

What is the x-intercept?

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## What is the x-intercept?

The x-intercept is where the graph intersects the x-axis. How do we find the x-intercept? One way would be to graph the function and visually see and locate where the graph intersects the x-axis. Another way is to use the equation of the function and then let the equation equal 0 and solve for x.

$$y = f(x) = 0, \text{ then solve for } x.$$

Let's consider an example. Suppose we have the following linear relation,

$$2x + 7y = -4$$

To find the x-intercept, let  $y = 0$  and solve for the variable  $x$ .

$$\begin{array}{rcl} 2x + 7y & = & -4 \\ 2x + 7(0) & = & -4 \\ 2x & = & -4 \\ \frac{2x}{2} & = & \frac{-4}{2} \\ x & = & -2 \end{array} \quad \begin{array}{l} \text{let } y=0 \\ \\ \text{divide both sides by } 2 \end{array}$$

This means the x-intercept is  $x = -2$ .

## Exercises

Find the x-intercept and y-intercept for the following linear relationships.

a)  $3x - y = 2$

b)  $2y + 3x = 2x - 1$

c)  $3 = y - x$

d)  $-4x - 3 = 6y$

e)  $1 + 3x = -6y$

f)  $-4x = 2 - y$

g)  $3 + 2x + y = 2y - 4x + 5$