

Algebra 1 3.2

Solve linear equations by graphing

Estimate solutions to a linear equation by graphing

Equations with no solution :O

✗ linear function

parent function

family of graphs

→ solution (root) of an equation } x -int.

→ zero of a function

activ: whiteboards

Quiz tomorrow 3.1-3.2

$$17. \quad 10x = -5y$$

$$\rightarrow (0, 0)$$

$$10x = -5 \cdot 0$$

$$10x = 0$$

$$x = 0$$

$$\rightarrow (0, 0)$$

$$10 \cdot 0 = -5y$$

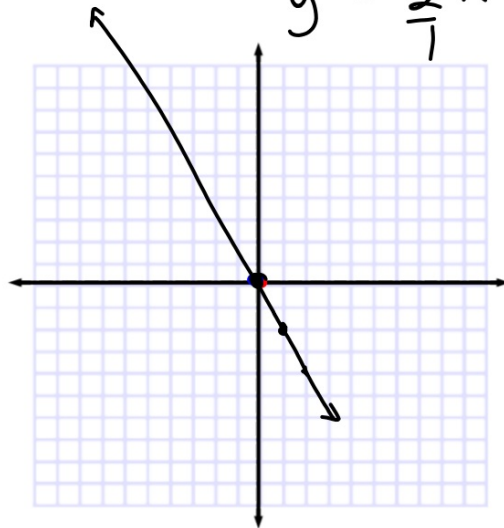
$$0 = -5y$$

$$\frac{0}{-5}$$

$$\frac{0}{-5}$$

$$\frac{-5y}{-5} = \frac{10x}{-5}$$

$$y = -2x + 0$$



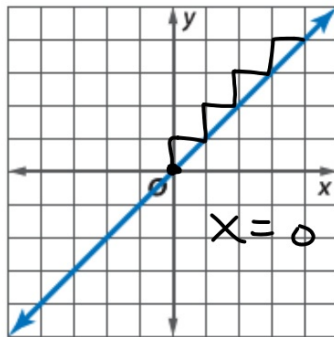
KeyConcept Linear Function

Parent function: $f(x) = 1x + 0$

Type of graph: line

Domain: all real numbers

Range: all real numbers



Whiteboards

Solve each equation by graphing. Verify your answer algebraically.

1. $-2x + 6 = 0$

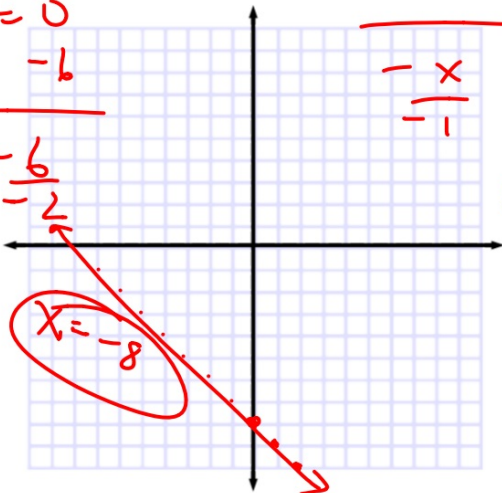
$$y = -\frac{2}{1}x + 6$$

$$\begin{array}{r} -2x + 6 = 0 \\ -6 \quad -6 \\ \hline \end{array}$$

$$\begin{array}{r} -2x = -6 \\ -2 \quad -2 \\ \hline \end{array}$$

$$x = 3$$

$$x = -8$$



2. $-x - 3 = 5$

$$\begin{array}{r} -x - 3 = 5 \\ -5 \quad -5 \\ \hline -x - 8 = 0 \\ +8 \quad +8 \\ \hline \end{array}$$

$$\begin{array}{r} -x = 8 \\ -1 \quad -1 \\ \hline \end{array}$$

$$x = -8$$

$$y = -1x - 8$$

* Graph the related function

1) $= 0$

2) $y =$

3) graph

4) ans.

3. $4x - 2 = 0$

4. $9x + 3 = 0$

Example 2 Solve an Equation with No Solution

Solve each equation.

a. $3x + 7 = 3x + 1$

$\begin{array}{r} -3x \quad -3x \\ \hline \end{array}$

$7 = 1$

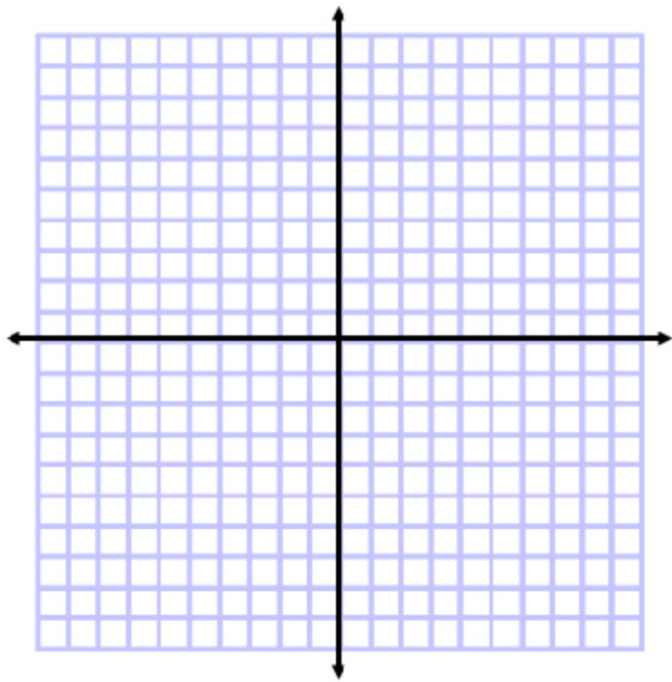
no sol.

Solve by graphing.

Where do they meet?

Solve by algebra.

What does it mean?



5. $2x - 5 = 2x + 8$

$-2x \quad -2x$

$$-5 = 8$$

N.S.

6. $4x + 11 = 4x - 24$

$-4x \quad -4x$

$$11 = -24$$

N.S.

$$7. 3x - 5 = 3x - 10$$

$$8. -6x + 3 = -6x + 5$$

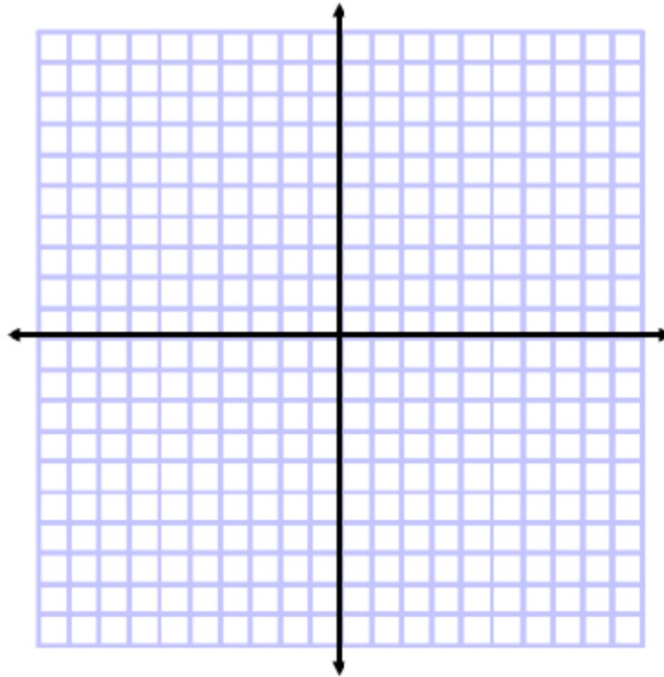
$$\begin{array}{r} 3x + 5 = 3x + 5 \\ -3x \quad -3x \\ \hline \end{array}$$

$$T \rightarrow 5 = 5$$

all numbers

b. $2x - 4 = 2x - 6$

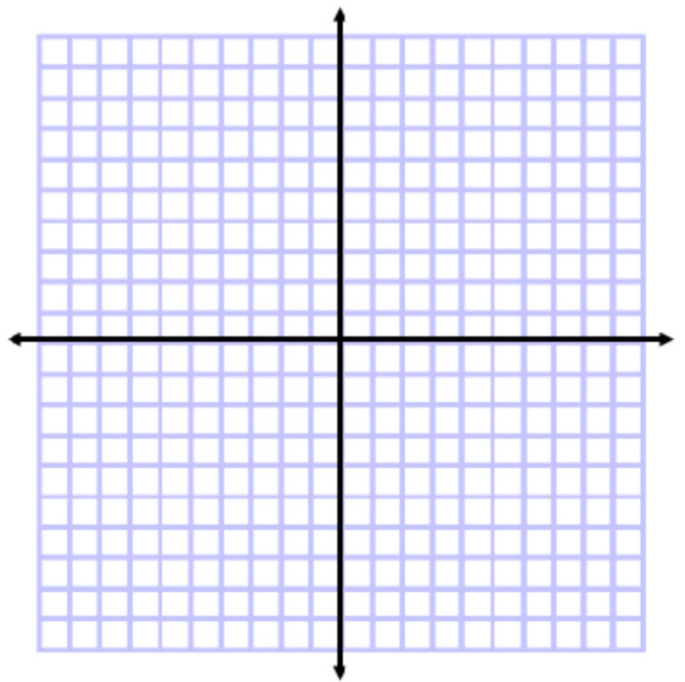
Method 2 Solve by graphing.



GuidedPractice

2A. $4x + 3 = 4x - 5$

2B. $2 - 3x = 6 - 3x$



9. **NEWSPAPERS** The function $w = 30 - \frac{3}{4}n$ represents the weight w in pounds of the papers in Tyrone's newspaper delivery bag after he delivers n newspapers. Find the zero and explain what it means in the context of this situation.

$$\textcircled{w} = 30 - \frac{3}{4}n$$

\uparrow weight lbs
 \uparrow no. of newspapers

$$\begin{array}{r}
 0 = 30 - \frac{3}{4}n \\
 -30 \quad -30 \\
 \hline
 -\frac{4}{3} \cdot -30 = -\frac{3}{4}n \cdot -\frac{4}{3} \\
 120 = 12n \\
 \frac{120}{12} = \frac{12n}{12} \\
 40 = n
 \end{array}$$

