A function of the form:

$f(x) = m \cdot x + b$

where m and b are constants, is called a linear function.

Example: Find solutions to the linear function

$f(x) = -3 \cdot x + 6$

Recall: A solution of a function y=f(x) is a pair of numbers (x, f(x)) OR (x,y) that makes the equation true.

$x = 0$

$f(x) =$

(,) is a solution

$x = 1$

$f(x) =$

(,) is a solution

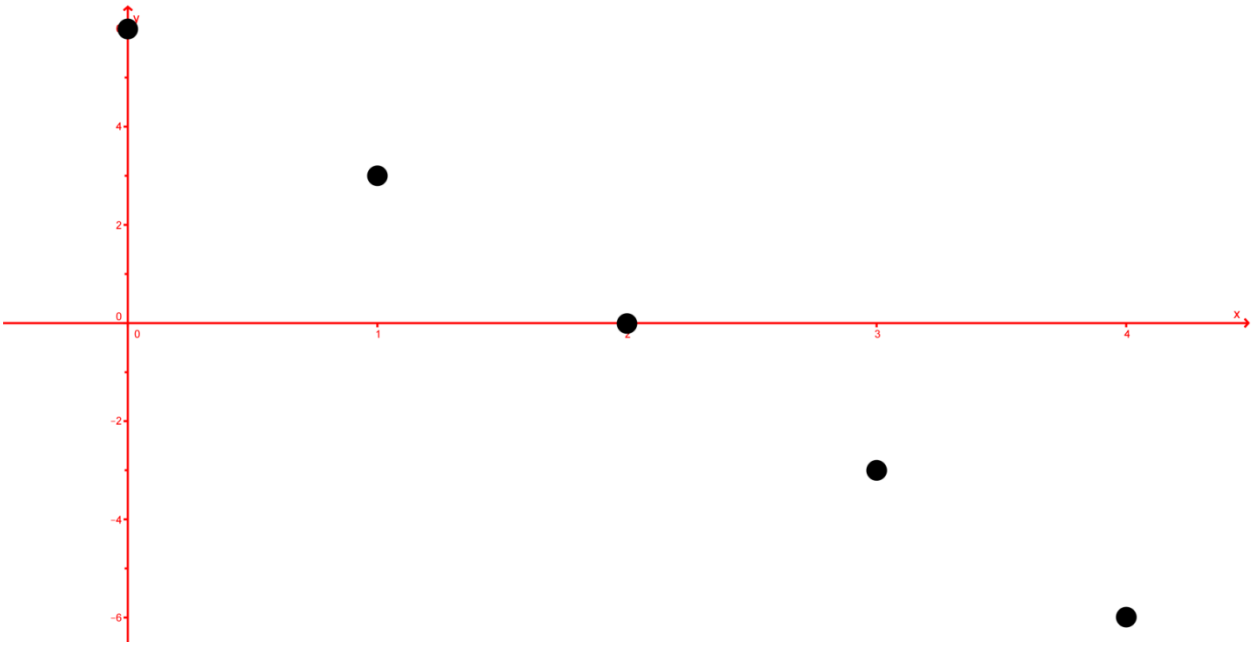
$x = 2$

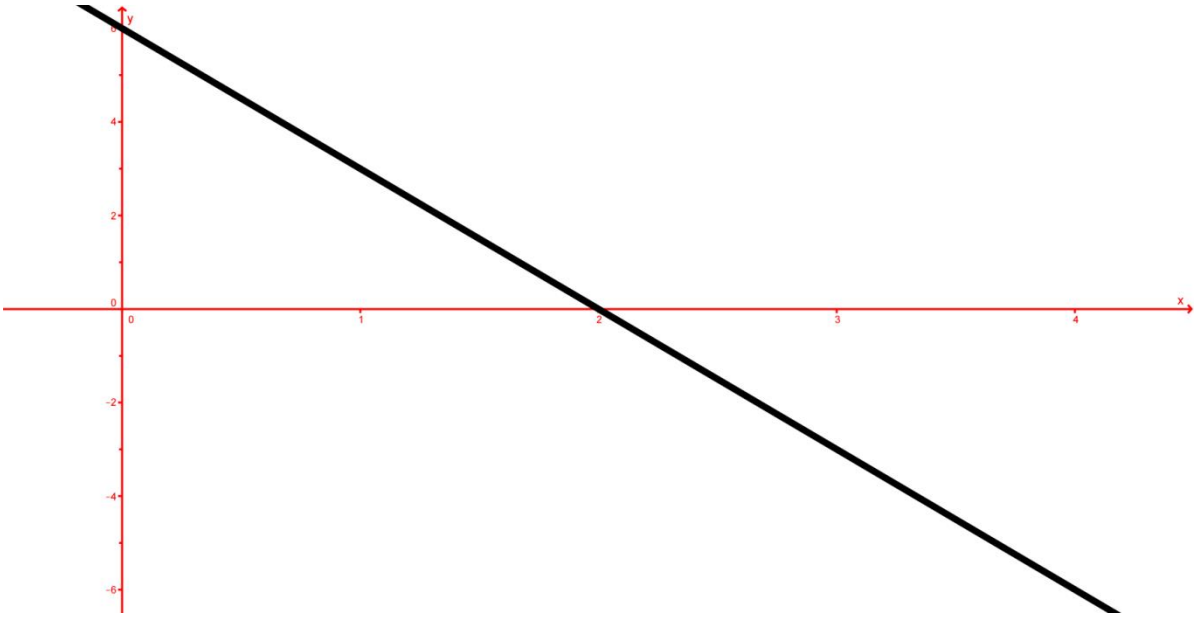
$f(x) =$

(,) is a solution

Solutions of: f(x)= -3x+6

x	0	1	2	3	4
f(x)					





y-intercept: x=0

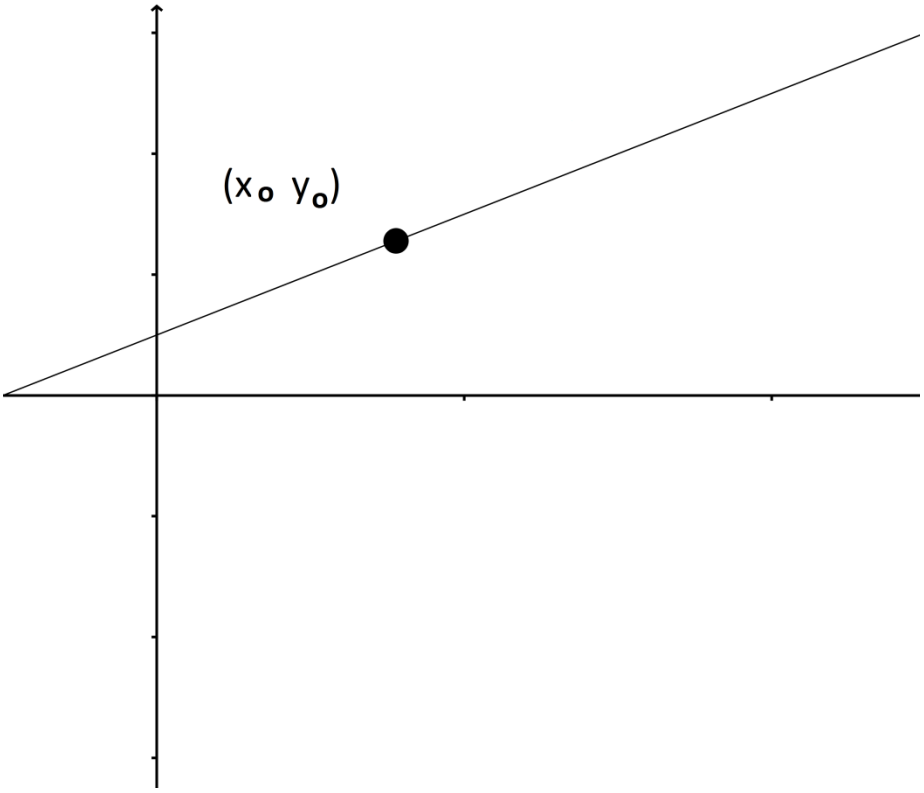
x-intercept: y=0

Note: The y-value of the y-int appears as the constant of f(x) = -3 · x + 6

Another Equation for a line

Slope = m

Point : (x_o , y_o)



$$m = \frac{y - yo}{x - xo}$$

Point-Slope Form

An equation for a line with slope = m and a point (x_o , y_o) is:

Example: Find an equation of the line with

slope = m = -2

Point: (1,2)

Example: (Economics) Suppose we are starting a lemonade stand. We spend $20 on a pitcher and wood to build the stand. We spend an additional $2 on lemons, sugar, water, and ice for each pitcher of lemonade we make. What is the cost to run the lemonade stand?

Linear Functions Recap

Slope-Intercept Form:

Slope = Rate of change =

y-intercept:

x-intercept:

Point-Slope Form: where (x_o, y_o) is a point on the line.