

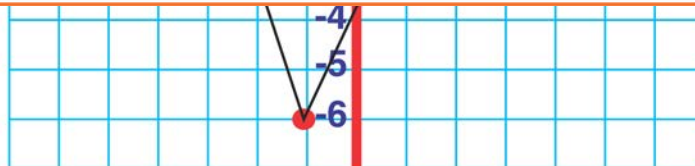
CALCULATE THE AREA OF BASIC POLYGONS DRAWN ON A COORDINATE PLANE

- A coordinate plane is a grid on which points can be plotted.
- The horizontal axis is labeled with positive numbers to the right of the vertical axis and negative numbers to the left of the vertical axis.
- The vertical axis is marked with positive numbers above the horizontal axis and negative numbers below the horizontal axis.
- Points are plotted using coordinates which indicate its location: (5, 7) or (-4, 3) or (-1, -6)



PREVIEW

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- Polygons can be plotted and their sides measured by using the coordinates.
- The area of the region within the sides of the polygon is calculated by using the formula:

$$\text{Area} = \text{length} \times \text{width}$$

How to calculate the area of a basic polygon drawn on a coordinate plane:

- Begin by plotting the four points which will be the corners of the polygon.
- The first number in the coordinate indicates the point's position relative to the horizontal axis and the second number places the point relative to the vertical axis.
 - A point located at (6, 3) is 6 spaces to the right of the vertical axis and 3 spaces above the horizontal axis.
 - A point located at (2, -7) is 2 spaces to the right of the vertical axis and 7 spaces below the horizontal axis.



PREVIEW

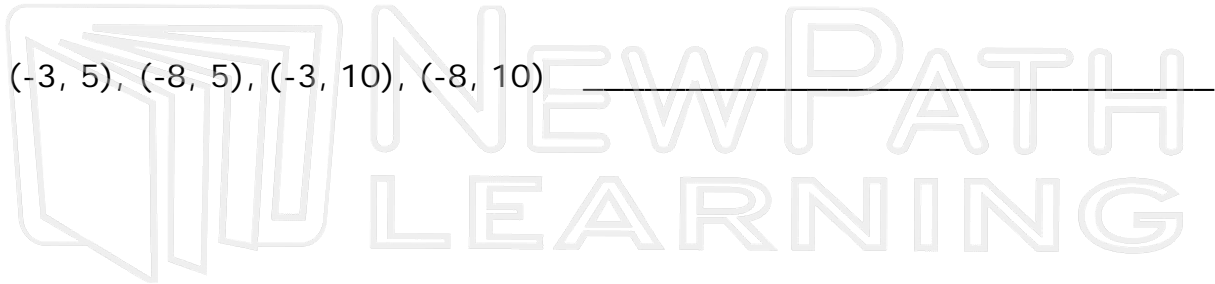
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- The polygon is a square that measures 4 by 4
 - **$A = l \times h \rightarrow A = 4 \times 4 = 16 \text{ sq. units}$**
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- The coordinates for a polygon are: (3, 4), (15, 4), (3, 12) and (15, 12)
 - The length is from 3 to 15 along the horizontal axis, 12 units
 - The width is from 4 to 12 along the vertical axis, 8 units
 - The polygon is a rectangle that measures 12 by 8
 - **$A = l \times h \rightarrow A = 12 \times 8 = 96 \text{ sq. units}$**

Try This!

Plot the points for each polygon and calculate the area:

$(-3, 5), (-8, 5), (-3, 10), (-8, 10)$ _____



$(-2, -5), (-8, -5), (-2, -11), (-8, -11)$ _____

$(8, -3)$ _____



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$(2, 5), (10, 5), (2, 13), (10, 13)$ _____

$(-2, 3), (-5, 3), (-2, 10), (-5, 10)$ _____

