Equations of Horizontal and Vertical lines:

Because the slope of a Horizontal Line = 0

y = mx + b becomes **y = b**

b is not only the y-intercept it is the y-coordinate of any point on the line.

Because the slope of a Vertical Line is Undefined it's equation can't be written in Slope-Intercept Form

Vertical Line Eq: **x = #**

this is the x-intercept or the x-coordinate of any point on the line.

Write the equation of the line that passes through these two points:

(4, 3) & (−6, 3)

Horizontal Line

y = 3

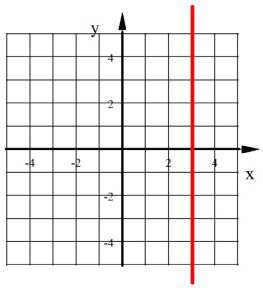
Write the equation of the line that passes through these two points:

(5, −8) & (5, −1)

Vertical Line

x = 5

Write the equation of each line:



Vertical Line

x = 3

The line that passes through this pair of points:

(3, 10) and (-4, 10)

y = 10

Horizontal Line

Write the equation of each line:

The line has a slope of zero and passes through the point (7,-9)

y = −9

Horizontal Line

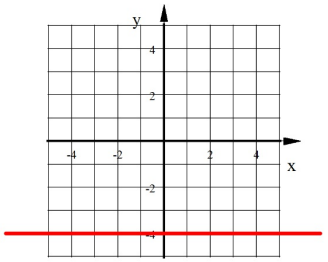
The line that passes through this pair of point

(2, -7) and (2, 8)

x = 2

Vertical Line

Write the equation of each line:



Horizontal Line

$y = -4$

The slope is undefined and the line passes through (-2,11)

$x = -2$

Vertical Line

Find both the x and y intercepts of the line whose equation is $8x - 24y = 48$

y-int: $(0, -2)$
The value of y when x = 0

$8(0) - 24y = 48$

$\frac{-24y}{-24} = \frac{48}{-24}$

y-int $= -2$

x-int: $(6, 0)$
The value of x when y = 0

$8x - 24(0) = 48$

$\frac{8x}{8} = \frac{48}{8}$

x-int $= 6$

Find the x and y intercepts of this equation:

$y = x^2 + 3x - 40$

y-int:
The value of y when x = 0

$y = (0)^2 + 3(0) - 40$

y-int = -40

x-int:
The value of x when y = 0

$0 = x^2 + 3x - 40$

-40, $+8$, -5, $+3$

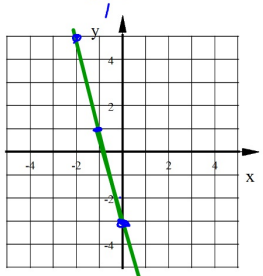
$0 = (x+8)(x-5)$

$x = -8, 5$

xint = -8 and 5

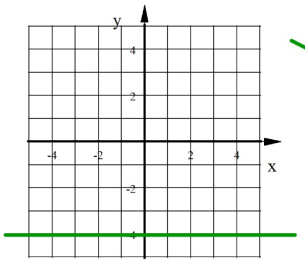
Get a sheet of graph paper and a ruler. Graph each line:

$y = -4x - 3$



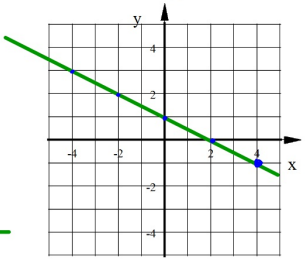
y-int = -3 and m = -4/1

$y = -4$



Horizontal Line where y = -4

$y + 1 = -\frac{1}{2}(x - 4)$

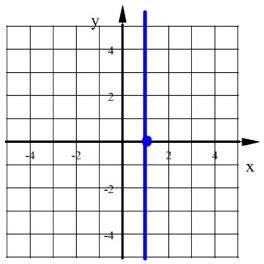


m = -1/2 and the point used to write the equation is (4,-1)

or you could rewrite this equation into Slope-Int Form

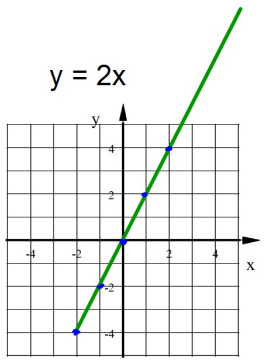
Graph each line:

x = 1



Vertical Line
where x=1

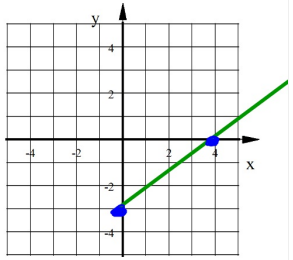
y = 2x



y-int = 0 and m = 2/1

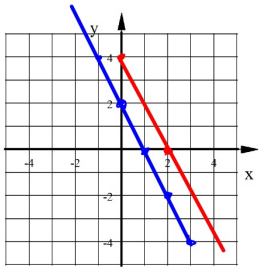
6x - 8y = 24

x-int = 4
y-int = -3



Or you could rewrite this equation into Slope-Int Form

Graph these lines together on the same set of axes.



y = - 2x + 2

8x + 4y = 16

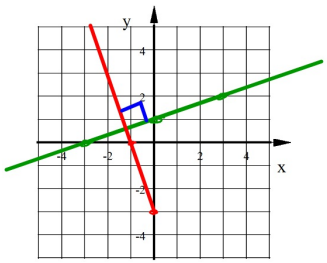
x-int = $\frac{16}{8} = 2$

y-int = $\frac{16}{4} = 4$

These lines are Parallel.

symbol: ||

Graph these lines together on the same set of axes.



$y = \frac{1}{3}x + 1$

-15x - 5y = 15

x-int = -1

y-int = -3

These lines are perpendicular

Symbol: ⊥