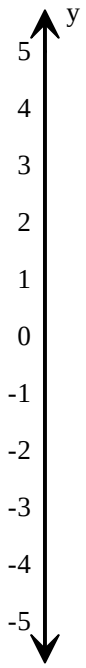
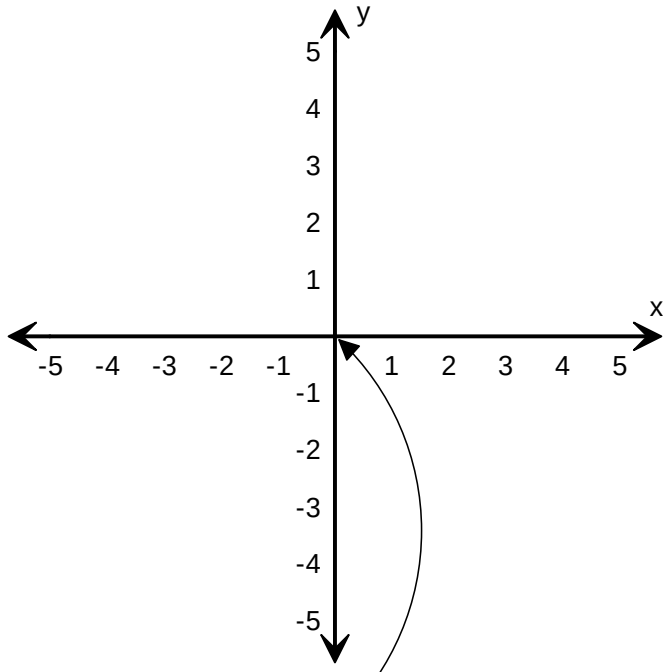
Crossing two number lines gives us a coordinate system. We can use coordinate systems to locate points.

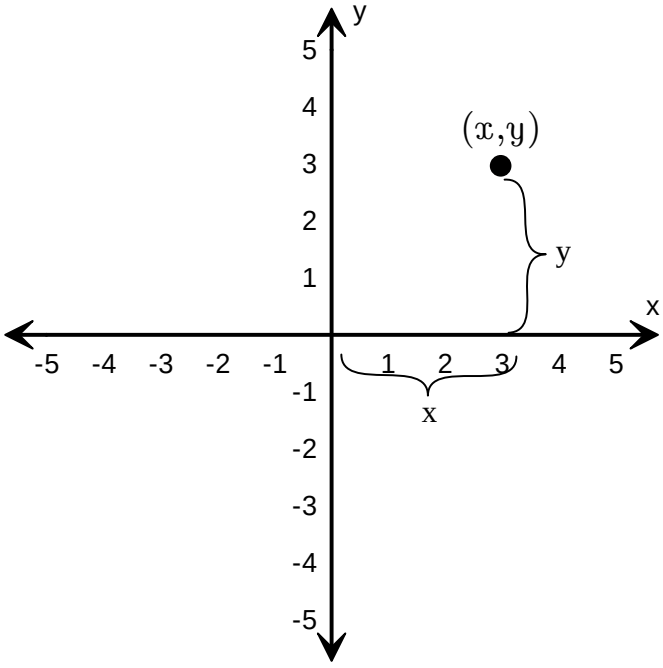
Begin with a vertical number line.
This is usually called the y axis.

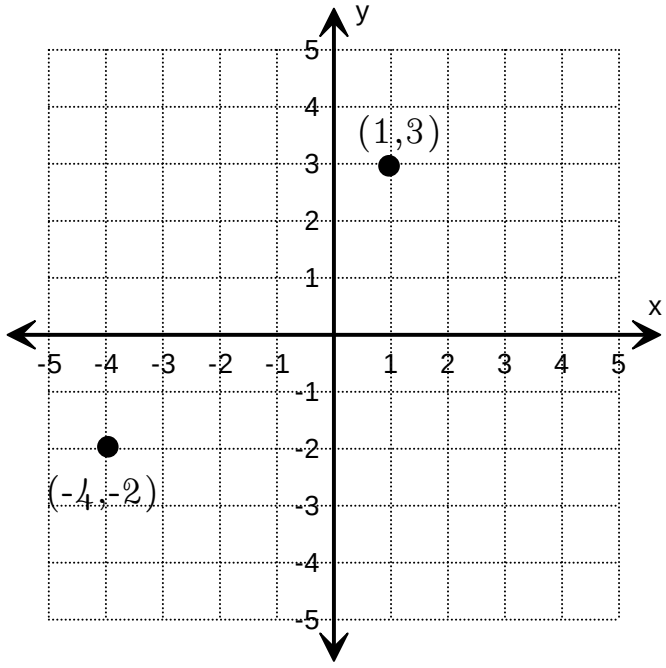


Draw a horizontal number line.
Cross it with the vertical one at 0.
The horizontal axis is the x axis.



The point where the lines meet is known as the origin.
The point with coordinates (x,y) is known also as an ordered pair.
"Ordered" means we can't switch them around in general.
The word ordered means that in general, (x,y) is NOT the same as (y,x)





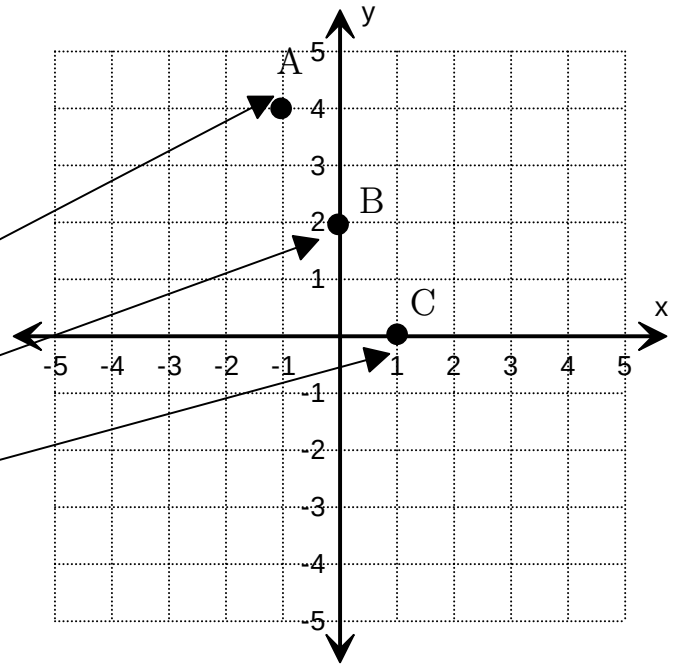
Graphing a simple linear equation using points.

Graph the equation $2x+y=2$

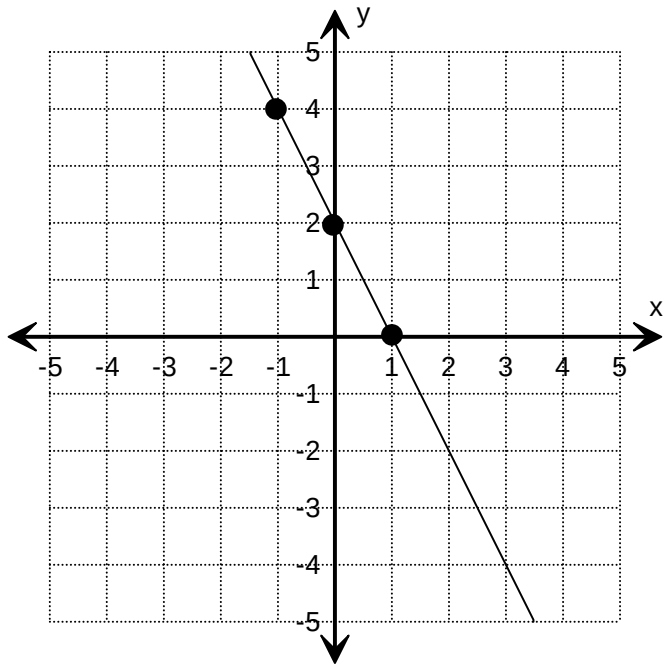
It's helpful to write the equation as $y=2-2x$

1) Make a table of x and y values.

1st	2nd	3rd
x	$y=2-2x$	(x,y)
-1	$2-2(-1)=2+2=4$	A=(-1,4)
0	$2-2(0)=2-0=2$	B=(0,2)
1	$2-2(1)=2-2=0$	C=(1,0)



2) Once the points are plotted, connect them with a straight line.

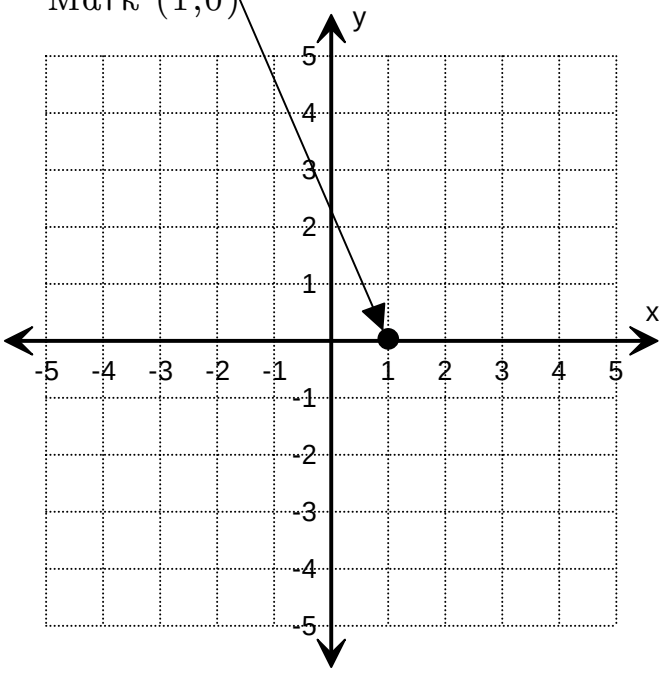


The x intercept is where a line crosses the x axis.
This is found by setting $y=0$ in an equation.
Given
$2x+y=2$

Find the x intercept:
Set $y=0$ and solve for x

$2x+0=2$ replace y with 0
$2x=2$ simplify
$x=1$ divide both sides by 2

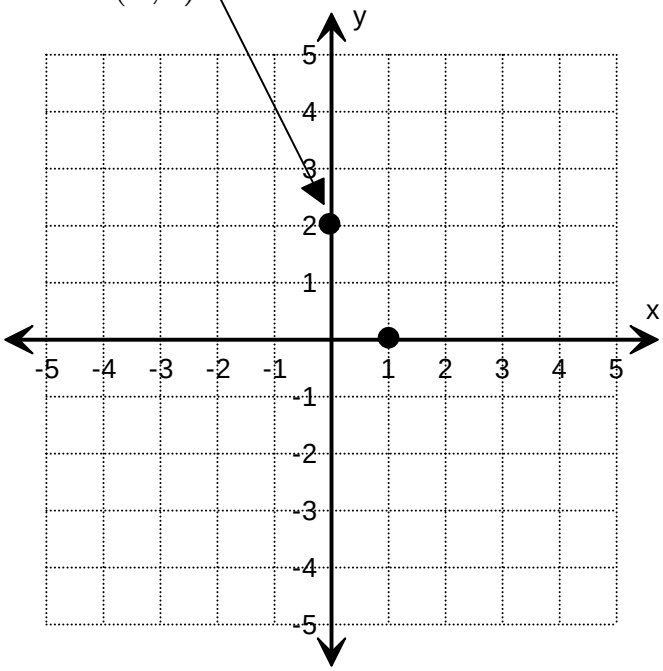
Mark (1,0)



Find the y intercept:
Set $x=0$ and solve for y

$2(0)+y=2$ replace x with 0
$0+y=2$ simplify
$y=2$

Mark (0,2)



Connect the points with a straight line.