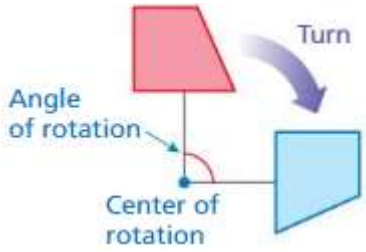
Section 2.3: Rotations Name: _____

In Class Notes

A _____ or _____ is a transformation in which a figure is rotated about a point called

the _____ _____ _____.

The number of degrees a figure rotates is called the _____ _____ _____.



Ex:) You must rotate the puzzle piece 270° clockwise about point P to fit it into a puzzle. Which piece fits in the puzzle as shown?

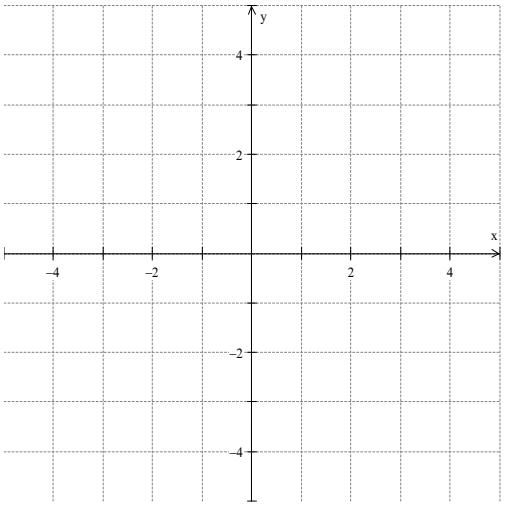
Notes:

A. 

B. 

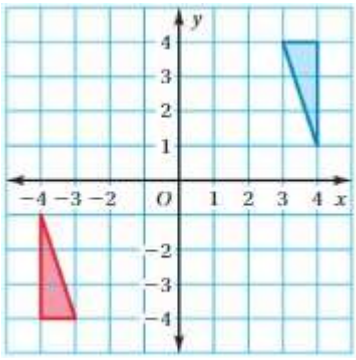
C. 

D. 



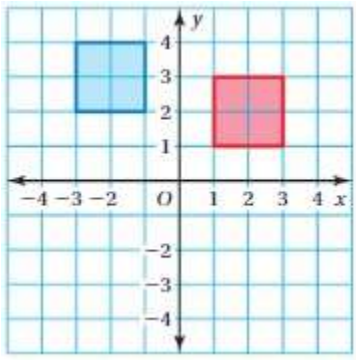
Ex:) Tell whether the blue figure is a rotation of the red figure about the origin. If so, give the angle and direction of rotation.

Notes:



OYO:) Tell whether the blue figure is a rotation of the red figure about the origin. If so, give the angle and direction of rotation.

Notes:



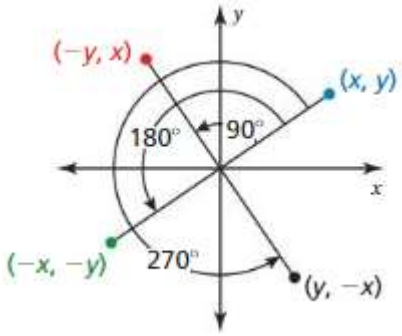
Algebra:

When a point (x, y) is rotated counterclockwise about the origin, the following are true.

For a rotation of 90°, $(\mathrm{x},\mathrm{y}) \to (-\mathrm{y},\mathrm{x})$

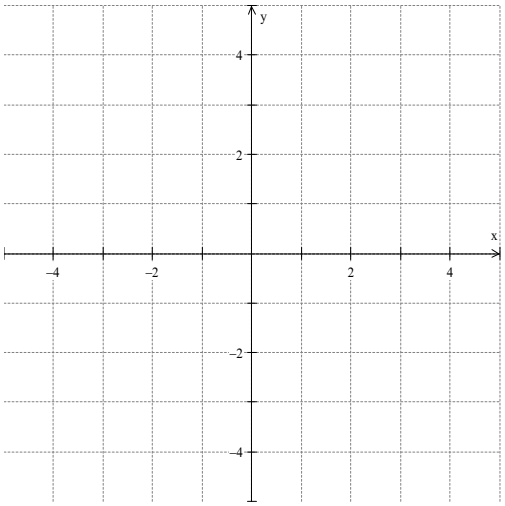
For a rotation of 180°, $(\mathrm{x},\mathrm{y}) \to (-x,-\mathrm{y})$

For a rotation of 270°, $(\mathrm{x},\mathrm{y}) \to (y,-x)$



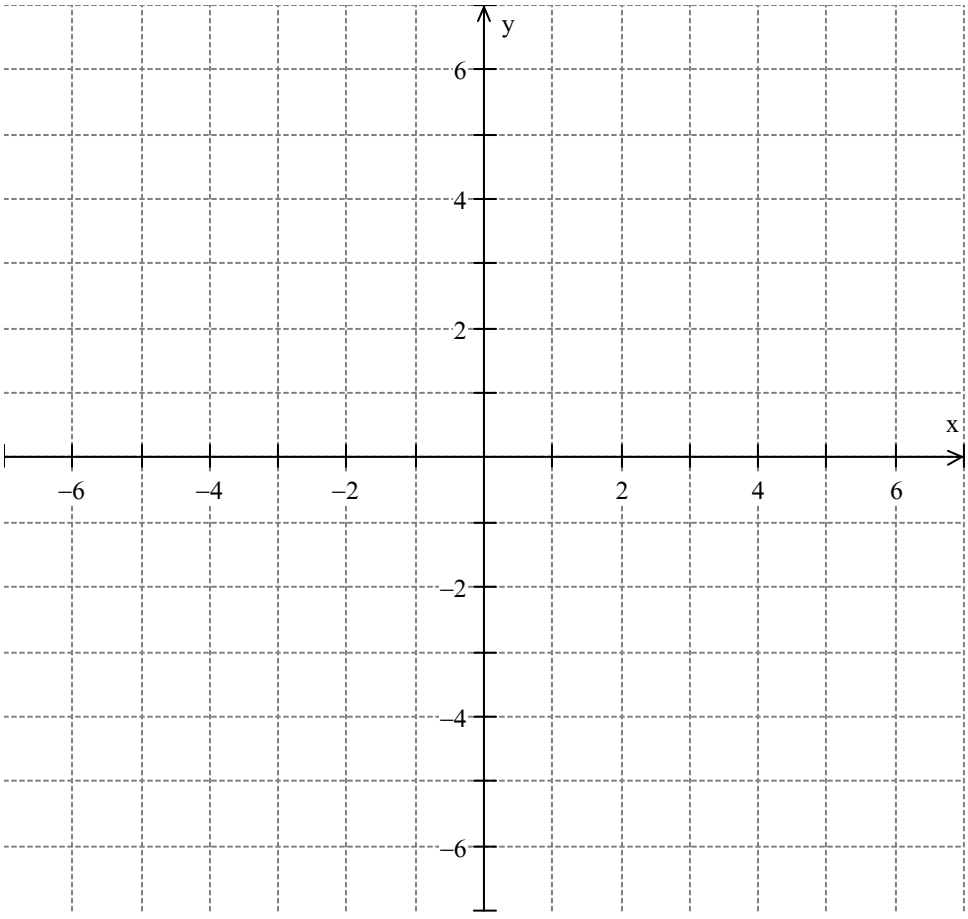
Ex:) The vertices of a trapezoid are W(-4, 2), X(-3, 4), Y(-1, 4), and Z(-1, 2). Rotate the trapezoid 180° about the origin. What are the coordinates of the image?

Notes:



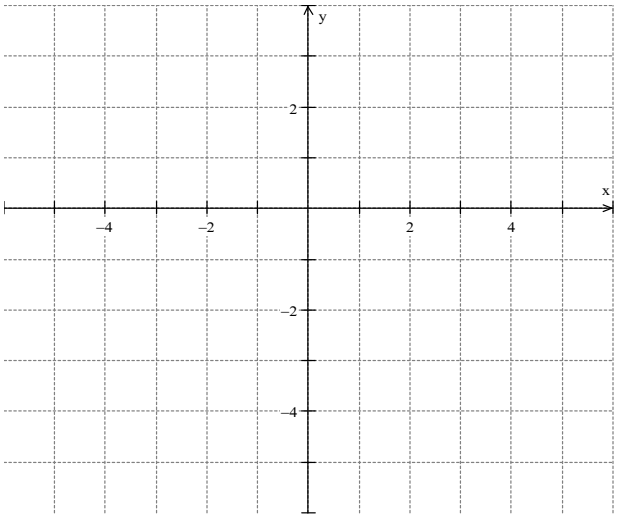
OYO:) The vertices of a triangle are P(-3, 2), Q(6, 1), and R(-1, -5). Rotate the triangle 90° Counterclockwise about the origin. Graph the triangle before and after the transformation.

Notes:



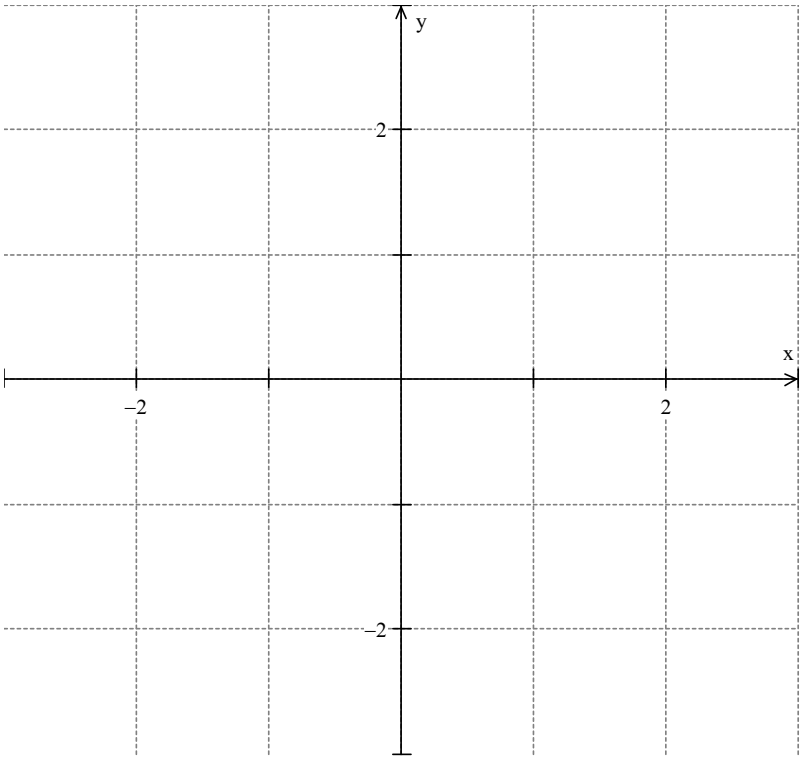
Ex:) The vertices of a rectangle are A(-3, -3), B(1, -3), C(1, -5), and D(-3, -5). Notes:

Rotate the rectangle 90° clockwise about the origin, and then reflect it in the y-axis. What are the coordinates of the image?



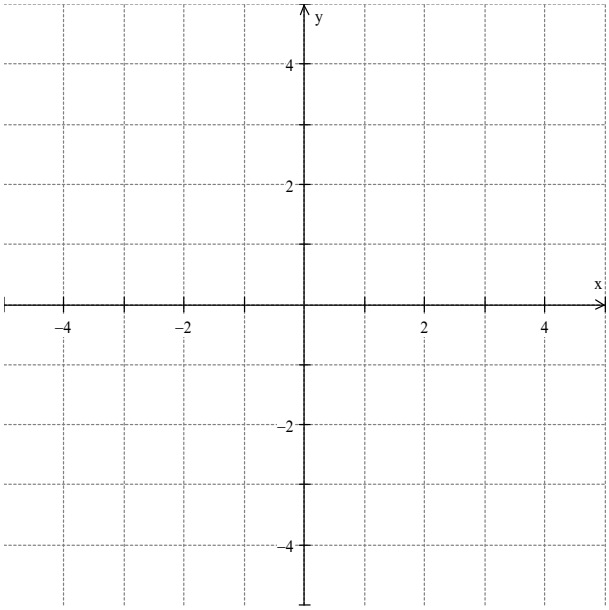
OYO:) The vertices of a triangle are P(-1, 2), Q(-1, 0), and R(2, 0). Notes:

Rotate the traingle 180° about the origin, and then reflect it in the x-axis. What are the coordinates of the image?



Ex:) A carousel is represented in a coordinate plane with the center of the carousel at the origin. You and three friends sit at A(-4, -4), B(-3, 0), C(-1, -2), and D(-2, -3). At the end of the ride, your positions have rotated 270° clockwise about the center of the carousel. What are your locations at the end of the ride?

Notes:



OYO:) You move the red game piece to the indicated location using a rotation about the origin, followed by a translation. What are the coordinates of the vertices of the game piece after the rotation? Justify your answer.

Notes: