Rigid Transformation
Translation

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.

Translation: A transformation that moves a set of points the ___Same distance___ along ___lines that are parallel___ to each other.
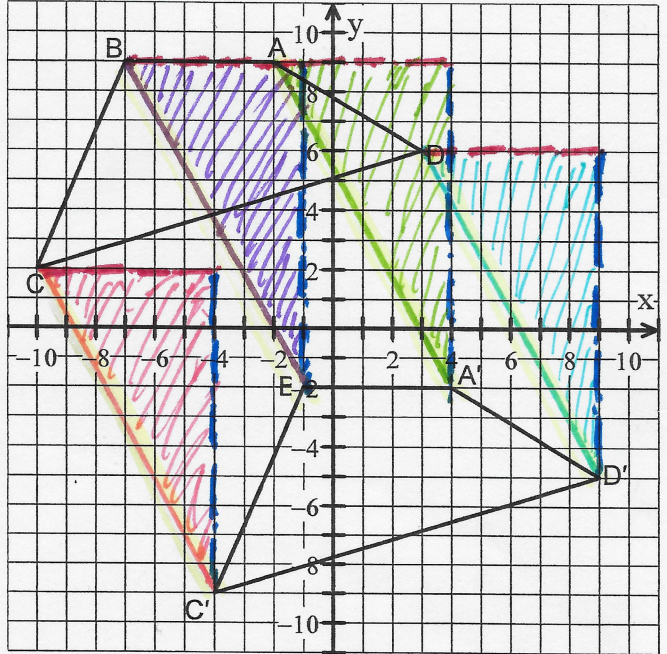
A translation is specifically described by BOTH the **horizontal** and **vertical** movement to **slide** the pre-image to its new position.

$$(x, y) \rightarrow (x+6, y-11)$$

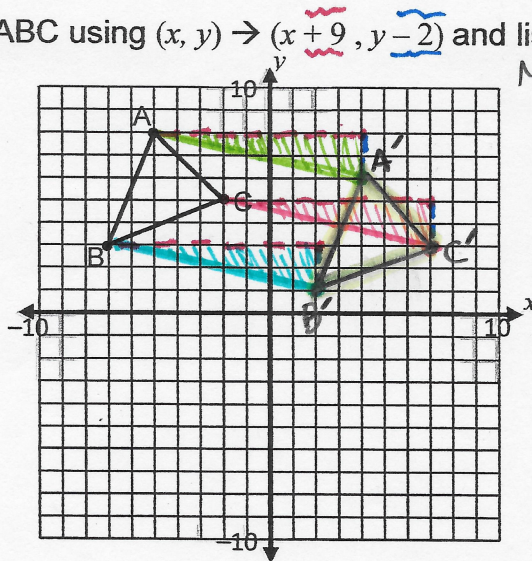Segments connecting corresponding points of the pre-image to image are:

- **parallel (same slope)**
  $$m = \frac{-11}{6}$$

- **same length** (Pythagorean Thm)

Example: Translate $\triangle ABC$ using $(x, y) \rightarrow (x + 9, y - 2)$ and list the new vertices.

Move each point:
right 9 units
down 2 units

A′ : (4, 6)

B′ : (2, 1)

C′ : (7, 3)