Transformations in the Coordinate Plane
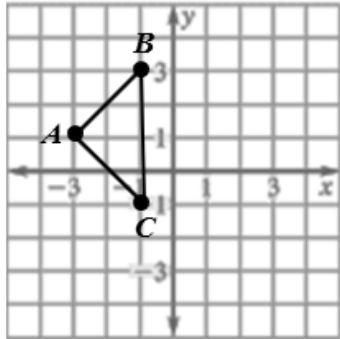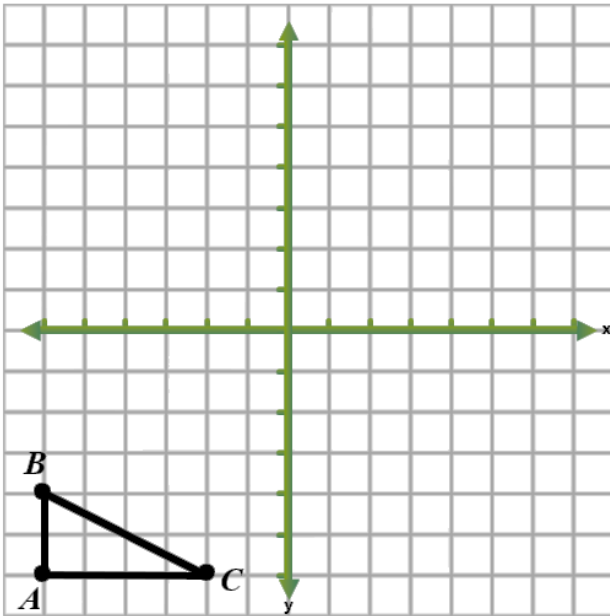
Goals: *Reflect figures in the coordinate plane across various lines
*Translate figures in the coordinate plane
*Rotate figures around a point by 90° and 180°
*Dilate figures in the coordinate plane by scale factors

Transformations:

TRANSFORMATIONS		
Type	**Explanation**	**Symbols/Example**
Reflection		Reflect across the *x*-axis: Reflect across the *y*-axis:
Translation		Translate Δ*ABC* 3 units right and 1 unit down.

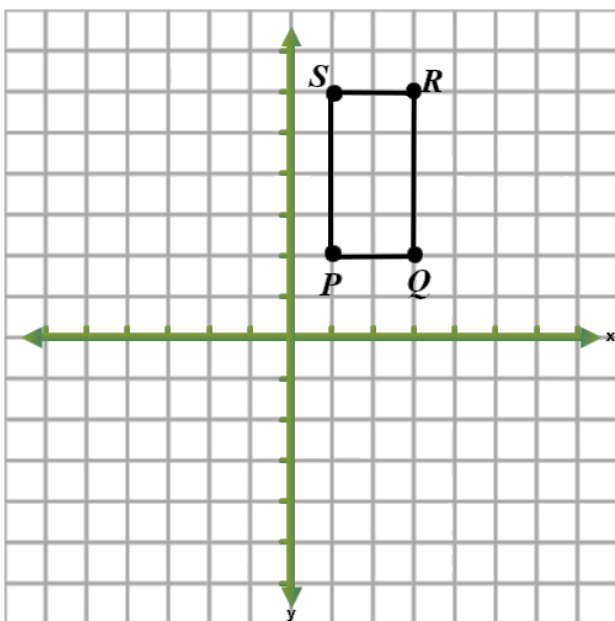|		
Dilation		Dilate ΔABC by a scale factor of 2
Rotation		90° counterclockwise (CCW) around the origin: 180° around the origin:

Perform the transformation indicated.

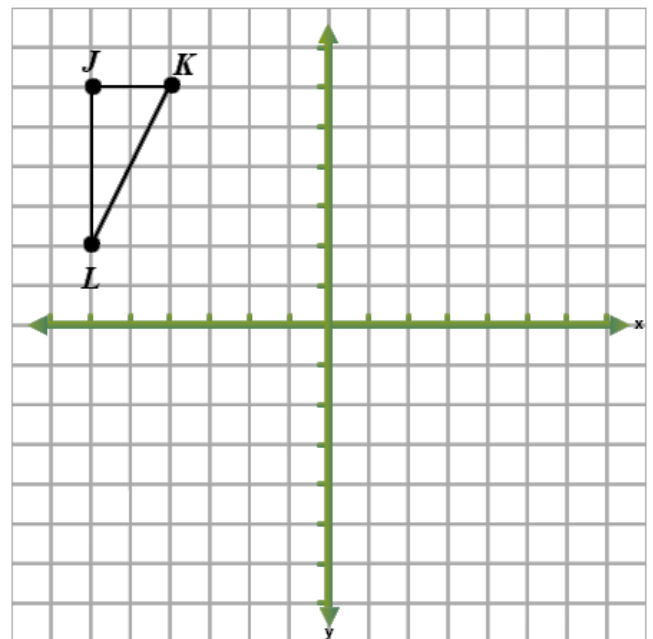**Ex:** Reflect ΔABC over the x-axis.

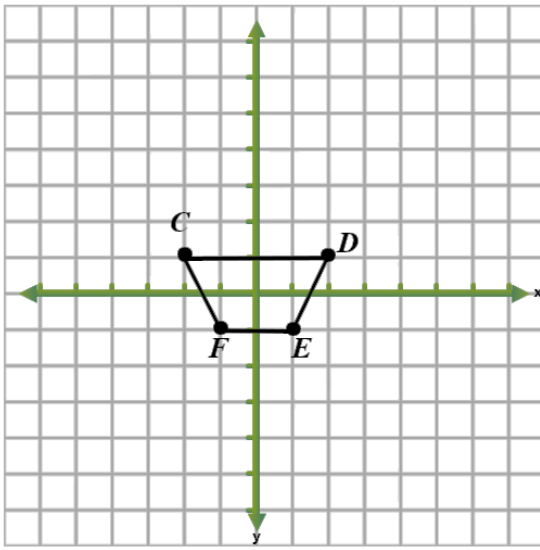**Ex:** Translate parallelogram WXYZ 5 units up and 3 units left
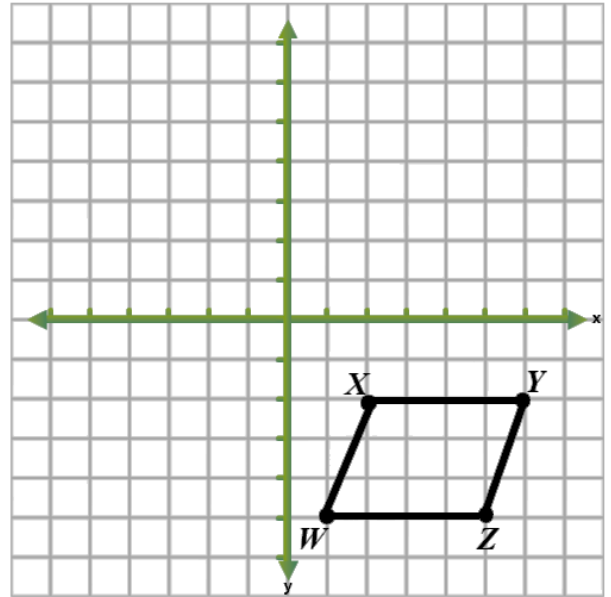
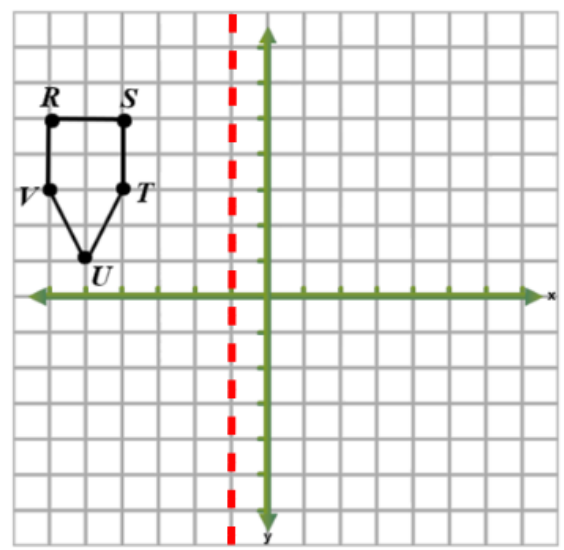**Ex:** Rotate rectangle PQRS by 90° *counterclockwise* about the origin

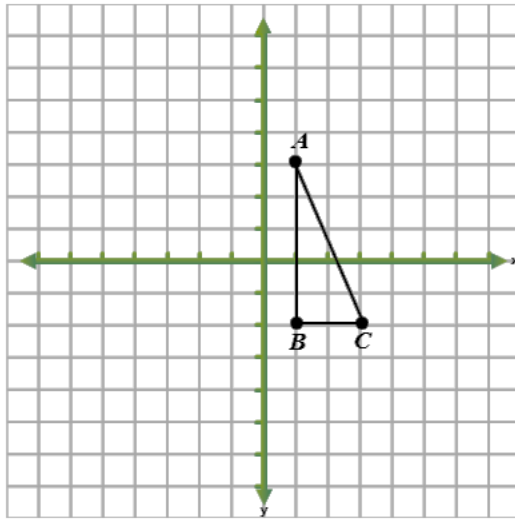**Ex:** Rotate ΔJKL 180° about the origin

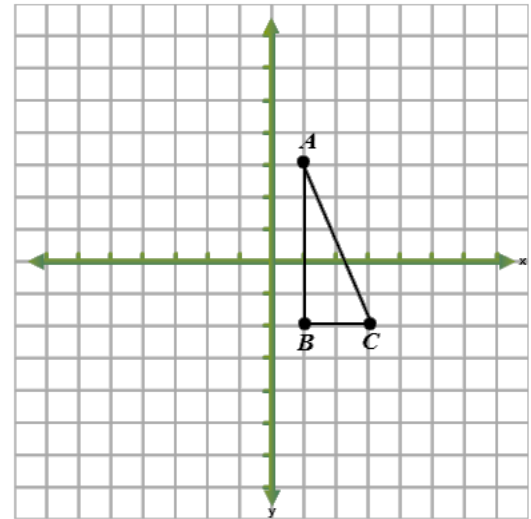**Ex:** Dilate trapezoid *CDEF* by a scale factor of 2.

Ex: Reflect pentagon *RSTUV* across the line $x = -1$

Ex: Rotate $\triangle ABC$ 90° counterclockwise about point *B*

Ex: Rotate $\triangle ABC$ 180° about point *C*

Ex: Rotate $\triangle ABC$ 90° clockwise about point *A*