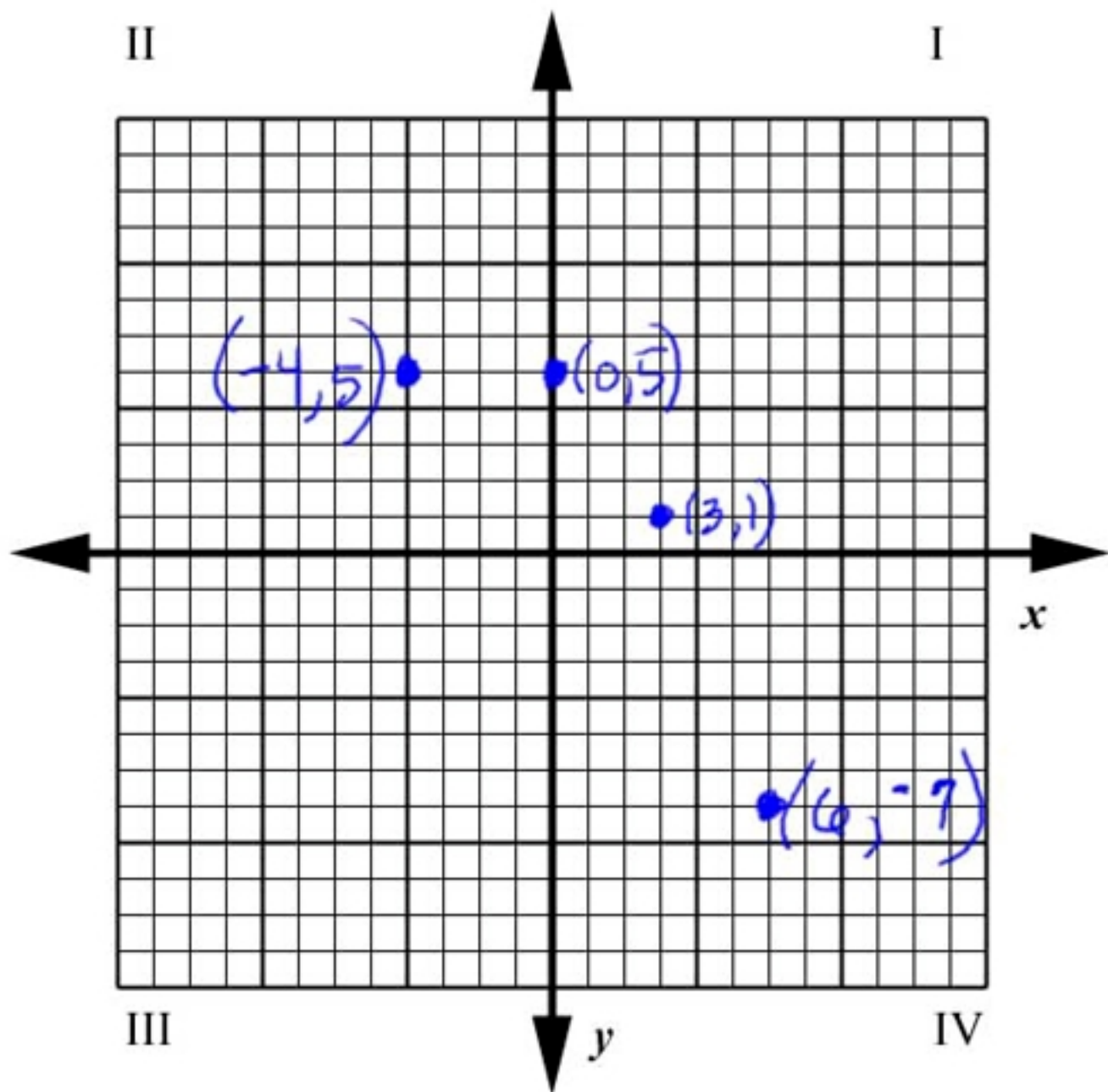


On a number line each point corresponds to a number. On a plane each point corresponds to an *ordered pair* of numbers. We draw an *x-axis* and a *y-axis* perpendicular to each other. The intersection of these two lines is the *origin*, which is labeled *O*. This plane is called the *co-ordinate plane* or *Cartesian plane*.

The first number in a ordered pair is called the *x-coordinate* or *abscissa*. The second number is called *y-coordinate* or *ordinate*. Together these are called the *coordinates* of a point.

The axes divide the plane into four regions called *quadrants* and are represented by Roman numerals starting in the upper right region and rotating counter clockwise.



Ex 1) Graph the following ordered pairs on the same coordinate plane:  $(3, 1)$ ,  $(0, 5)$ ,  $(-4, 5)$ ,  $(6, -7)$

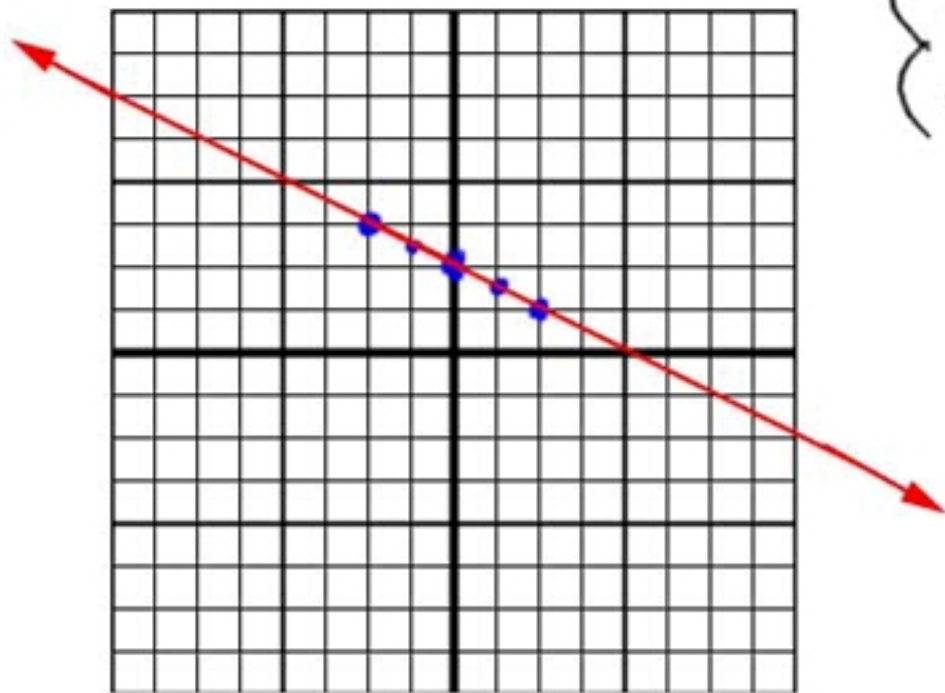
Ex 2) Find and graph five solutions of  $2x + 4y = 8$

$$2x + 4y = 8$$

$$\frac{4y}{4} = \frac{-2x + 8}{4}$$

$$y = -\frac{1}{2}x + 2$$

$x$	$y$
$(-2)$	$3$
$(-1)$	$2\frac{1}{2}$
$(0)$	$2$
$(1)$	$1\frac{1}{2}$
$(2)$	$1$



Theorem

The graph of every equation in the form

$Ax + By = C$  is a line (A and B are both not equal to 0)

Ex 3) Graph  $3x - 5y = 15$

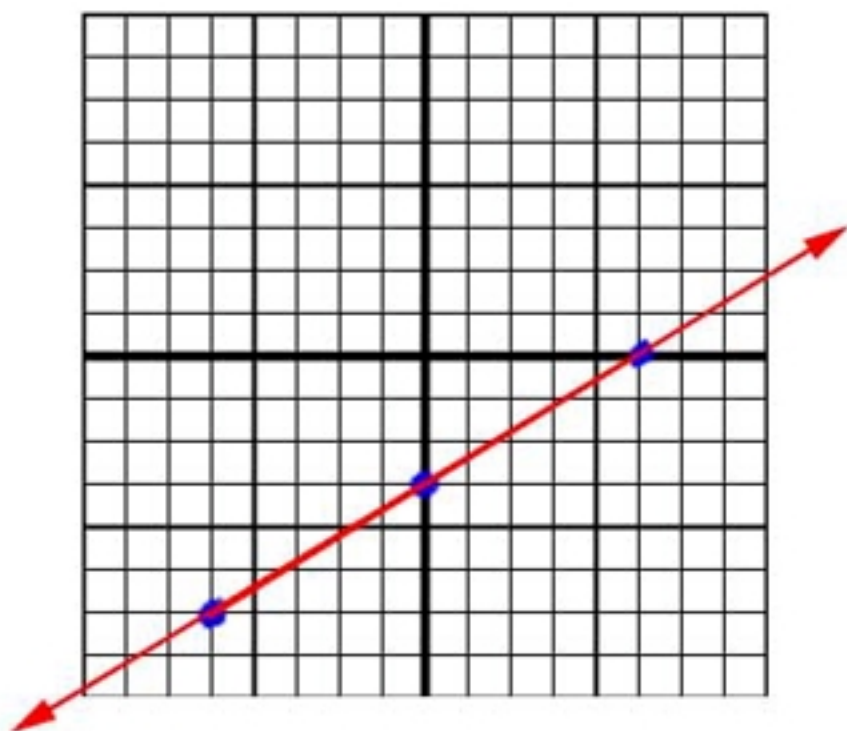
$$3x - 5y = 15$$

$$-5y = -3x + 15$$

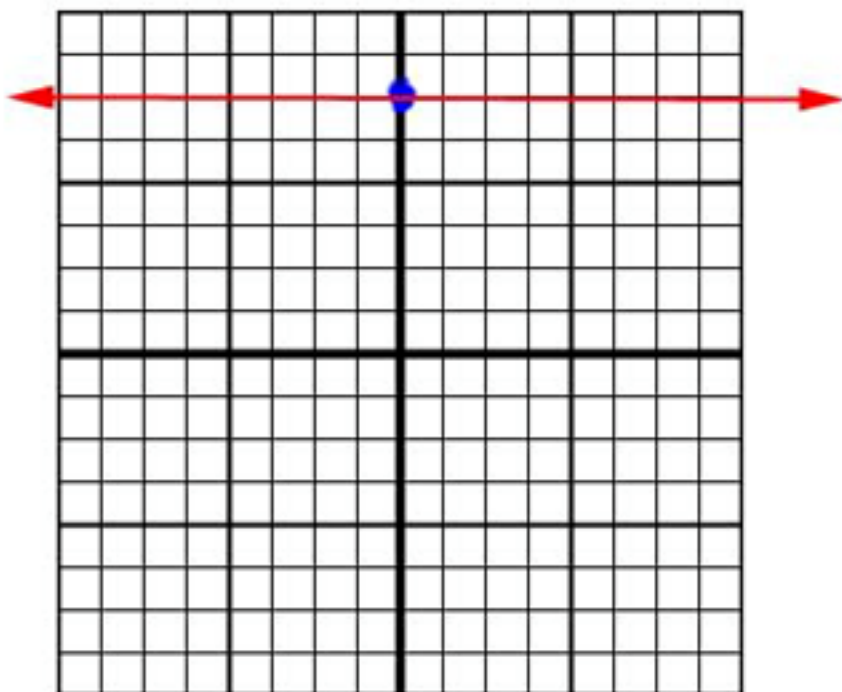
$$\frac{-5y}{-5} = \frac{-3x + 15}{-5}$$

$$y = \frac{3}{5}x - 3$$

x	y
(-5	-6)
(0	-3)
(5	0)



Ex 4) Graph  $y = 6$



Ex 5) Graph  $x = -7$

