



Bell Ringer:

$$6x + 2(x - 4) = 2(3x + 1) - (x + 4)$$

$$6x + 2x - 8 = 6x + 2 - x - 4$$

$$8x - 8 = 5x - 2$$

$$3x = 6$$

$$x = 2$$

# Linear Equations

- Equations with two variables.
- Solutions are ordered pairs (  $x$  ,  $y$  ) that make the equation a true statement.
- Forms a line when graphed on a coordinate plane. All points on the line are solutions to the equation.

## Steps for Graphing

- 1) Rewrite the equation into function form, if necessary.
- 2) Make a table of values; use easy to work with  $x$ -values to solve for  $y$ .
- 3) Plot the points on a coordinate plane and connect with a line.

Are the ordered pairs a solution to  $2y - 9x = -11$  ?

a. (5, 17)

$$2(17) - 9(5) = -11$$

$$34 - 45 = -11$$

$$-11 = -11$$

True or Yes

b. (-1, 10)

$$2(10) - 9(-1) = -11$$

$$20 + 9 = -11$$

$$29 = -11$$

False or No

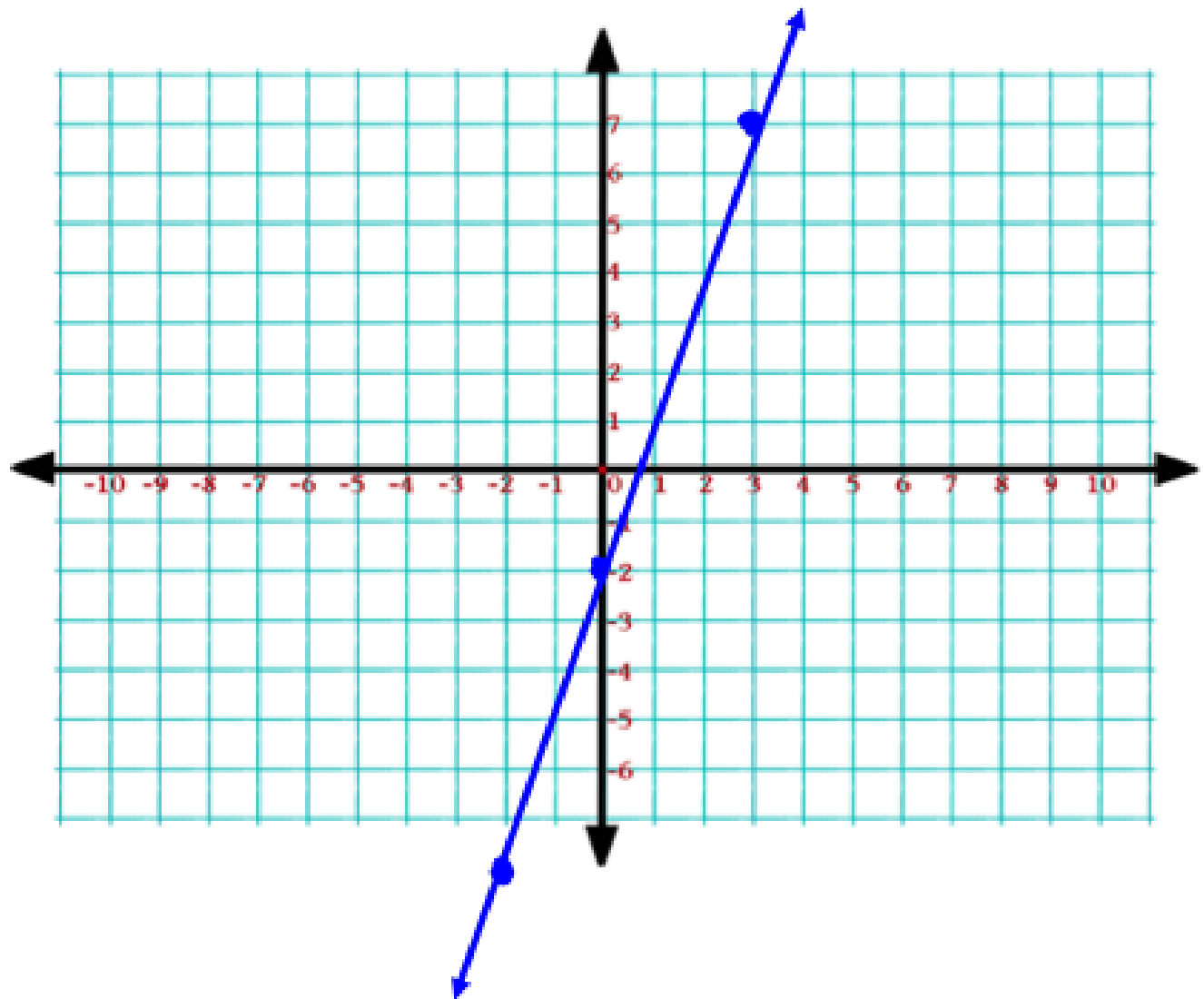
Graph the linear equation.

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

$$-2 \quad -2$$

$$y = 3x - 2$$

x	y
-2	-8
0	-2
3	7

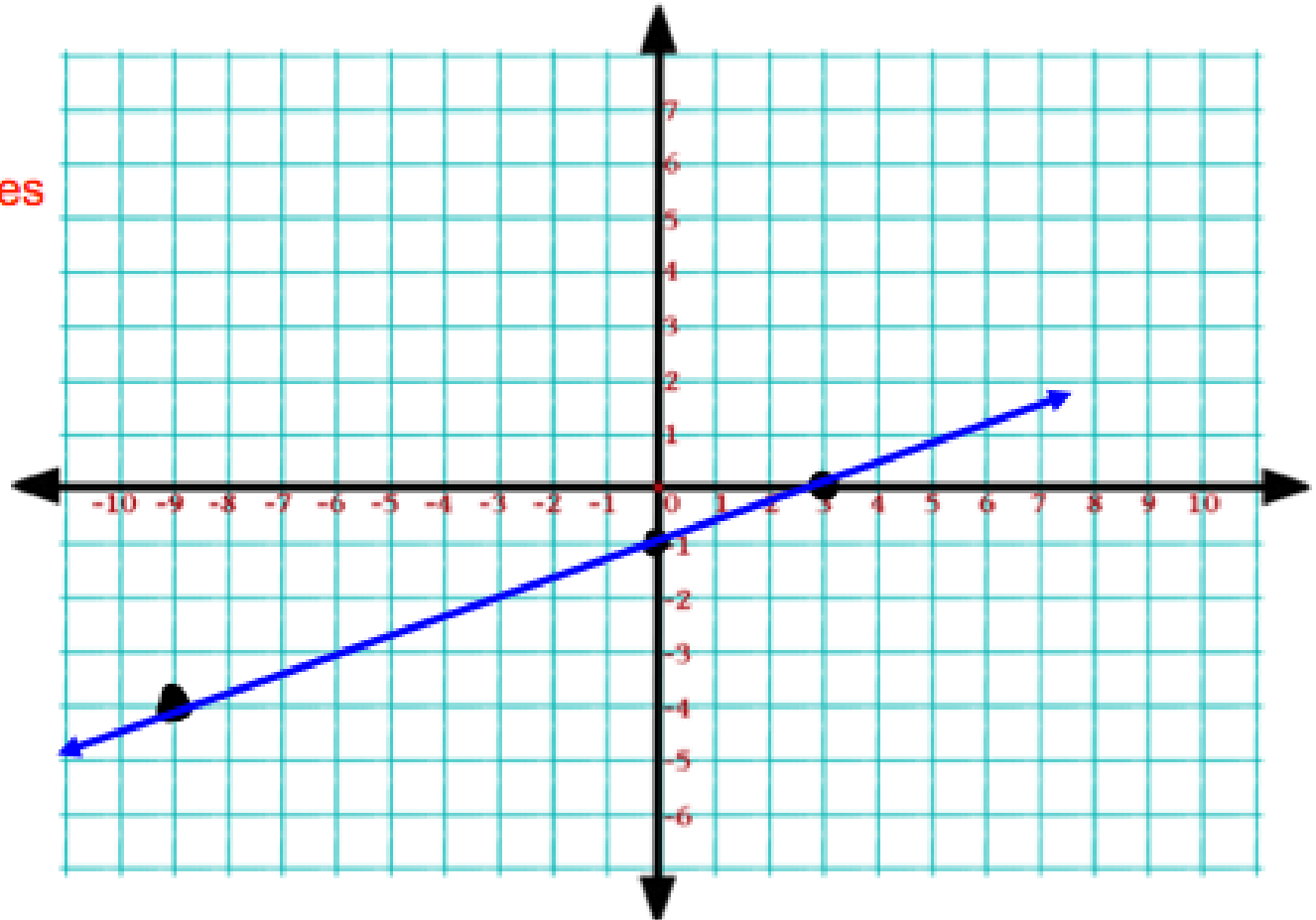


Graph the linear equation.

$$2) y = \frac{1}{3}x - 1$$

Hint: choose easy to use x-values

x	y
3	0
0	-1
-9	-4



## Equations for **Vertical** and **Horizontal** Lines

**Vertical Lines** are  $x = \text{a number}$ . Ex.  $x = -4$

**Horizontal Lines** are  $y = \text{a number}$ . Ex.  $y = 5$

