Math Study Strategies

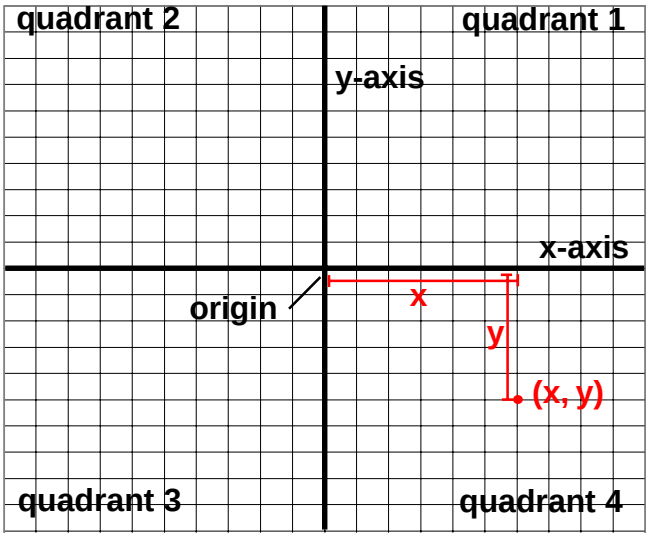
The Rectangular Coordinate System

The idea of associating an **ordered pair of numbers** with points on a **grid** is attributed to the 17th century French mathematician Rene' Descartes. The **grid** is often called the **rectangular coordinate system**, or **Cartesian coordinate system** after its inventor.

The rectangular coordinate system is formed by two intersecting **perpendicular number lines**. The **horizontal** number line is called the **x-axis** and the **vertical** number line is called the **y-axis**. The point where the two axis cross is called the **origin**.

The two axis form four regions in the grid called **quadrants**. The four quadrants are numbered 1,2,3, and 4, with the **quadrant one** always being the **upper right** region. The other three quadrants are numbered in an anti-clockwise direction from quadrant one.

Every point on the coordinate plane (grid) can be identified by an **ordered pair** of real numbers x and y, written as **(x, y)**. The numbers are a pair because there are two numbers (x and y), and they are ordered because "x " is written before "y". The first number in the ordered pair is the x-coordinate, which is the horizontal distance from the *origin* to the *point*. The second number is the y-coordinate, which is vertical distance from the *origin* to the *point*.



Refer to the table below for the sign of each coordinate in each quadrant.

Quadrant	X-coordinate	Y-coordinate
1	+	+
2	-	+
3	-	-
4	+	-

For more information about this and other math topics, come to the Math Lab 722-6300 x 6232. Caproiu & Hall, 2000. Created by Varaz and Vasag Bozoghlanian.