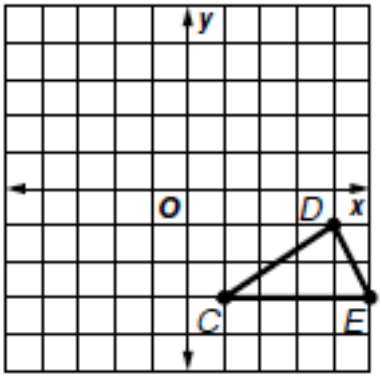
8-4 Rotations on the Coordinate Plane

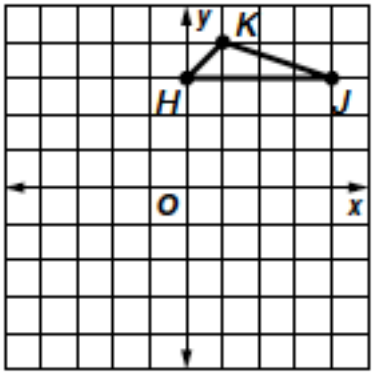
Rotation 90 degrees – a) Find the coordinates of the vertices of the figure after a rotation of 90 degrees **counterclockwise** about the origin**. b)** Answer any questions that follow.

LP#1



How does the size and shape of the image compare to its pre-image?

LP#2



Create a rule for rotations of 90 counterclockwise about the origin.

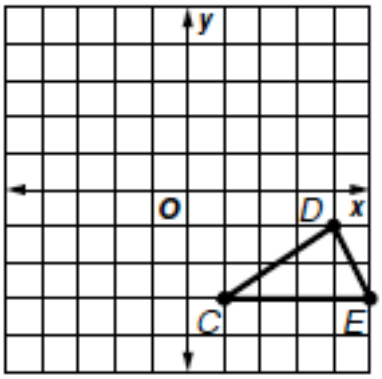
A method for expressing a rule to represent a reflection through the *x*-axis is as follows:
$(x,y) \rightarrow (\quad)$

A method for expressing a rule to represent a reflection through the *x*-axis is as follows:
$(x,y) \rightarrow (\quad)$

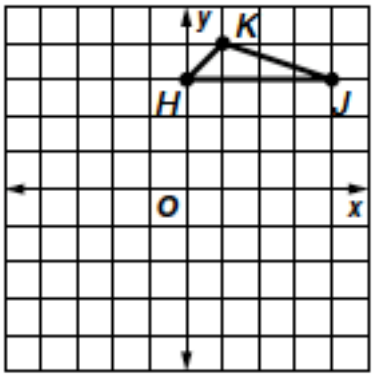
Examine the points to the pre-images and the resulting points of the images after the rotations about the origin in LP#1 and LP#2 to create a rule to represent a rotation of 90 degrees counterclockwise about the origin.

Rotation 90 degrees – a) Find the coordinates of the vertices of the figure after a rotation of 90 degrees **clockwise** about the origin**. b)** Answer any questions that follow.

LP#3



LP#4



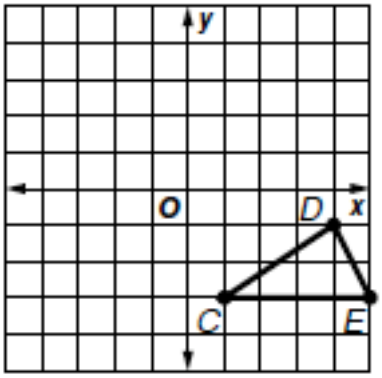
Create a rule for rotations of 90 clockwise about the origin.

A method for expressing a rule to represent a rotation of 90 degrees counterclockwise about the origin:
$(x,y) \rightarrow (\quad)$

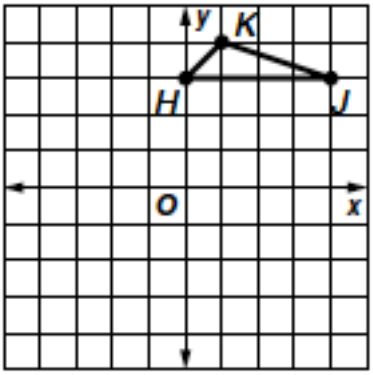
Examine the points to the pre-images and the resulting points of the images after the rotations about the origin in LP#3 and LP#4 to create a rule to represent a rotation of 90 degrees clockwise about the origin.

Rotation 180 degrees – a) Find the coordinates of the vertices of the figure after a rotation of 90 degrees counterclockwise about the origin. **b)** Answer any questions that follow.

LP#5



LP#6



Create a rule for rotations of 180 about the origin.

A method for expressing a rule to represent a rotation of 90 degrees counterclockwise about the origin:
$(x,y) \rightarrow (\quad)$

A method for expressing a rule to represent a rotation of 90 degrees clockwise about the origin:
$(x,y) \rightarrow (\quad)$

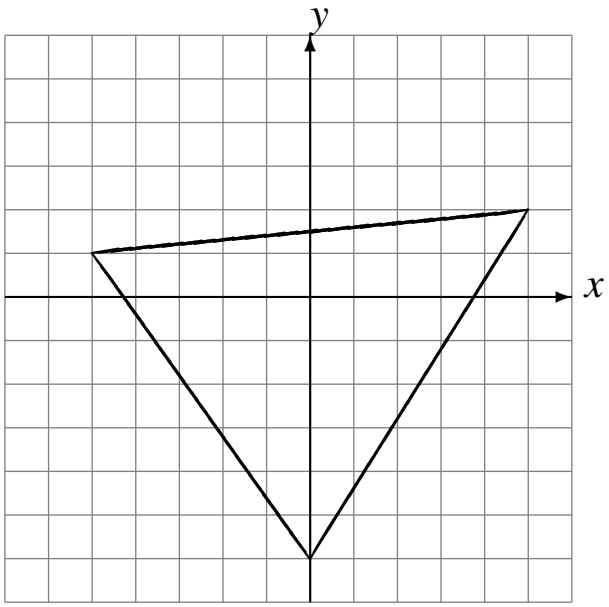
Examine the points to the pre-images and the resulting points of the images after the rotations about the origin in LP#5 and LP#6 to create a rule to represent a rotation of 180 degrees about the origin.

8-4

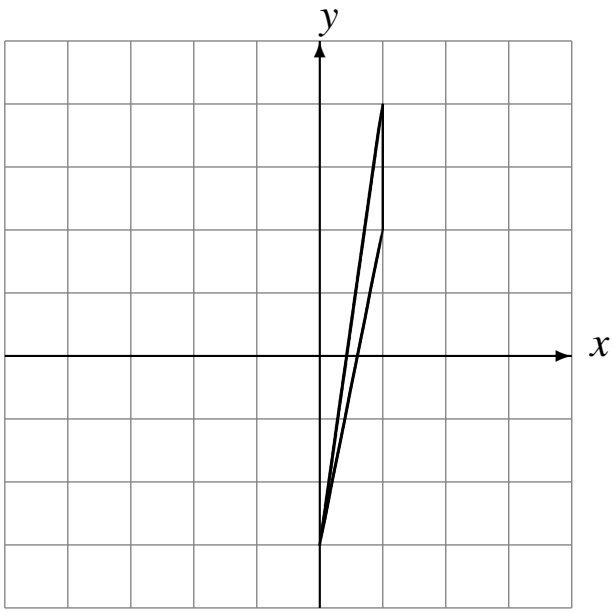
Rotations (A)

Draw the rotated image.

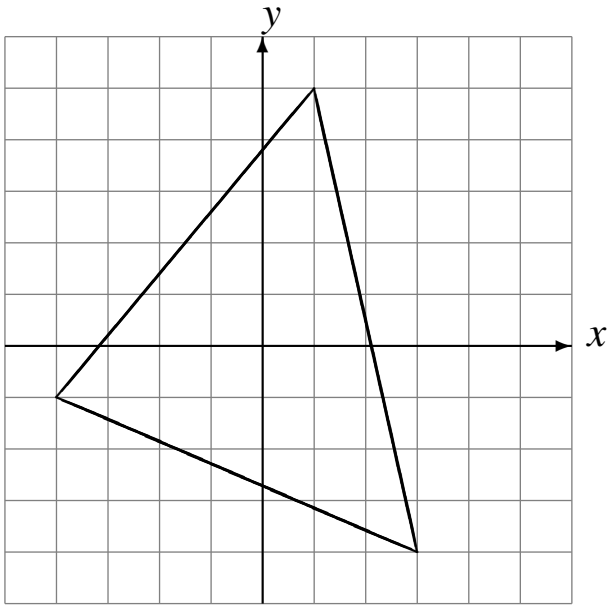
Rotate 90° clockwise about (0, 0).



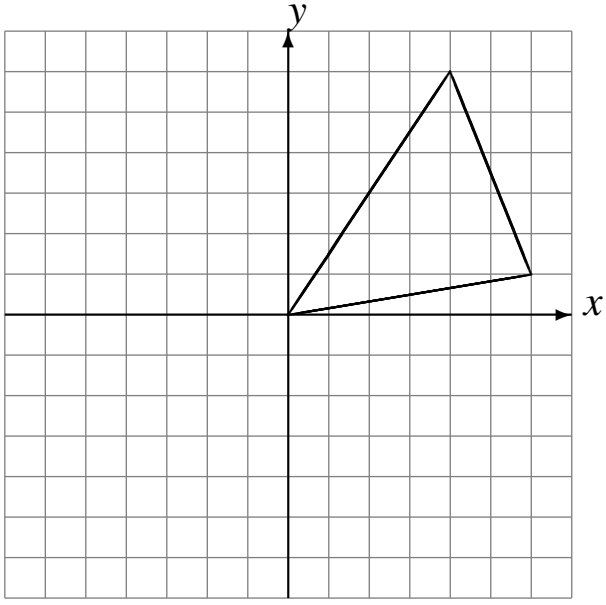
Rotate 90° counterclockwise about (0, 0).



Rotate 90° clockwise about (0, 0).



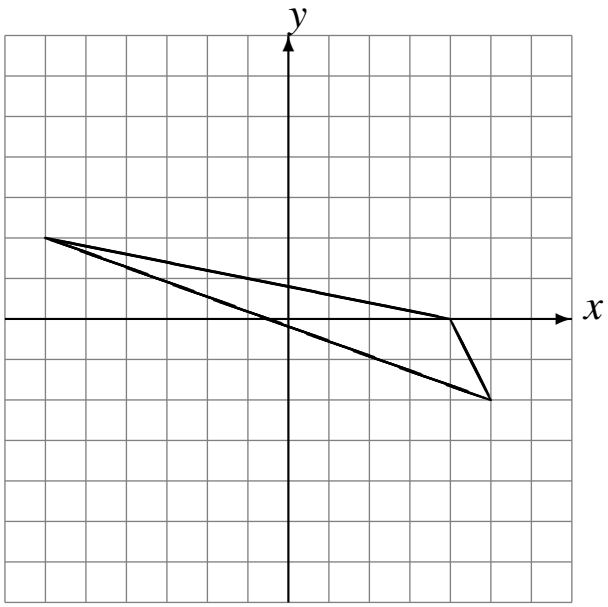
Rotate 180° about (0, 0).



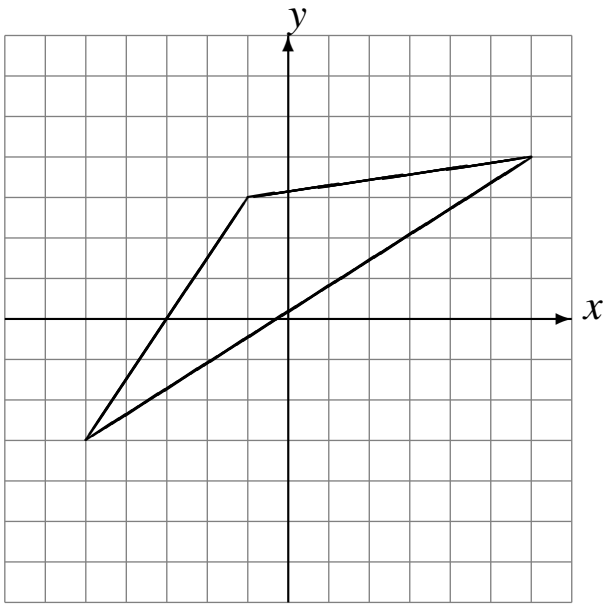
Rotations (B)

Draw the rotated image.

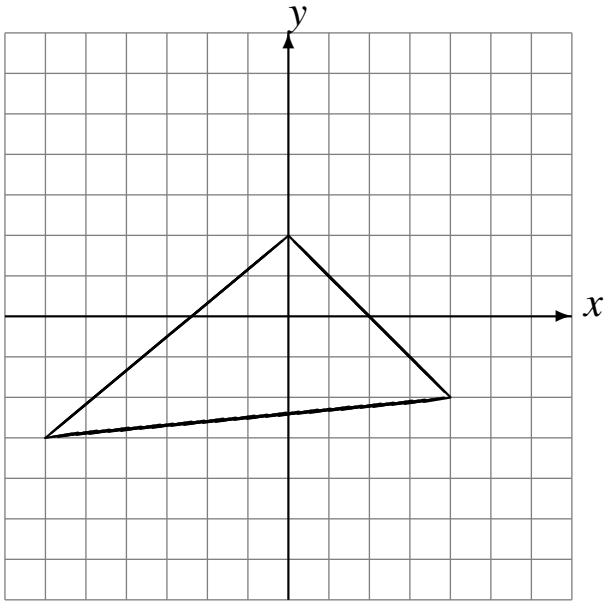
Rotate 180° about (0, 0).



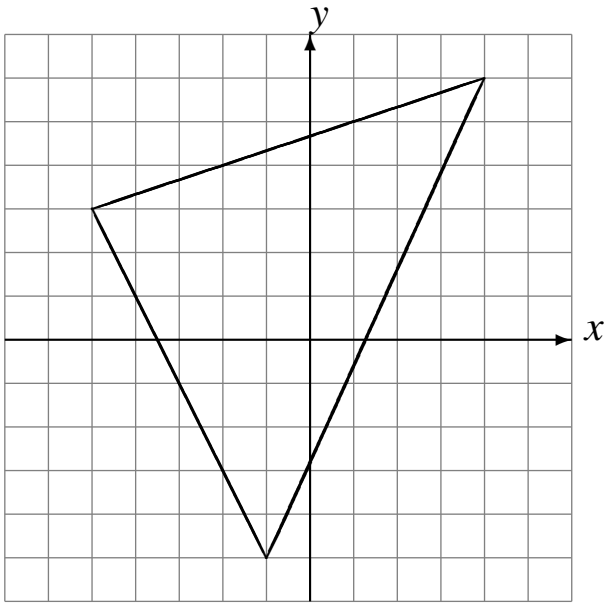
Rotate 180° about (0, 0).



Rotate 180° about (0, 0).



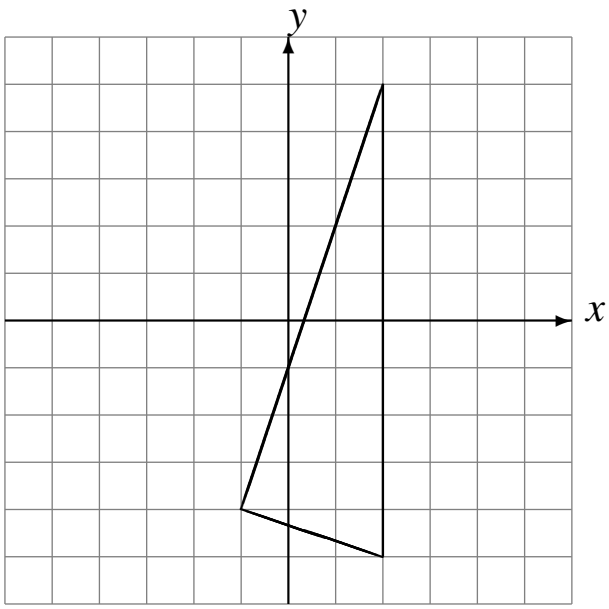
Rotate 90° counterclockwise about (0, 0).



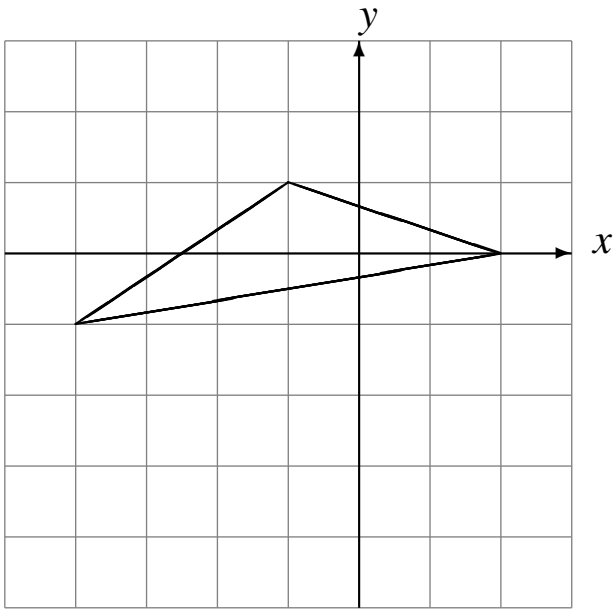
Rotations (C)

Draw the rotated image.

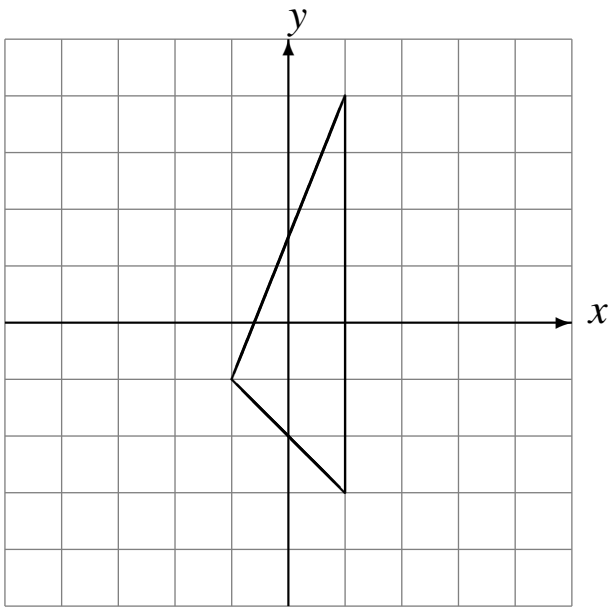
Rotate 180° about (0, 0).



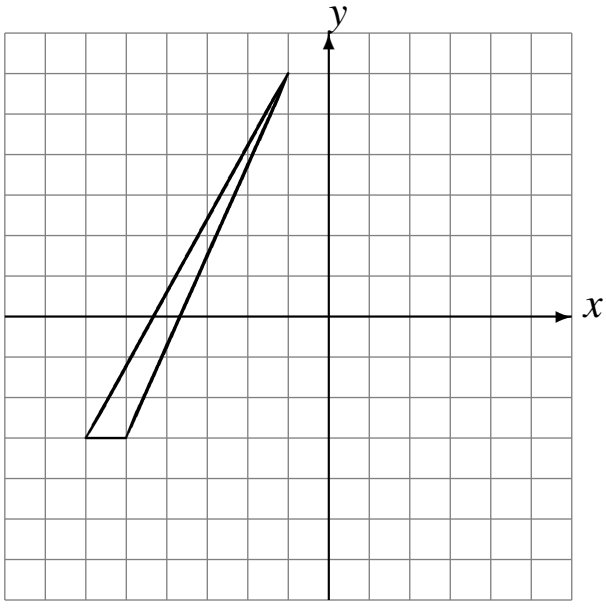
Rotate 90° counterclockwise about (0, 0).



Rotate 180° about (0, 0).



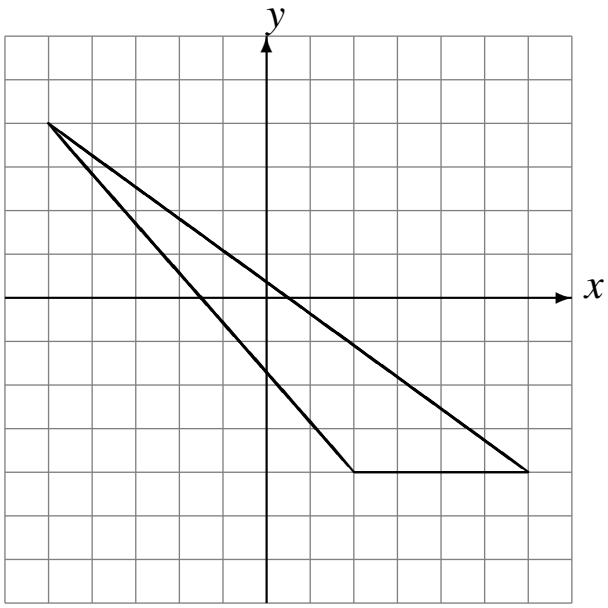
Rotate 90° counterclockwise about (0, 0).



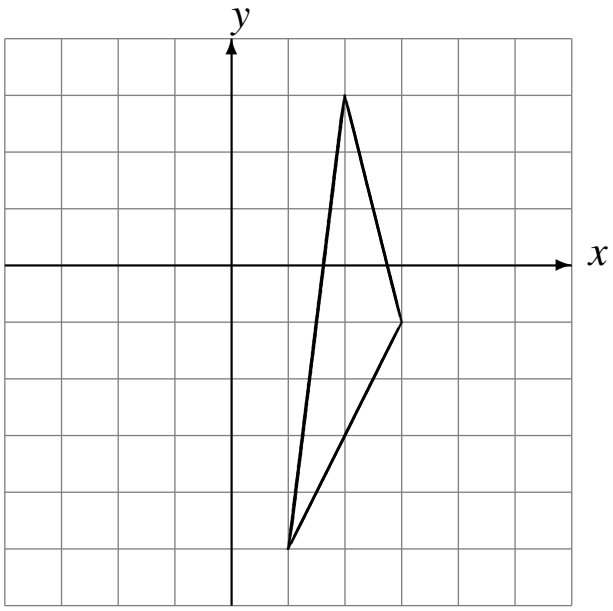
Rotations (D)

Draw the rotated image.

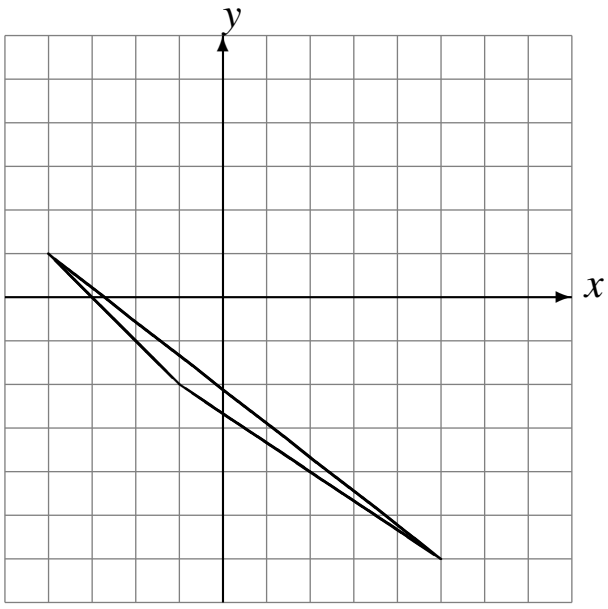
Rotate 90° clockwise about (0, 0).



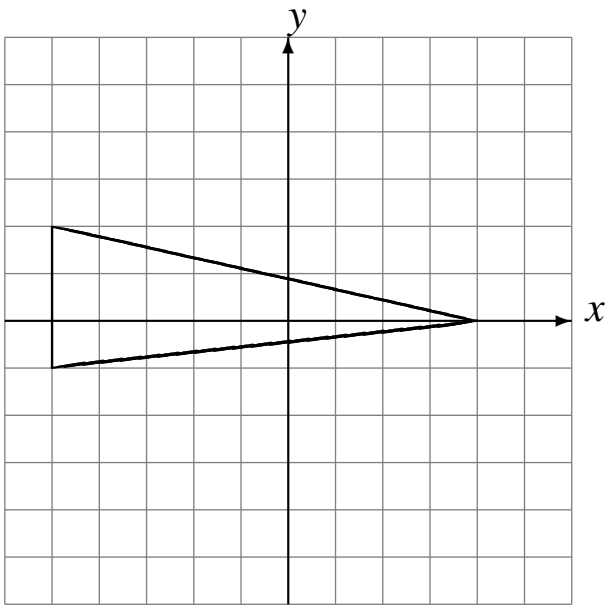
Rotate 90° counterclockwise about (0, 0).



Rotate 90° counterclockwise about (0, 0).



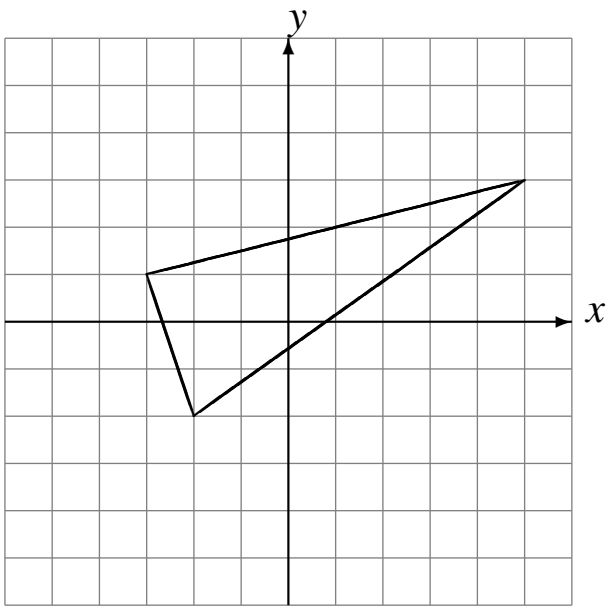
Rotate 180° about (0, 0).



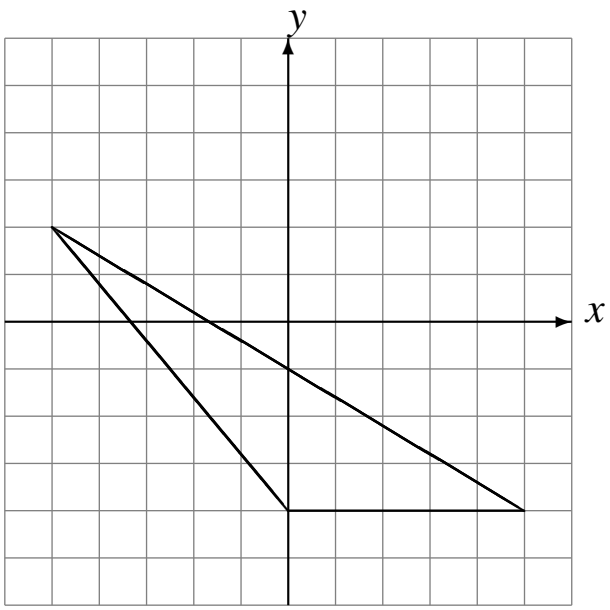
Rotations (E)

Draw the rotated image.

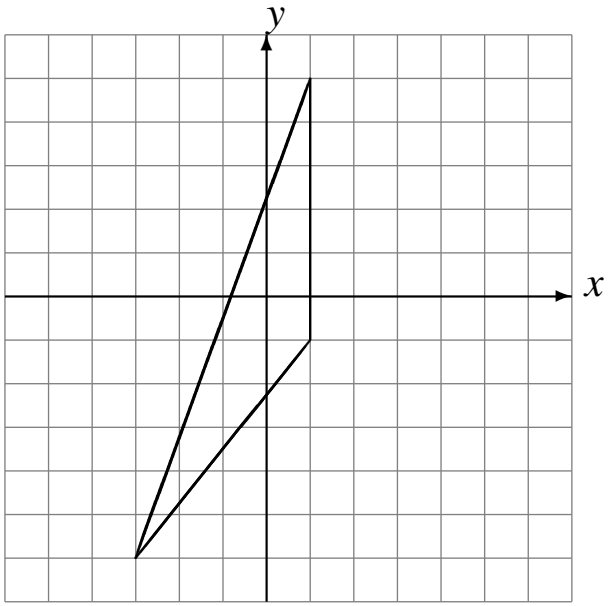
Rotate 180° about (0, 0).



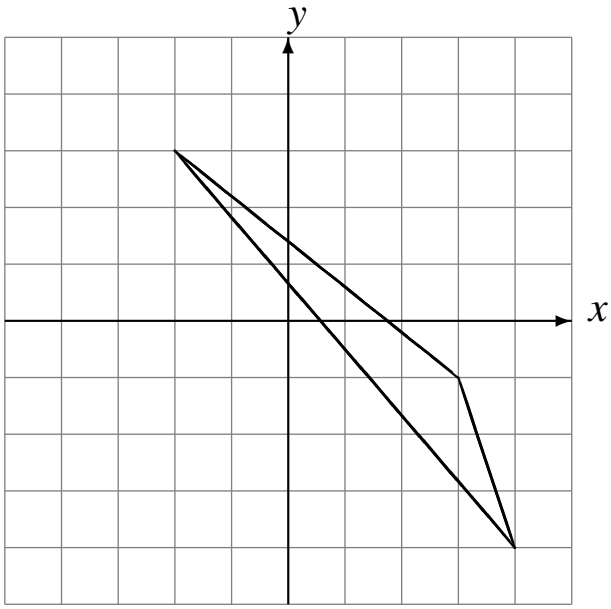
Rotate 90° counterclockwise about (0, 0).



Rotate 90° counterclockwise about (0, 0).



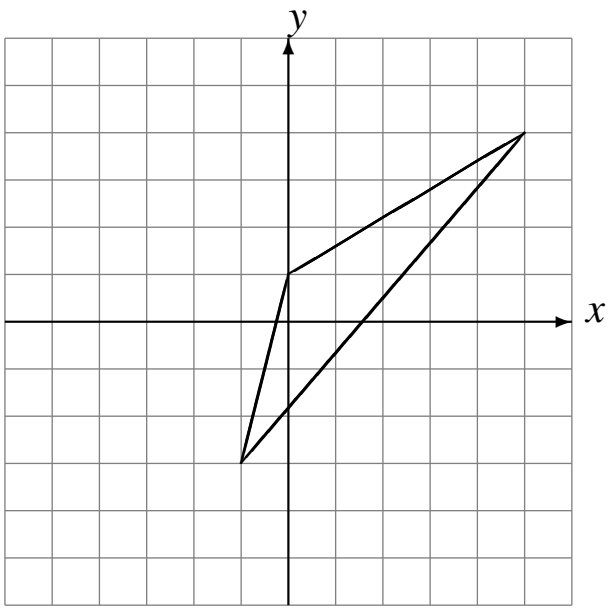
Rotate 180° about (0, 0).



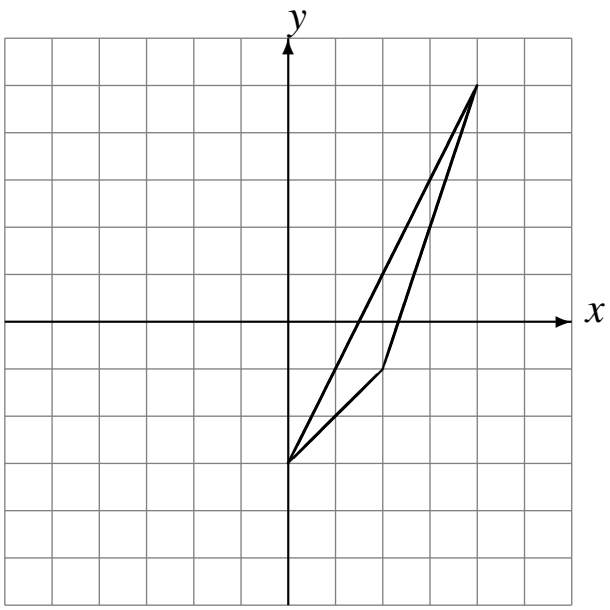
Rotations (F)

Draw the rotated image.

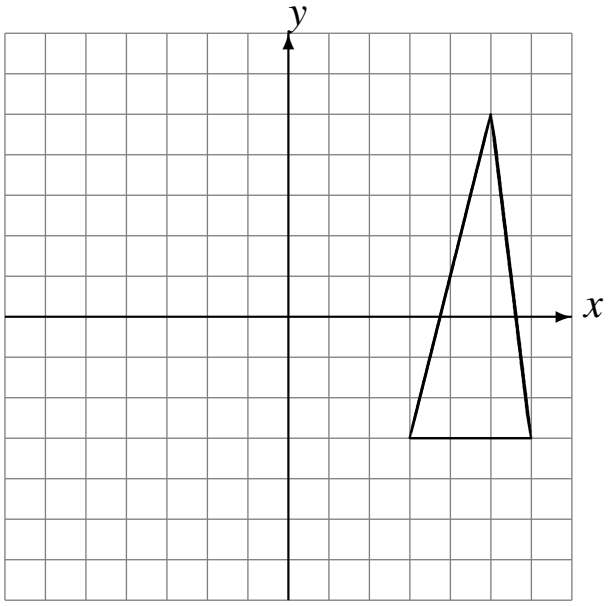
Rotate 180° about (0, 0).



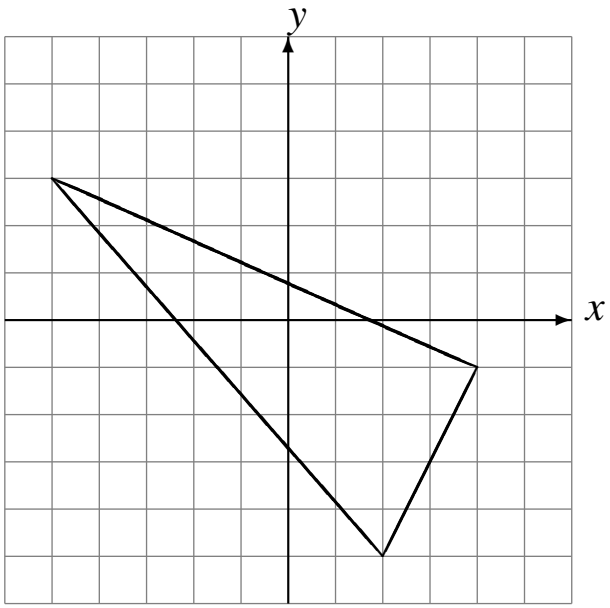
Rotate 180° about (0, 0).



Rotate 180° about (0, 0).



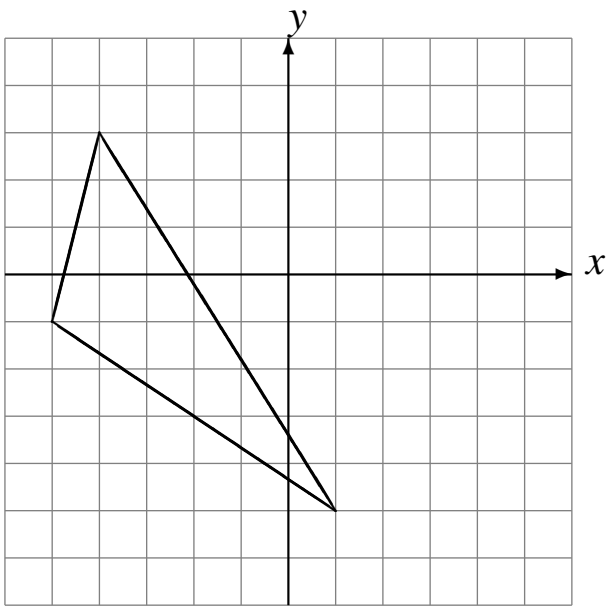
Rotate 90° counterclockwise about (0, 0).



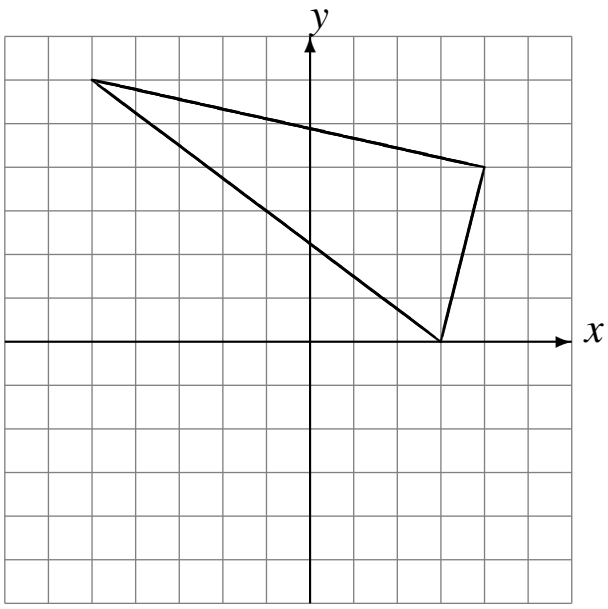
Rotations (G)

Draw the rotated image.

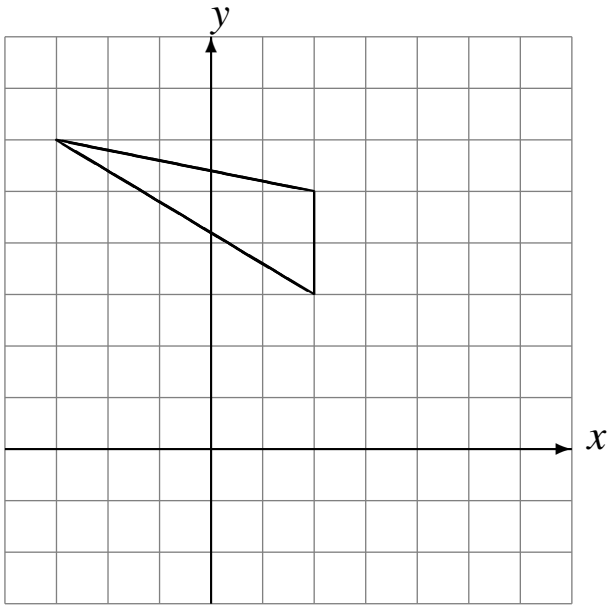
Rotate 90° counterclockwise about (0, 0).



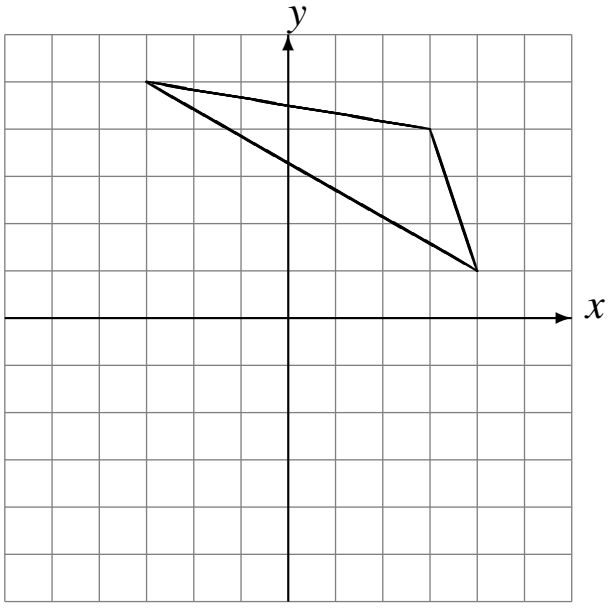
Rotate 90° counterclockwise about (0, 0).



Rotate 90° clockwise about (0, 0).



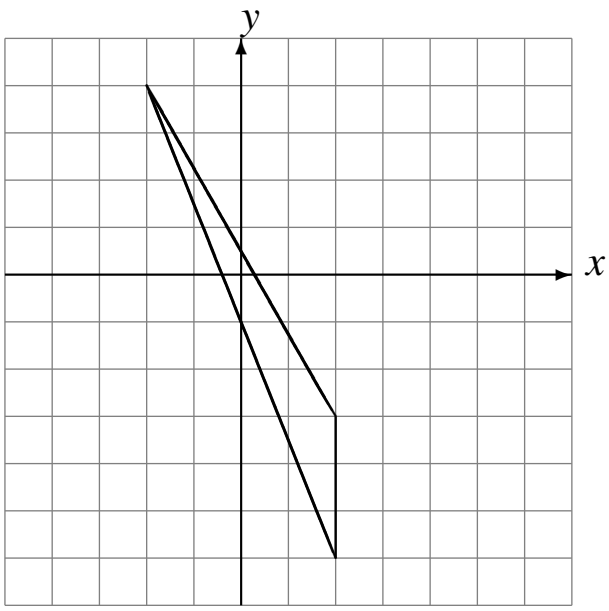
Rotate 180° about (0, 0).



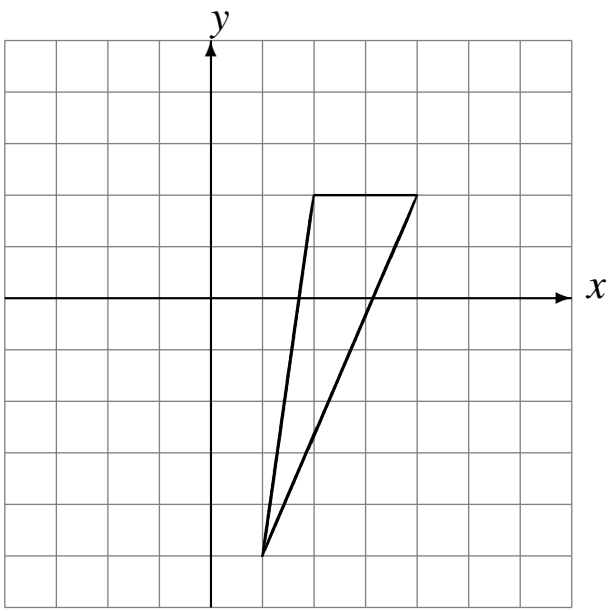
Rotations (H)

Draw the rotated image.

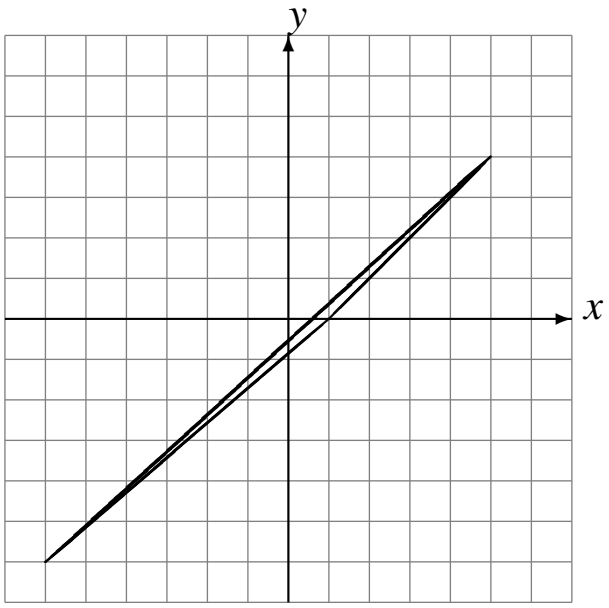
Rotate 90° counterclockwise about (0, 0).



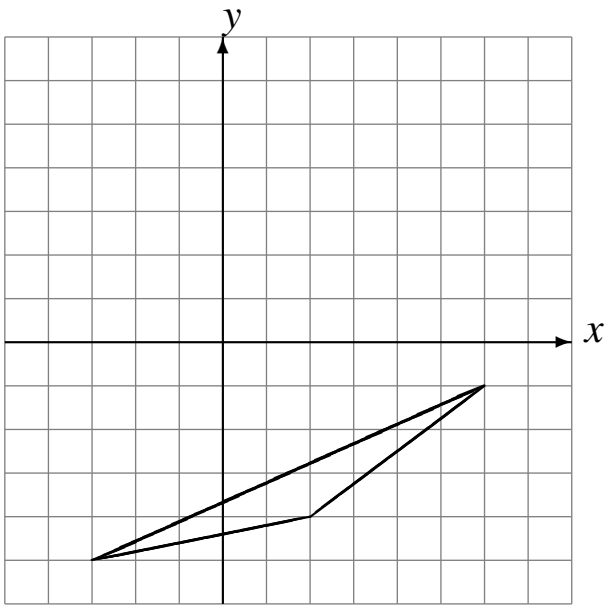
Rotate 90° counterclockwise about (0, 0).



Rotate 90° counterclockwise about (0, 0).



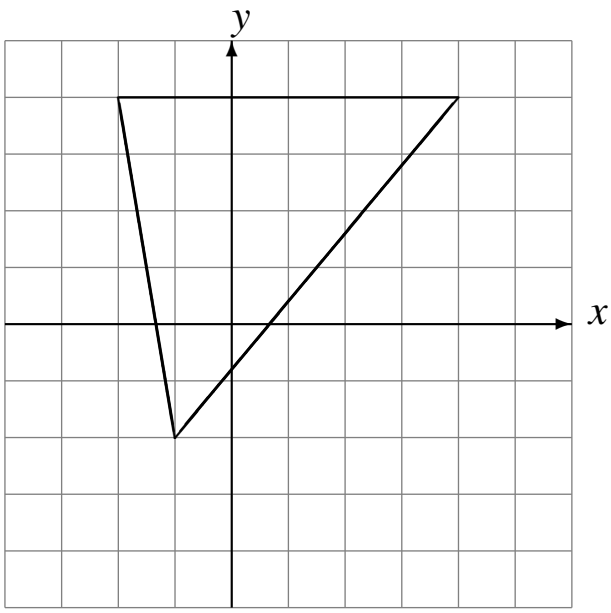
Rotate 90° counterclockwise about (0, 0).



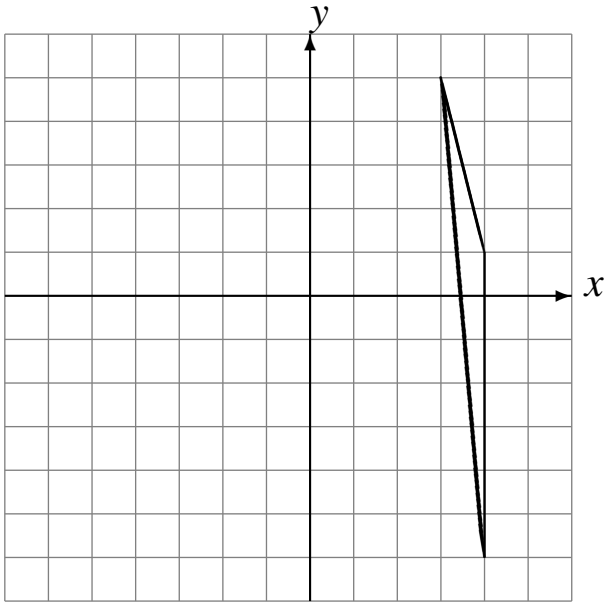
Rotations (I)

Draw the rotated image.

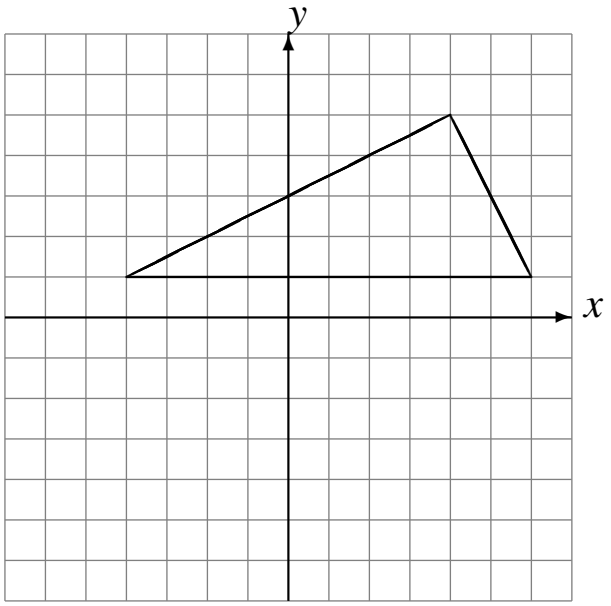
Rotate 90° clockwise about (0, 0).



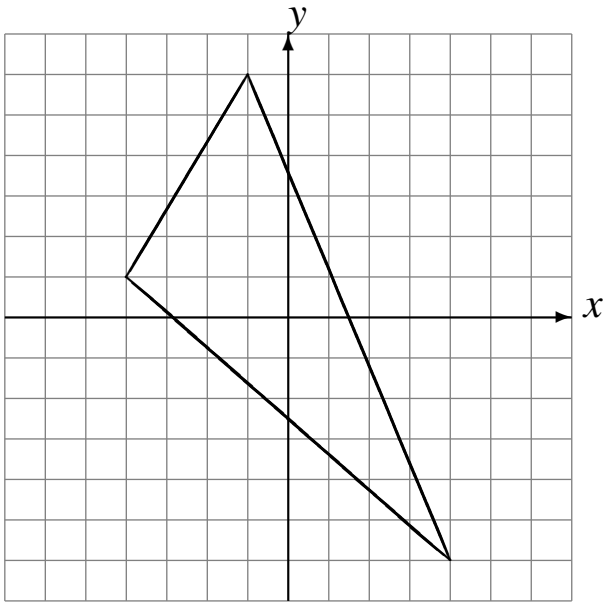
Rotate 90° clockwise about (0, 0).



Rotate 180° about (0, 0).



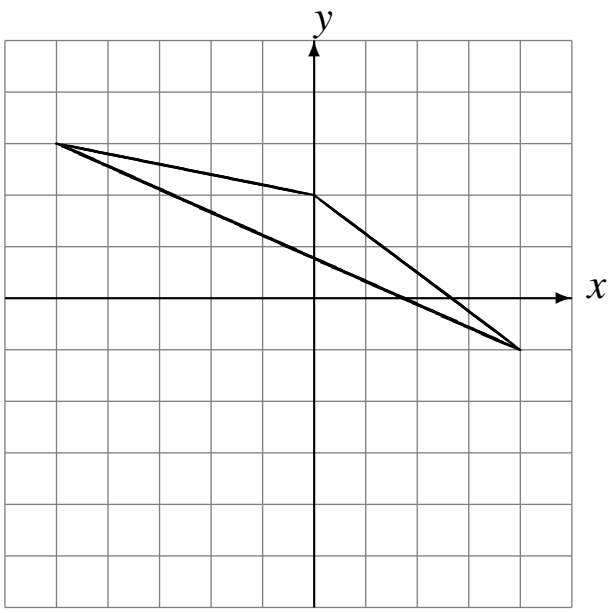
Rotate 180° about (0, 0).



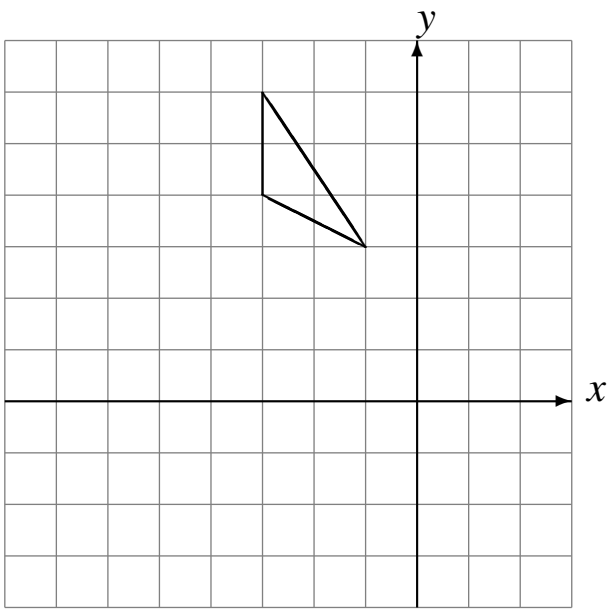
Rotations (J)

Draw the rotated image.

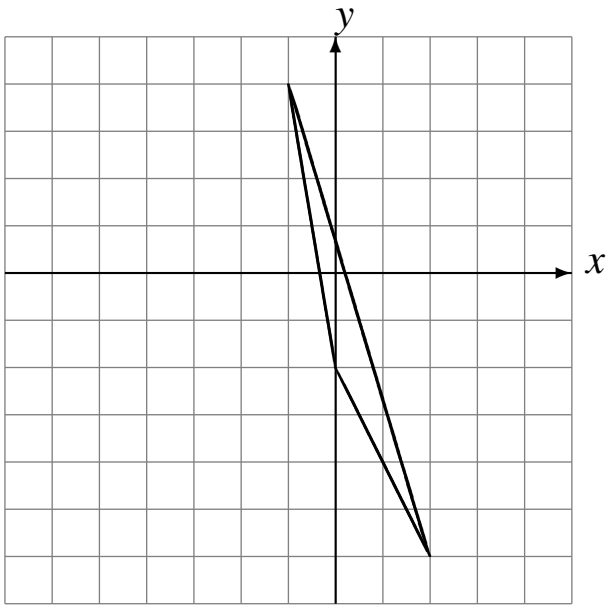
Rotate 90° counterclockwise about (0, 0).



Rotate 90° counterclockwise about (0, 0).



Rotate 90° clockwise about (0, 0).



Rotate 180° about (0, 0).