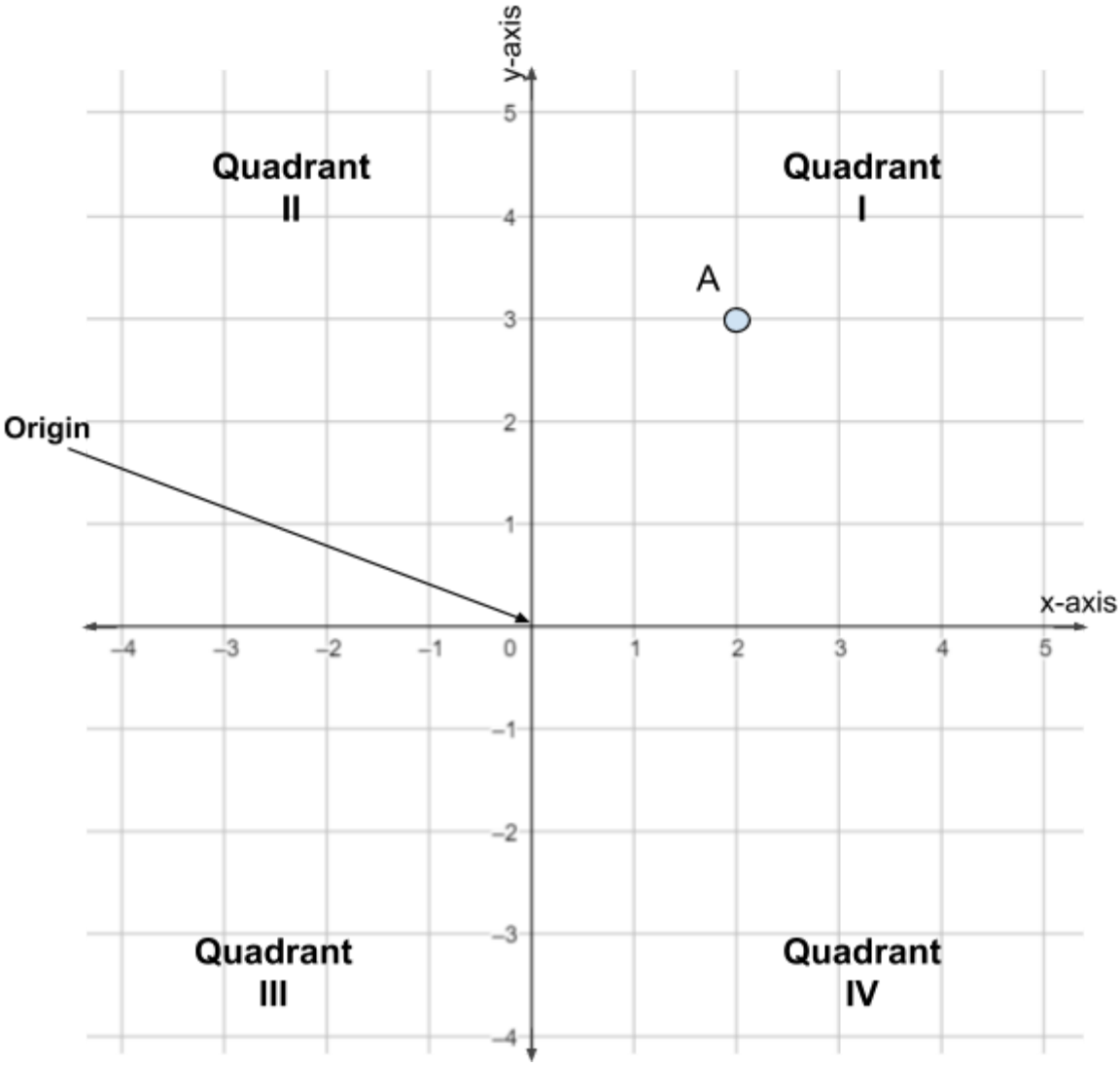
The Coordinate Plane

The coordinate plane has two number lines that split the plane into four ***quadrants***. Quadrants are numbered in a counterclockwise direction. The horizontal number line (left and right) is called the ***x-axis.*** The vertical number line (up and down) is called the ***y-axis***. The point where the two number lines intersect is called the ***origin***.



How could you use the coordinate plane to describe the location of point A?

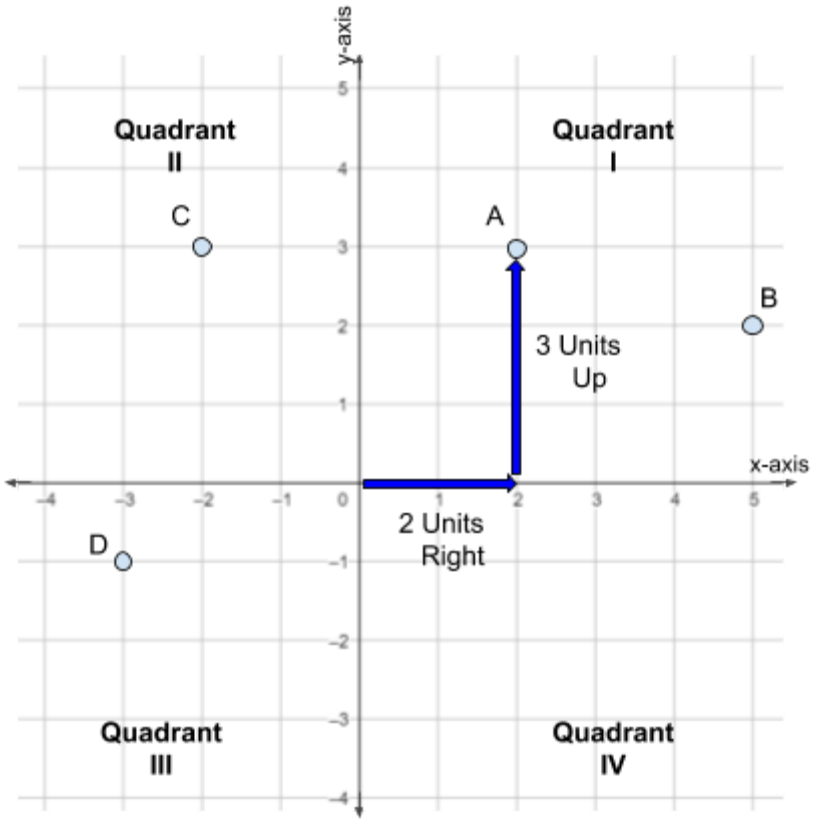
Locating Points, or LED lights, using the Coordinate Plane

You can locate points by telling someone how far from the origin to move to the left or right (horizontally) and up or down (vertically) to get to the point.

- ***x-coordinate:*** the number of units, ***x***, you move ***horizontally*** from the origin.
- ***y-coordinate:*** the number of units, ***y***, you move ***vertically*** from the origin.

Points are named using ordered pairs (***x***, ***y***). In an ordered pair, ***x*** always comes first.

Example: To get to point A from the origin, you move 6 units to the right and 4 units up. The ordered pair (6, 4) tells you the location of point A.



If you move left of the origin, you will need to use a ***negative x-coordinate***. If you move down from the origin, you will need to use a ***negative y-coordinate***.

Practice

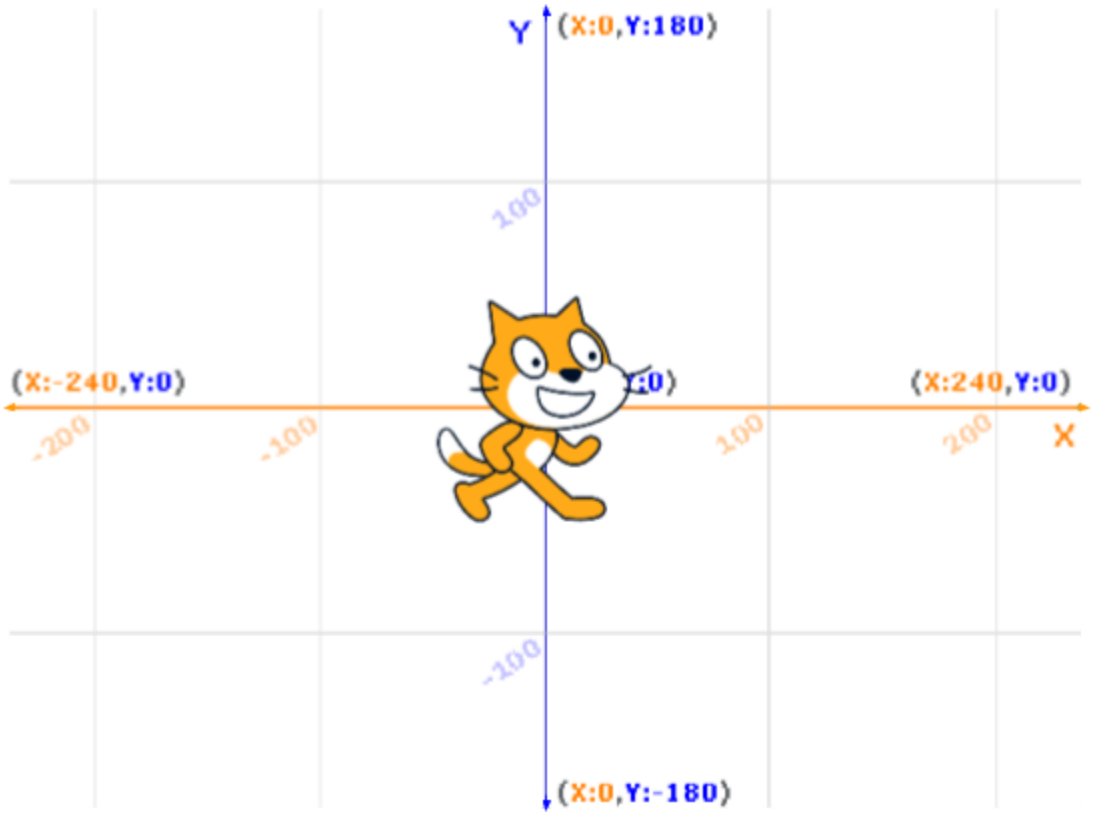
What ordered pair tells you the location of point B? _____

What ordered pair tells you the location of point C? _____

What ordered pair tells you the location of point D? _____

Coordinate Planes in Programming

Some programming languages, like the one used in Scratch, use a coordinate plane to describe the locations of points. Below is a screenshot from Scratch, with the coordinate plane showing.



How would you complete the following command to get the cat to move to somewhere in Quadrant II (the top left corner of the screen)?