

Indicators

Objective:

3.04 Solve problems involving geometric figures in the coordinate plane.

Vocabulary and Resources

reflection (flip)
translation (slide)
rotation (turn)
line of reflection
center of rotation
angle of rotation
pre-image
image

x -axis
 y -axis
quadrants
Quadrant I
1st Quadrant
Quadrant II
2nd Quadrant
Quadrant III
3rd Quadrant
Quadrant IV
4th Quadrant

clockwise
counterclockwise
notation:
 $\triangle ABC \rightarrow \triangle DEF$
 $\triangle ABC \rightarrow \triangle A'B'C'$
 $A \rightarrow A'$
 $(x, y) \rightarrow (x', y')$

A. Given the points $A(3, 1)$, $B(3, 6)$, and $D(7, 1)$, what are the coordinates of C if figure $ABCD$ is a rectangle? Determine the perimeter and area of figure $ABCD$.

B. Graph triangle ABC : $A(4, 9)$, $B(1, 3)$, $C(8, 3)$. Determine the area of the triangle. Give the coordinates for a triangle DEF that has an area twice that of triangle ABC .

C. Graph figure $PQRS$: $P(-4, 5)$, $Q(10, 5)$, $R(10, -3)$, $S(-4, -3)$.

- Determine the area and perimeter of the figure.
- Give the coordinates of a figure that has a perimeter half that of figure $PQRS$.
- Give the coordinates of a triangle that has an area half that of figure $PQRS$.

D. Figure $ABCD$ is located in the coordinate plane with the following vertices: $A (-2, 3)$, $B (6, 3)$, $C (6, -5)$ and $D (-2, -5)$. A circle is drawn in the figure as shown below. Give the radius, diameter, and circumference of the circle. Find the area of the unshaded region.

