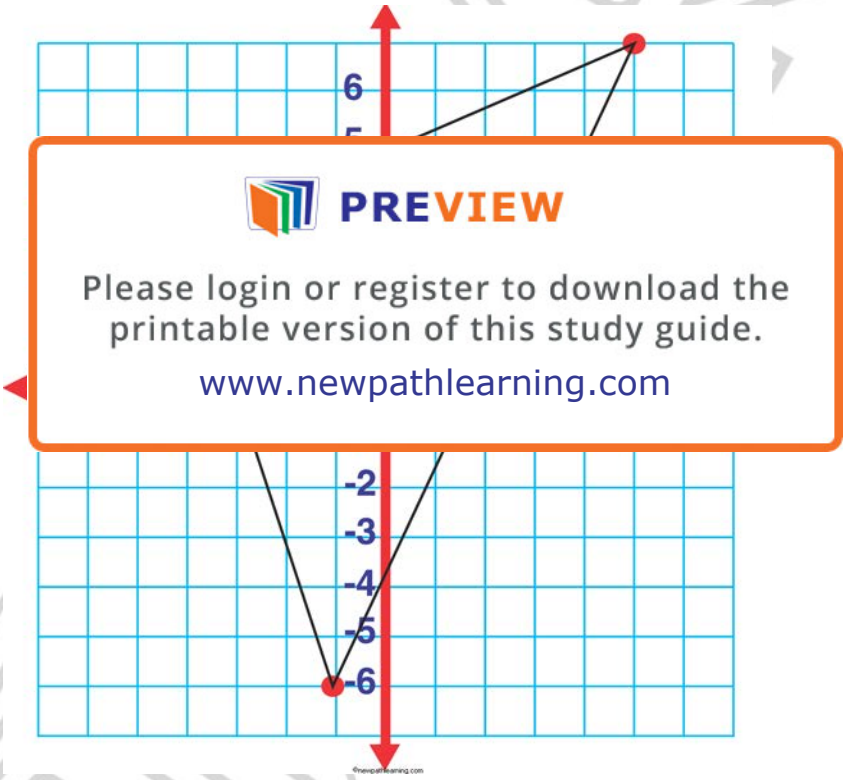
# CALCULATE THE AREA OF BASIC POLYGONS DRAWN ON A COORDINATE PLANE

- 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)






- 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:

**Area = length X 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
- Connect the four points (corners).
- Use the
- Use the



**Examples**

- The coc and (6, 10)
    - The length is from 2 to 6 along the horizontal axis or 4 units
    - The width is from 6 to 10 along the vertical axis or 4 units
    - The polygon is a square that measures 4 by 4
    - **A = l** x **h** → **A = 4 x 4 = 16 sq. units**
- 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** x **h** → **A = 12** x **8 = 96 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), (15, -



_____

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

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