

What you will learn about:
Functions

Function

$$f(x) \rightarrow f \text{ of } x$$

$$g(x) \text{ } g \text{ of } x$$

$$h(t) \text{ } h \text{ of } t$$

$$y = \text{equation}$$

$$f(x) = \text{function}$$

Given the functions: $f(x) = 2x - 5$, $g(x) = -3x + 9$, and $h(x) = x^2 - 3x + 6$

Evaluate the following:

$$f(6) = 2(6) - 5 = 12 - 5 = 7 \quad (6, 7)$$

$$g(-3) = -3(-3) + 9 = 9 + 9 = 18 \quad (-3, 18)$$

$$h(2) = (2)^2 - 3(2) + 6 = 4 - 6 + 6 = 4 \quad (2, 4)$$

$$f(-1) = 2(-1) - 5 = -2 - 5 = -7$$

$$g(7) = -3(7) + 9 = -21 + 9 = -12$$

$$h(-4) = (-4)^2 - 3(-4) + 6 = 16 - (-12) + 6 = 34$$

$$f(4) + g(2) = 2(4) - 5 + (-3(2) + 9) = 3 + 3 = 6$$

$$h(1) - g(4) = (1)^2 - 3(1) + 6 - (-3(4) + 9) = 4 - 3 + 6 - (-12 + 9) = 7 - (-3) = 10$$

$$f(0) - h(3) = 2(0) - 5 - (3^2 - 3(3) + 6) = -5 - (9 - 9 + 6) = -5 - 6 = -11$$

$$g(x) = -3x + 9$$

$$f(x) = 2x - 5$$

$$g(x) - f(x) = (-3x + 9) - (2x - 5) = -3x + 9 - 2x + 5 = -5x + 14$$

$$h(x) + f(x) = (x^2 - 3x + 6) + (2x - 5) = x^2 - x + 1$$

$$h(x) - g(x) = (x^2 - 3x + 6) - (-3x + 9) = x^2 - 3x + 6 + 3x - 9 = x^2 - 3$$

What you will learn about:
Linear Functions

Graph the Linear Equation

$$y = mx + b$$

$m = \text{Slope}$ $\frac{\text{rise}}{\text{run}}$
 $\frac{\Delta y}{\Delta x}$
 $b = \text{y-intercept}$

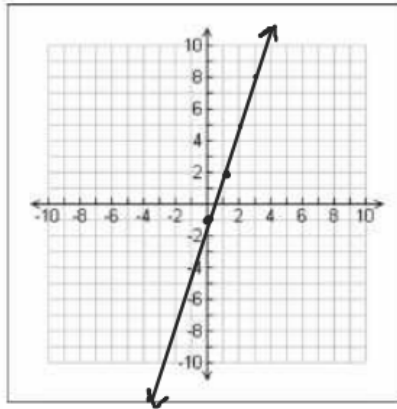
Crosses y-axis

Graph the linear function

$$f(x) = 3x - 1$$

$$m = 3 = \frac{3}{1} \begin{matrix} \text{up} \\ \rightarrow \text{right} \end{matrix}$$

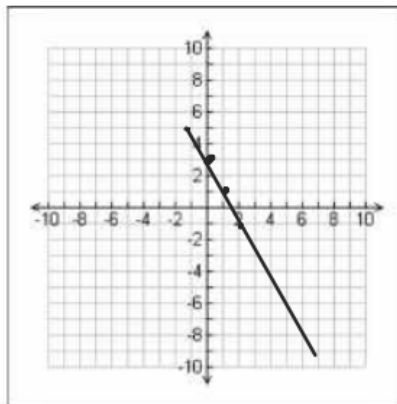
$$b = -1 \quad (0, -1) \quad \leftarrow \text{start here}$$



$$g(x) = -2x + 3$$

$$m = -2 = \frac{-2}{1}$$

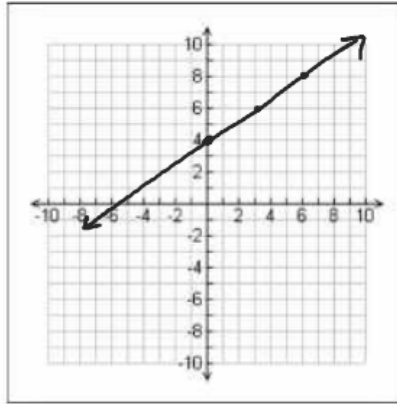
$$b = 3 \quad (0, 3)$$



$$h(x) = \frac{2}{3}x + 4$$

$$m = \frac{2}{3}$$

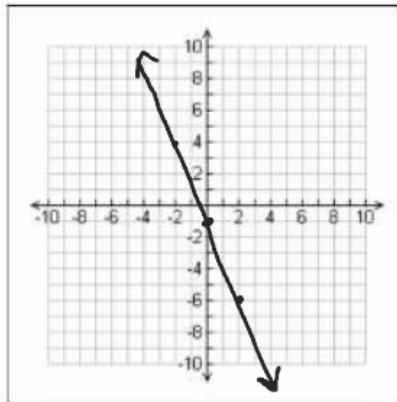
$$b = (0, 4)$$



$$p(x) = -\frac{5}{2}x - 1$$

$$m = -\frac{5}{2}$$

$$b = -1 \quad (0, -1)$$



Solve each equation:

$$\boxed{-9x} + 1 = -80$$

$$\begin{array}{r|l} -1 & -1 \\ \hline -9x & -81 \\ \hline -9 & -9 \end{array}$$

$$x = 9$$

$$\begin{array}{r|l} -15 & -4m + 5 \\ \hline -5 & -5 \end{array}$$

$$\begin{array}{r|l} -20 & -4m \end{array}$$

$$m = 5$$

$$\begin{array}{r|l} -6 & \frac{n}{2} - 10 \\ \hline +10 & +10 \end{array}$$

$$2(4) = \left(\frac{n}{2}\right)2$$

$$8 = n$$

$$-4 = \frac{r}{20} - 5$$

$$r = 20$$

$$8n + 7 = 31$$

$$\begin{array}{r|l} -7 & -7 \end{array}$$

$$\begin{array}{r|l} 8n & 24 \\ \hline 8 & 8 \end{array}$$

$$n = 3$$

$$-x\left(\frac{n+5}{-26}\right) = (-1)(-16) \quad n = 3$$

$$n + 5 = 16$$

$$n = 11$$

$$\textcircled{11}$$

$$-21$$

$$6(-1) = \left(\frac{5+x}{6}\right)6$$

$$-6 = 5 + x$$

$$x = -11$$

$$\frac{m}{9} - 1 = -2$$

$$m = -9$$