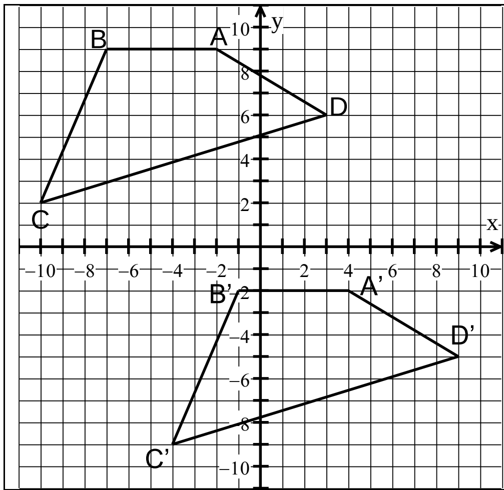
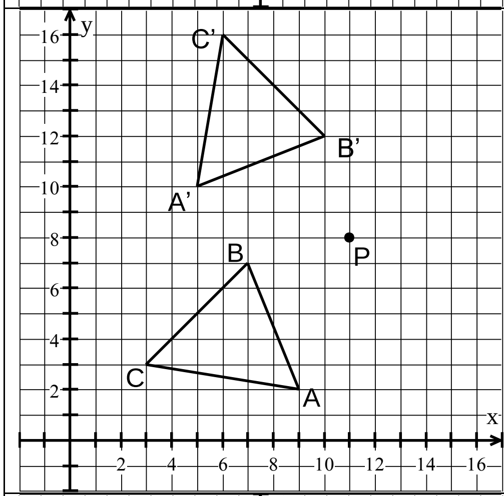
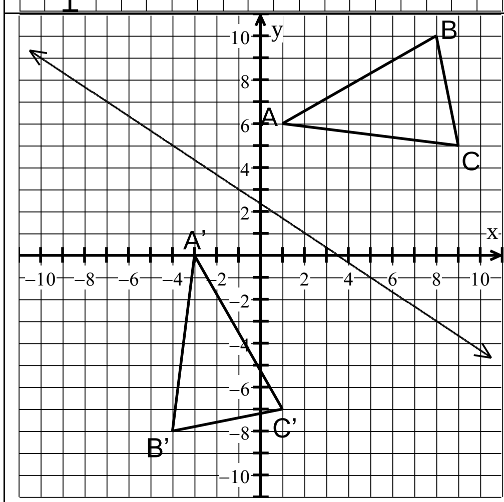
Rigid Transformations

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. Segments connecting points from corresponding points of the pre-image to image are:
	**Rotation**: a transformation that moves points along *concentric circles* through the *same angle of rotation* around a fixed point. Corresponding points are: ΔABC is rotated 90° clockwise about point P. Slope of $\overline{AP}$ = Slope of $\overline{A'P}$ = Slope of $\overline{BP}$ = Slope of $\overline{B'P}$ = Slope of $\overline{CP}$ = Slope of $\overline{C'P}$ =
	**Reflection**: a transformation that *flips* a set of points across a specific *line of reflection* such that the *line of reflection* is the *perpendicular bisector* of each *line segment* connecting the pre-image and corresponding image points. Segments connecting points from corresponding points of the pre-image to image are:

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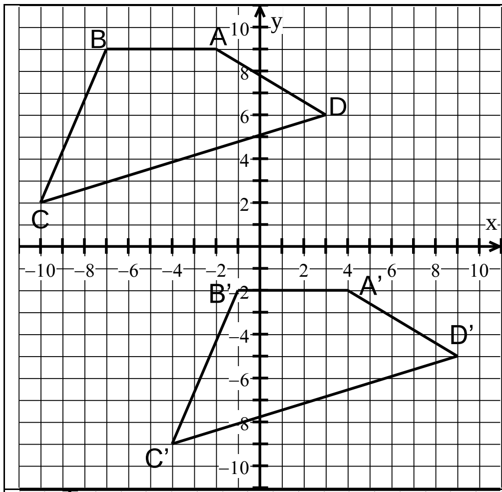
<u>Rigid transformation</u>: A movement that *preserves* the *distance* and *angle measures* of a shape. That is, it *preserves* the *size* and *shape* of the pre-image to the image.

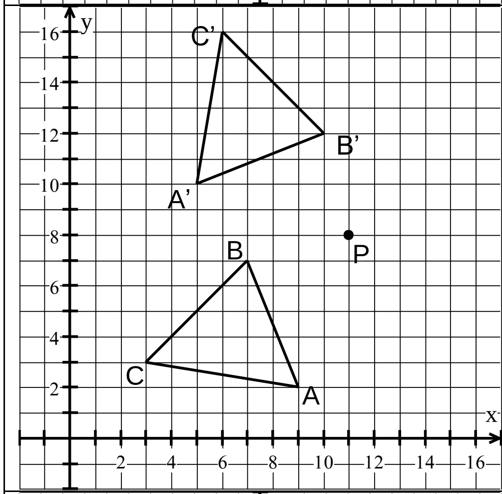


<u>Translation</u>: A transformation that moves a set of points the *same distance* along *lines that are parallel* to each other.

Segments connecting points from corresponding points of the pre-image to image are:
*parallel
m = -11/6
*congruent

F(x, y) → (x + 6, y – 11)

(draw in segments)



<u>Rotation</u>: a transformation that moves points along *concentric circles* through the *same angle of rotation* around a fixed point.

Corresponding points are: connected by concentric arcs with the same degree measure.

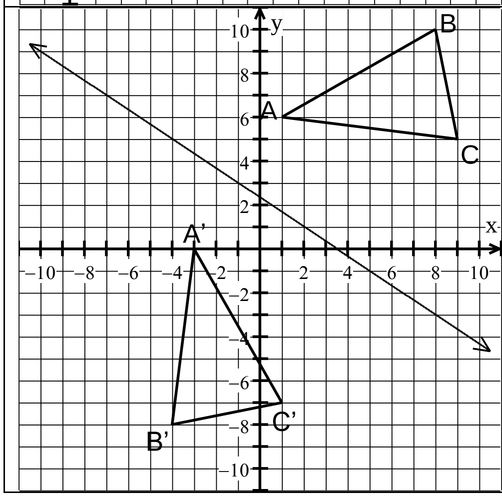
ΔABC is rotated 90° clockwise about point P.

Slope of $\overline{AP}$ = Slope of $\overline{A'P}$ =

Slope of $\overline{BP}$ = Slope of $\overline{B'P}$ =

Slope of $\overline{CP}$ = Slope of $\overline{C'P}$ =

Only if ΔABC is rotated 90° or 270°, the slopes are opposite reciprocals (draw in segments and arcs)



<u>Reflection</u>: a transformation that *flips* a set of points across a specific *line of reflection* such that the *line of reflection* is the *perpendicular bisector* of each *line segment* connecting the pre-image and corresponding image points.
Segments connecting points from corresponding points of the pre-image to image are:
*bisected by line of reflection (draw in segments)
*parallel to each other

Slope of $\overline{AA'}$, $\overline{BB'}$, $\overline{CC'}$ = 3/2

*perpendicular to line of reflection
Function for line of symmetry; f(x) = 3/2(x-2)+1