θ

Reflection, line b

Dilation, center O , scaling factor r

Isometries of the Plane, pp. 4-5
(Isometries Specifications)

Isometries of the Plane, p. 6

(Recognizing Isometries)

skip #4

GeoGebra

basics

transformation tools

Isometries of the Plane, pp. 1-2

(Simulating the Transformation Tools)

(Mystery Isometries)

Find the reflection line

Find the center of rotation

Find the glide reflection line