

Lesson: Enrichment Transformations and Coordinates

Sixth Grade Objective:

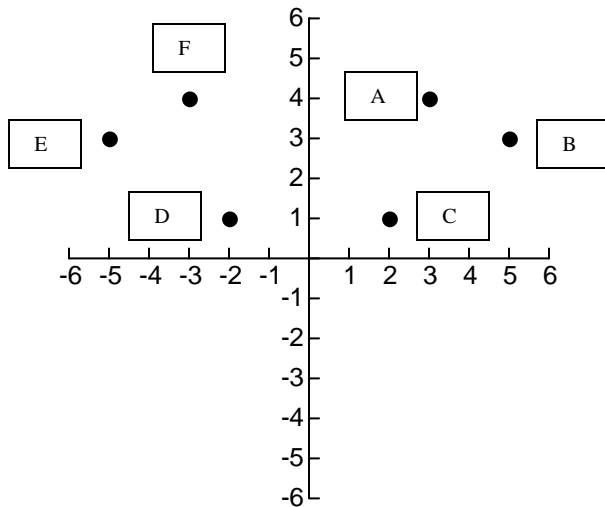
3.03 Transform figures in the coordinate plane and describe the transformation

3.04 Solve problems involving geometric figures in the coordinate plane

Review.

Try these on your own!

Use the graph to answer the following questions.

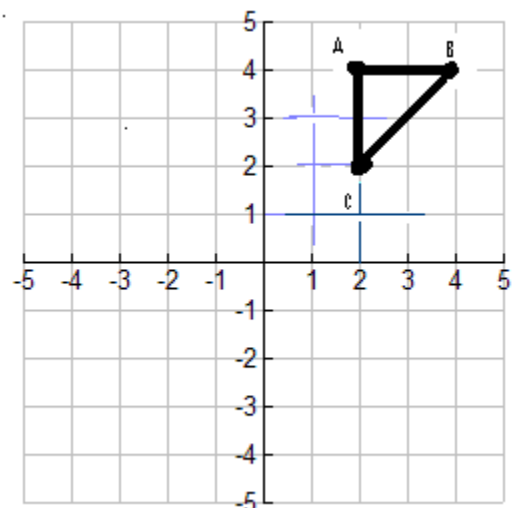


A.

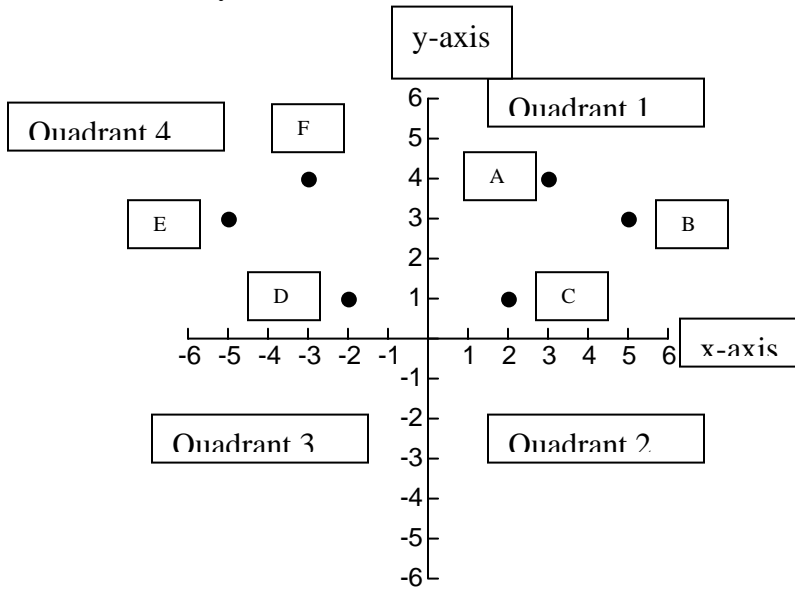
1. Copy the graph onto graph paper and label the four quadrants.
2. Label the x-axis and y-axis.
3. Identify the origin.
4. Identify the coordinates of each point.

B.

Look at $\triangle ABC$. Translate the triangle three units to the left and three units down. What are the new coordinates?



Check your answers!



A.

1. Copy the graph onto graph paper and label the four quadrants.
2. Label the x-axis and y-axis.
3. Identify the origin. The origin is zero. It is placed where the x-axis and y-axis meet.
4. Identify the coordinates of each point.
A(2,4) B(5,3) C(2,1) D(-2,1) E(-5,3) F(-3,4)

B.

To describe the new coordinates write them in notation. The new coordinates are read as A' or A Prime.

$\triangle ABC$	→	$\triangle A'B'C'$
A(2,4)	→	A'(-1,1)
B(4,4)	→	B'(1,1)
C(2,2)	→	C'(-1,-1)

ACTIVITY 1:

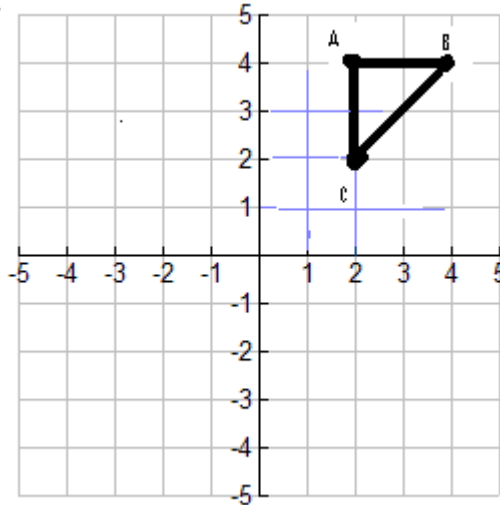
You will need graph paper. Create an x- and y-axis. Label the origin. Given the points A(-4,2), B(-4,-3), C(1,-3), what are the coordinates of D if figure ABCD is a rectangle? Determine the perimeter and area.

ACTIVITY 2:

If figure READ has the following coordinates: R(1,1), E(5,1), A(1,3), D(5,3), what are the new coordinates of the figure if it is reflected over the x-axis?

ACTIVITY 3:

Rotate $\triangle ABC$ counter clockwise 90° about the origin. What are the new coordinates?



Extra Practice!

Click on this website to play golf!

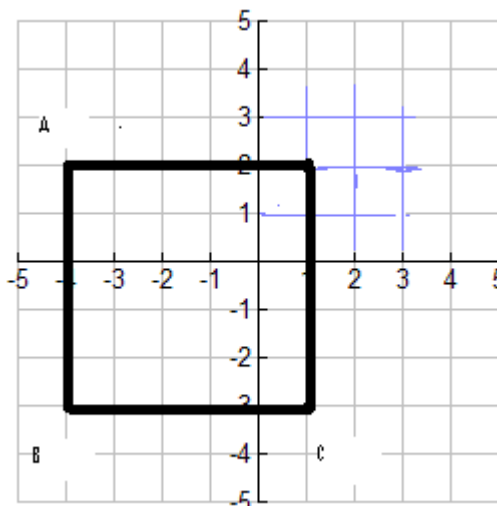
www.mathsonline.co.uk/nonmembers/gamesroom/transform/golftrans.html

Check your answers.

ACTIVITY 1:

You will need graph paper. Create an x- and y-axis. Label the origin. Given the points A(-4,2), B(-4,-3), C(1,-3), what are the coordinates of D if figure ABCD is a square? Determine the perimeter and area.

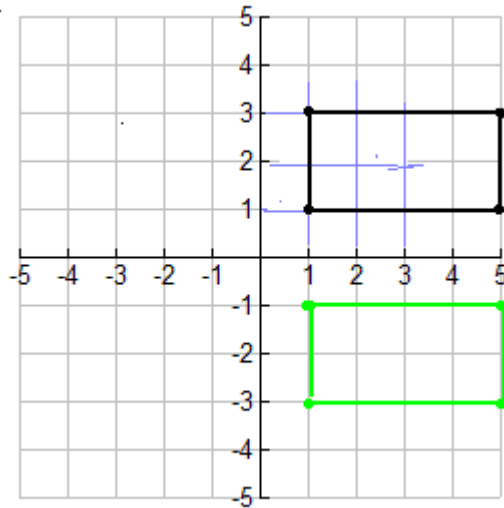
D(1,2) Perimeter = 20 units
Area = 25 sq.units



ACTIVITY 2:

If figure READ has the following coordinates: R(1,1), E(5,1), A(1,3), D(5,3), what are the new coordinates of the figure if it is reflected over the x-axis?

READ	→	R'E'A'D'
R(1,1)	→	R'(1,-1)
E(5,1)	→	E'(5,-1)
A(1,3)	→	A'(1,-3)
D(5,3)	→	D'(5,-3)



ACTIVITY 3:

Rotate $\triangle ABC$ counter clockwise 90° about the origin. What are the new coordinates?

$\triangle ABC$	→	$\triangle A'B'C'$
A(2,4)	→	A'(-4,2)
B(4,4)	→	B'(-4,4)
C(2,2)	→	C'(-2,2)

