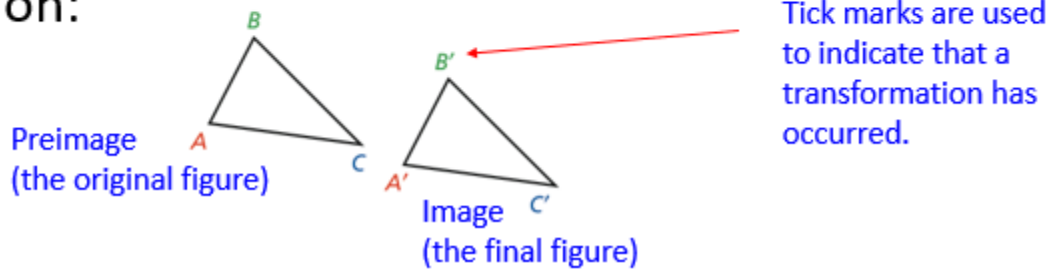


Transformations Notes

Transformations – a change in the position, size, or shape of a figure.

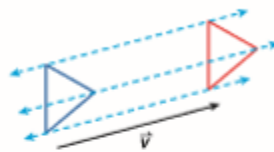
Isometry – a transformation that does not change the size or shape of a figure (a rigid motion)

Notation:

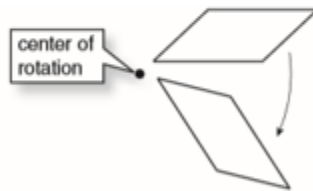


Transformation Types

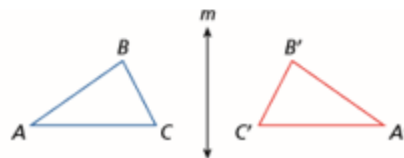
Translation – all points shift in the same direction by the same amount



Rotation – a movement about a point, called the center of rotation



Reflection – a transformation across a line (the line of reflection)



Transformation Rules

Translation

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

Reflections

x-axis

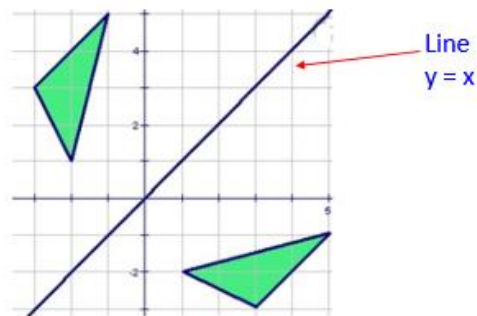
$$(x, y) \rightarrow (x, -y)$$

y-axis

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

Line $y = x$

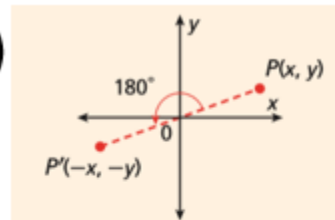
$$(x, y) \rightarrow (y, x)$$



Rotations

Rotate 180° (clockwise or counterclockwise)

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



Rotate 90° clockwise

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

Rotate 90° counterclockwise

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

