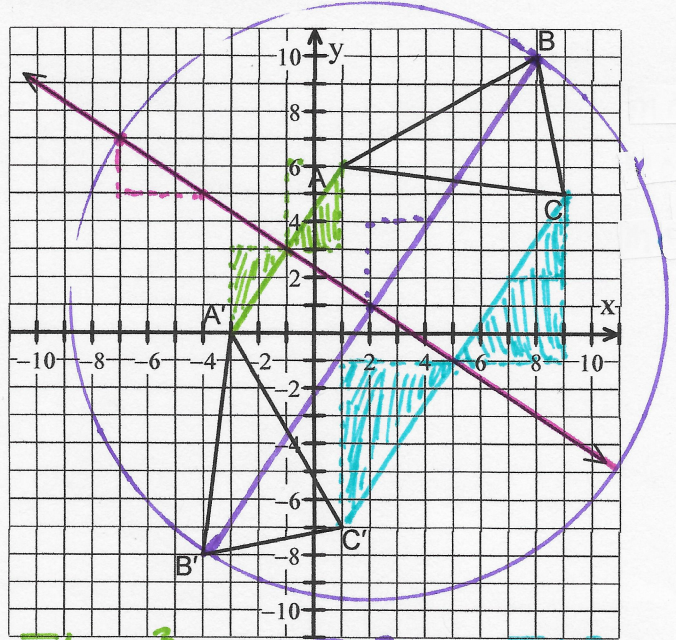# Rigid Transformation
Reflection

Rigid transformation: A movement that _preserves_ the **distance** and **angle measures** of a shape. That is, it _preserves_ the _size_ and _shape_ of the pre-image to the image.

B ↔ ᗺ

Reflection: A transformation that _flips_ a set of points across a specific **Line**
of Reflection such that the line is the <u>perpendicular bisector</u> of segments connecting corresponding points of the pre-image and image.

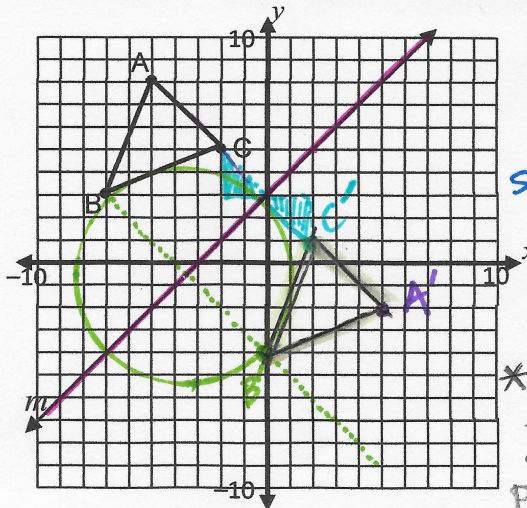A reflection is specifically described by the **Line of Reflection**.

Segments connecting corresponding points of the pre-image to image are:
- Perpendicular to the line of reflection
  (⊥ slopes → opposite reciprocals)
  line of reflection: $m = -\frac{2}{3}$
  slopes of segments: $\perp m = \frac{3}{2}$
- bisected by the line of reflection
  (distance from pre image to L of R is = from L of R to image)
* Pythagorean Thrm or circle

m of $\overline{AA'}$: $m = \frac{3}{2}$; m of $\overline{BB'} = \frac{3}{2}$; m of $\overline{CC'} = \frac{3}{2}$

Example: Reflect △ABC across line _m_ and list the new vertices.

A' : (5, -2)

B' : (0, -4)

C' : (2, 1)

line of reflection:
$m = 1$

segments connecting corresponding preimage & image points
$m = -1$

* If using circle for distance from line of reflection, be sure to center at the point of intersection of the segment & line of reflection, with radius = to distance from pre image to point of intersection.