3-1 Graphing Linear Equations

Linear – straight line when graphed

Standard Form

$$Ax + By = C$$

$Ax + By$: variables

C: constant

A B coefficients (a # that goes with the variable).

Standard Equation
$Ax+By=C$

a.) $1y = 4 - 3x$
$+3x$
$3x + 1y = 4$
linear equation

$12x + 2y = 8$
$6x + 1y = 4$ linear equation
GCF = 1

$6x - xy = 4$

$Ax + By = C$

$Ax + By = C$

1A. $\frac{1}{3}y = -1$

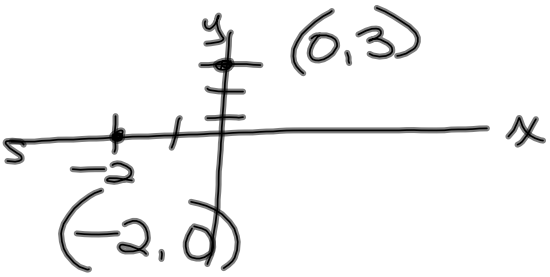
$0x + \frac{1}{3}y = -1$ linear

$Ax \geq 0$

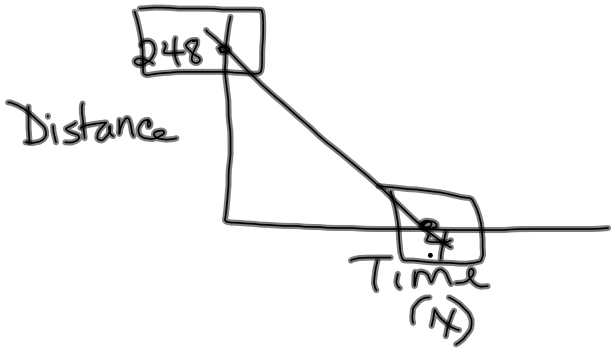
1B $y = x^2 - 4$ not linear

exponent = parabola

x intercept
where the line crosses the x axis = $y=0$



y intercept
where the line crosses the y axis $x=0$


248
Distance
8
Time
(N)

Only <u>two</u> points needed to graph a line

- the x intercept
- the y intercept

$\frac{2}{2}x + \frac{4}{2}y = \frac{16}{2}$

$1x + 2y = 8$

let $y = 0$ then $1x + 2(0) = 8$

$1x = 8$

$x = 8$

$(8, 0)$ x intercept

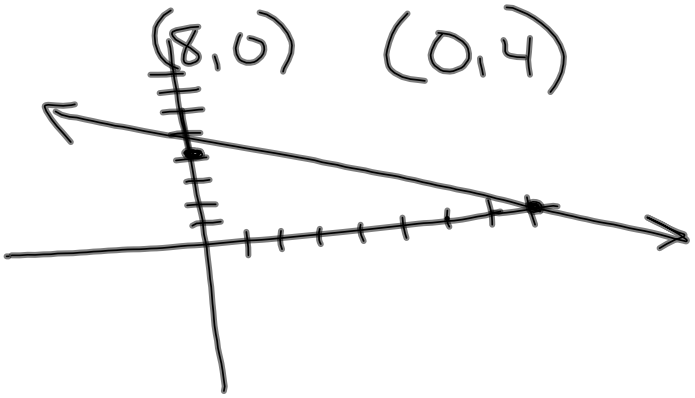
y intercept let $x = 0$

$1(0) + 2y = 8$

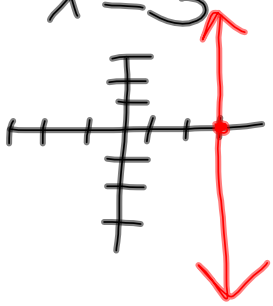
$2y = 8$

$y = 4$

$(0, 4)$ y intercept

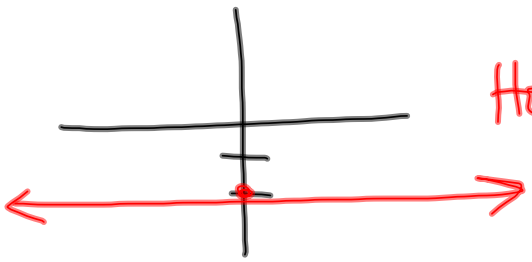


5B. $x = 3$



Vertical Line

5C= $y = -2$



Horizontal Line

$Ax+By=C$

18. $y = 4x + x$

$0 = 5x - 1y$

yes linear

$5x - 1y = 0$