

Skills Readiness **38 Find Area in the Coordinate Plane**

Definition: The area of a plane figure is the number of square units needed to cover the surface of the figure.

To find the area of a figure in the coordinate plane:

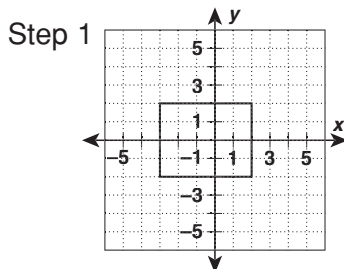
Step 1: If the figure is not already graphed, graph it.

Step 2: Determine the dimensions of the figure by subtracting the appropriate coordinates.

Step 3: Substitute the appropriate dimensions into the formula for the area of the figure.

Step 4: Calculate the area.

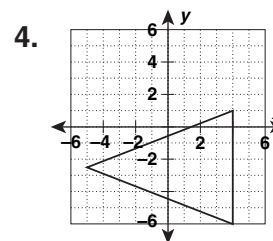
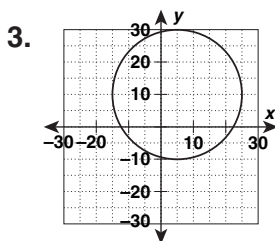
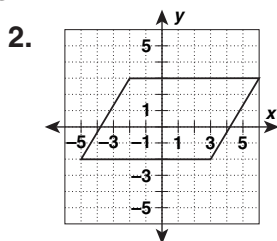
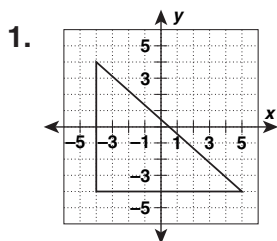
Example: Find the area of the rectangle with vertices $(-3, 2)$, $(2, 2)$, $(2, -2)$ and $(-3, -2)$.



Step 2: Base = $2 - (-3) = 5$
 Height = $2 - (-2) = 4$
 Step 3: $A = bh = (5)(4)$
 Step 4: $A = (5)(4) = 20$

Practice on Your Own

Find the area of each figure.



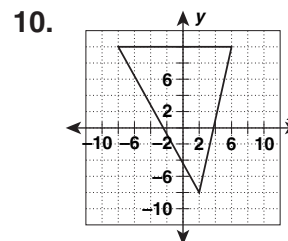
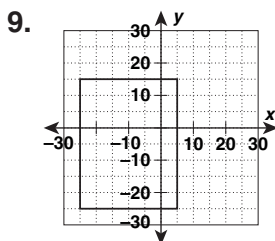
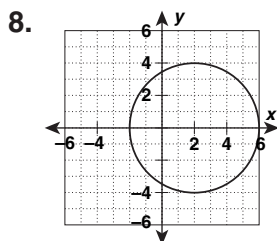
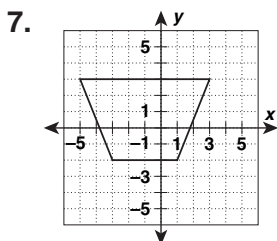
Find the area of each figure with the given vertices.

5. rectangle $ABCD$ with $A(-1, 6)$, $B(4, 6)$, $C(4, 2)$, and $D(-1, 2)$ _____

6. right triangle PQR with $P(-1, 1)$, $Q(5, 1)$, and $R(-1, 4)$ _____

Check

Find the area of each figure.



Find the area of each figure with the given vertices.

11. parallelogram $JKLM$ with $J(-4, 3)$, $K(1, 3)$, $L(5, -1)$, and $M(0, -1)$ _____

12. circle C whose diameter passes through the points $(-2, -3)$ and $(4, -3)$ _____