

Algebra 1 3.2

Solve linear equations by graphing**

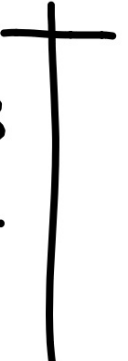
Estimate solutions to a linear equation by graphing

linear function

parent function

family of graphs

x-intercept → solve

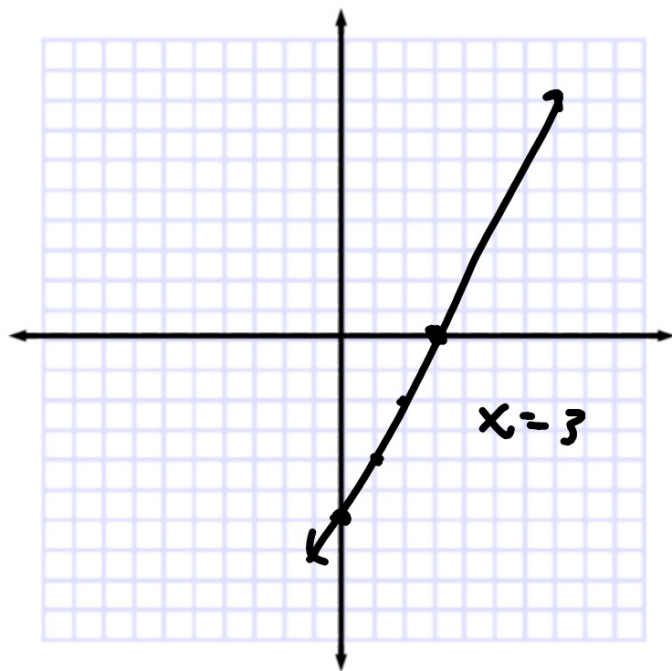
graph: T.O.V. 
 $y = mx + B$
x + y int.

** First graph, then answer a follow-up questions

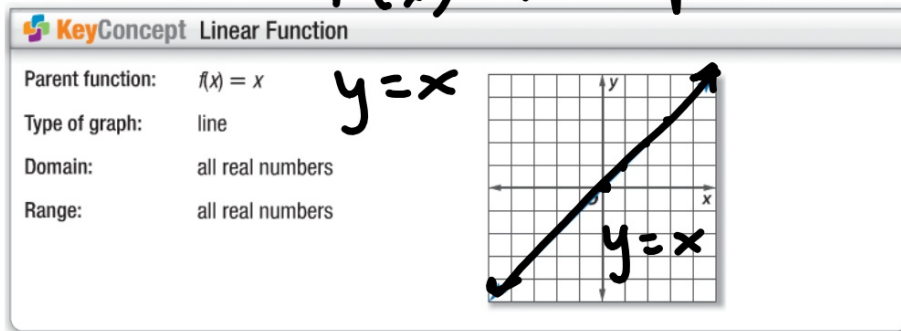
Graphing practice

$$y = 2x + -6$$

$\uparrow$ $\uparrow$
 m b
2
-



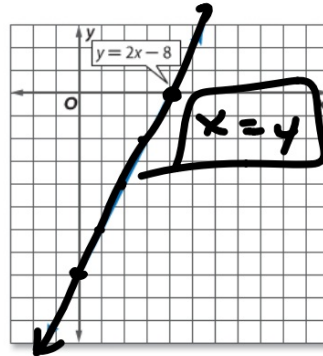
$f(x) = x$ parent graph



$$y = \frac{1}{1}x + 0$$

Linear Equation	Related Function
$2x - 8 = 0$	$f(x) = 2x - 8$ or $y = 2x - 8$

$$\begin{array}{r}
 2x - 8 = 0 \\
 +8 \quad +8 \\
 \hline
 2x = 8 \\
 \frac{2x}{2} = \frac{8}{2} \\
 x = 4
 \end{array}
 \quad
 \begin{array}{l}
 m = \frac{2}{1} \\
 y =
 \end{array}$$



$x=4$ 1. graph related function
(may need to rearrange first)
TOV or x&y intercepts

-
- 2. solution is x-intercept
- ...OR...

3. Solve the equation using algebra
(depends on directions)

b. $3x + 1 = -2$

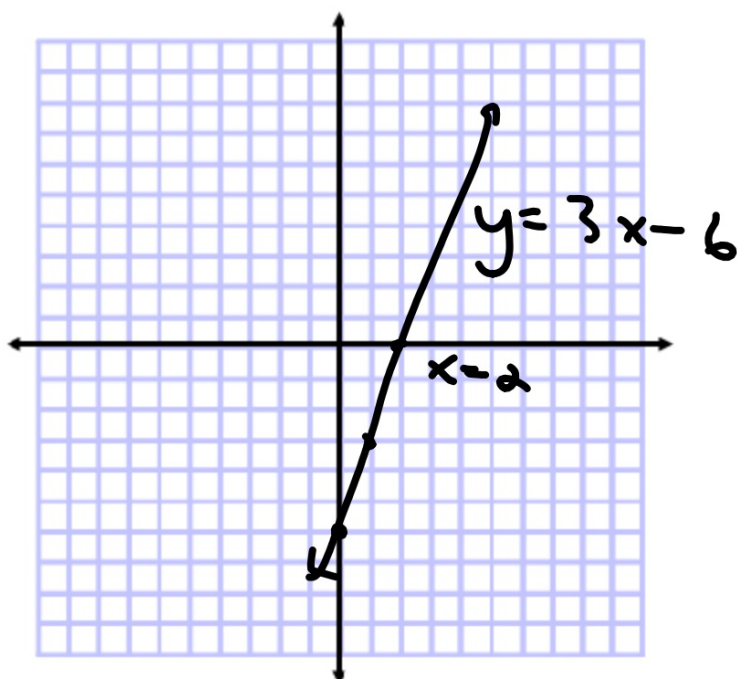
Method 2 Solve by graphing.

Solve by graphing:

1. graph related function
2. solution is x-intercept

$$0 = 3x - 6$$

$$y = 3x - 6$$



$= 0$

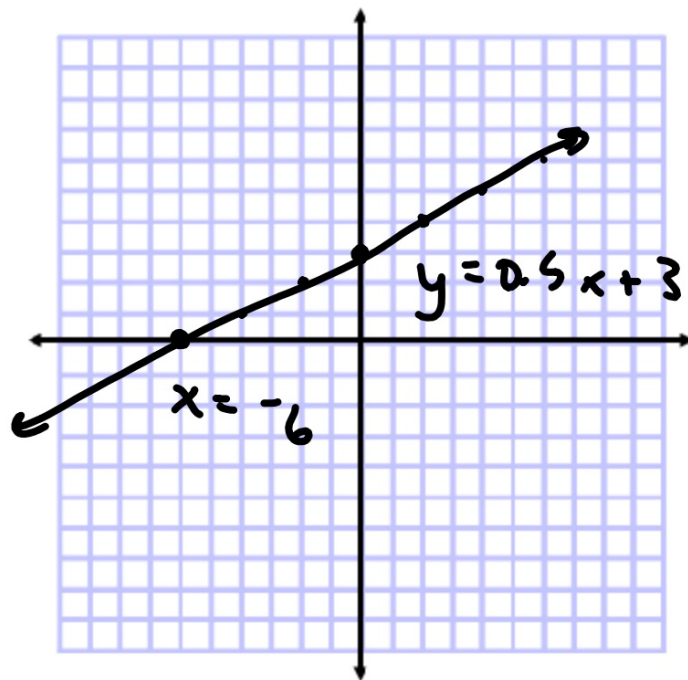
$y =$

$$0.5x + 3 = y$$

$$0.5x + 3 = 0$$

$$y = 0.5x + 3$$

$$\frac{1}{2} \quad \frac{-1}{-2}$$



$$= 0$$

$$y =$$

$$7 = 7$$

Example 2 Solve an Equation with No Solution

Solve each equation.

a. $\frac{3x+7}{-3x} = \frac{3x+1}{-3x}$

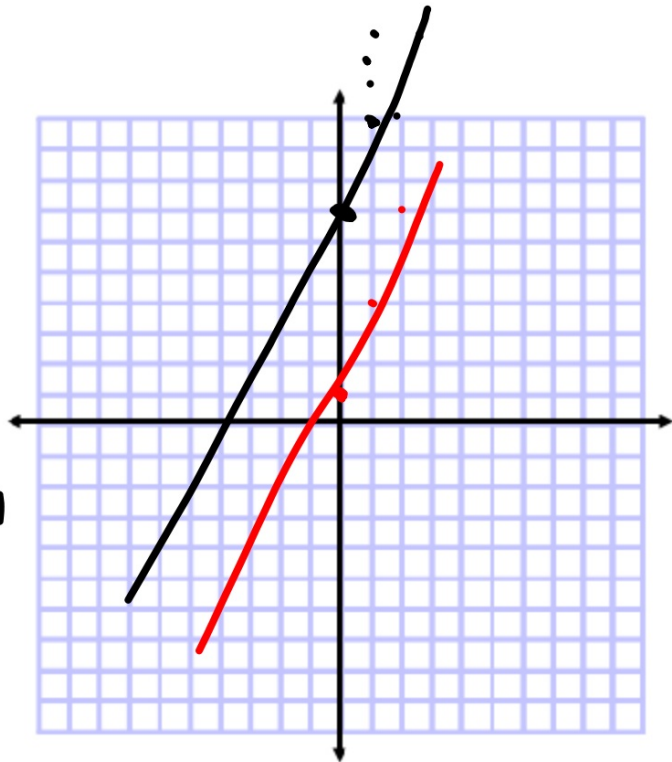
$$= 0$$

$$y =$$

$$??$$

$7 = 1$ False
no sol.

$$y = 3x + 7 \quad y = 3x + 1$$



Solve using algebra
Solve by graphing

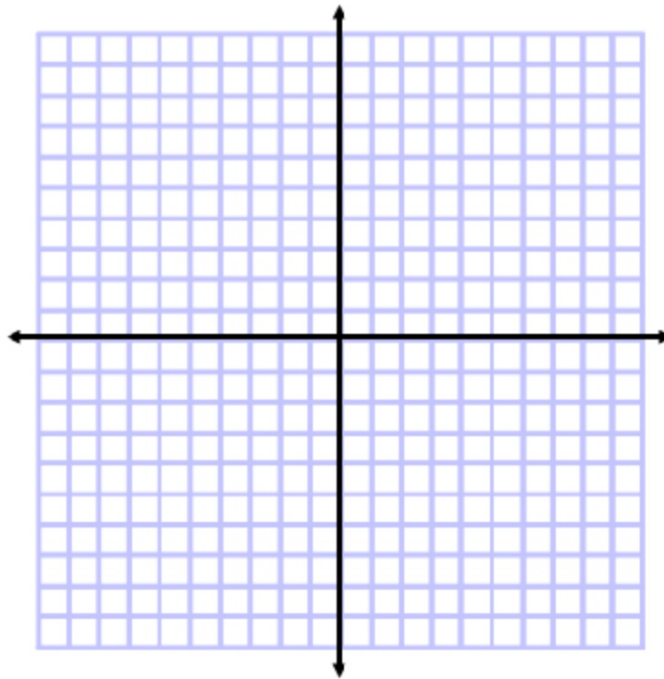
Same answer!

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

~~-2x~~ ~~-2x~~
Method 2

Solve by graphing.

$$\begin{array}{r} -4 = -6 \\ +6 \quad +6 \\ \hline 2 = 0 \\ NS \end{array}$$



$=0$
 $y=$
 $??$

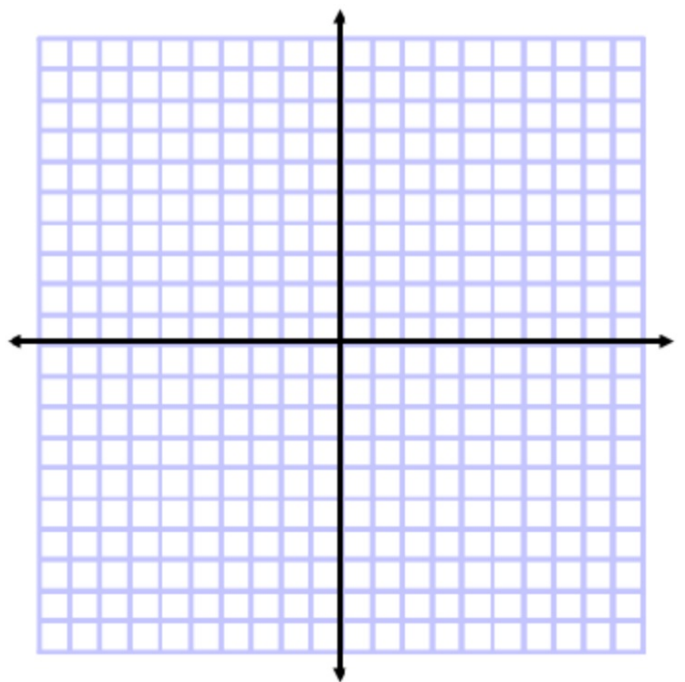
Guided Practice

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

NS

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

NS



Why don't these systems have a solution?

What's the code?

q. 16k

11-35 odd

(turn in Wed. if possible)

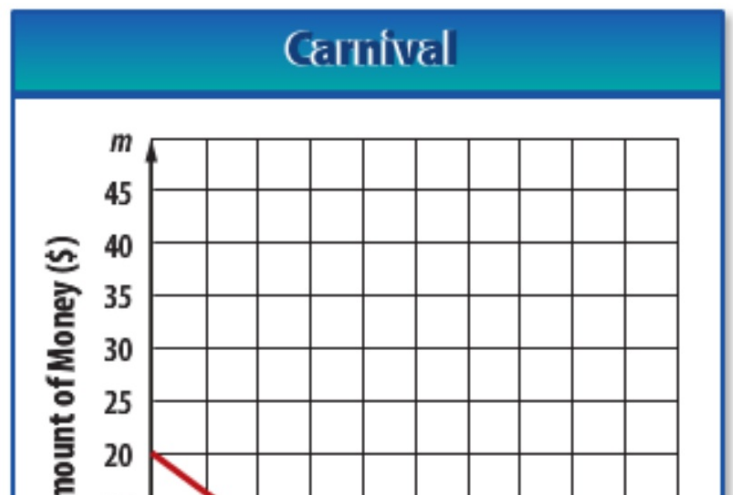
"Solve" x-intercept

"Zero" x-intercept (because $y=0$ there)

Find the zero means
what is the x-intercept? (where $y = 0$)

Real-World Example 3 Estimate by Graphing

CARNIVAL RIDES Emily is going to a local carnival. The function $m = 20 - 0.75r$ represents the amount of money m she has left after r rides. Find the zero of this function. Describe what this value means in this context.



Guided Practice

3. **FINANCIAL LITERACY** Antoine's class is selling candy to raise money for a class trip. They paid \$45 for the candy, and they are selling each candy bar for \$1.50. The function $y = 1.50x - 45$ represents their profit y when they sell x candy bars. Find the zero and describe what it means in the context of this situation.

Where is y-coord = 0?