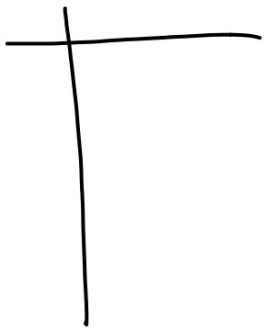
Algebra 1 3.2

→ Solve linear equations by graphing**

Estimate solutions to a linear equation by graphing

T. O. V.



(,0) (0,)

x + y int.

Slope-intercept

$y = mx + B$

linear function
parent function
family of graphs
x-intercept

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

Graphing practice

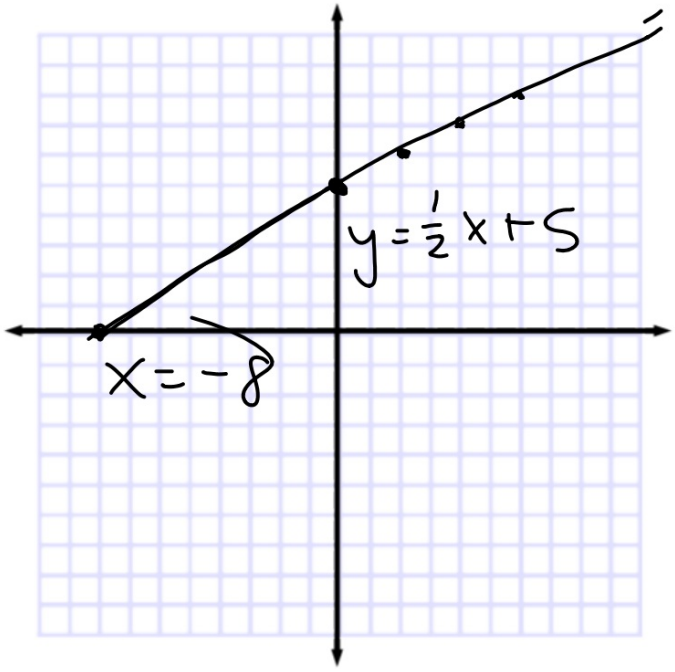
x-int.

options:
TOV
x-int & y-int
y=mx+b

$y = \frac{1}{2}x + 5$

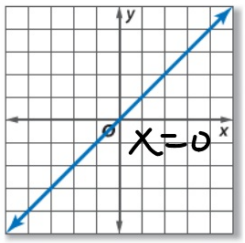
rate of change

start



KeyConcept Linear Function

Parent function:	$f(x) = x$
Type of graph:	line
Domain:	all real numbers
Range:	all real numbers



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

formal ↑ Casual ↑

$2x - 8 = 0$
$+8 \quad +8$

$\frac{2x}{2} = \frac{8}{2}$

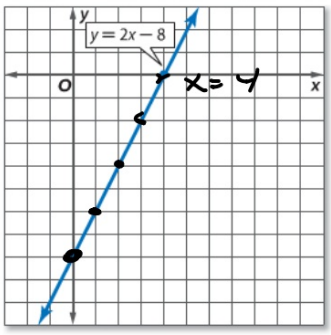
$x = 4$

$f(x) = 2x - 8$

$y = 2x - 8$

$m \quad B$

$\frac{2}{1}$



Solve by graphing

Solve by graphing
Solve using algebra

What do you notice?

Solve by graphing:

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

$0 = 3x - 6$

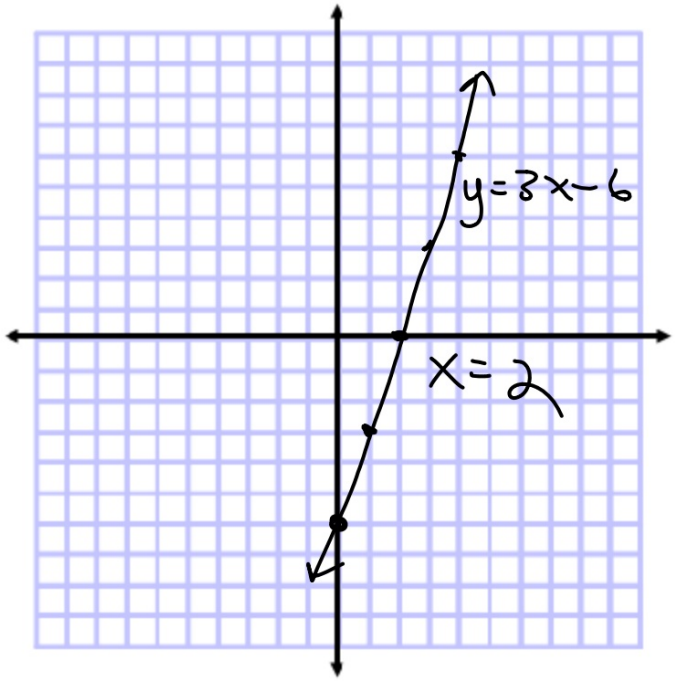
$y = 3x - 6$

$\frac{3}{1}$

$0 = 3x - 6$

$+6 \qquad +6$

$\frac{6}{3} = \frac{3x}{3}$



=0

y=

$0.5x + 3 = 0$

$-3 \quad -3$

$0.5x = -3$

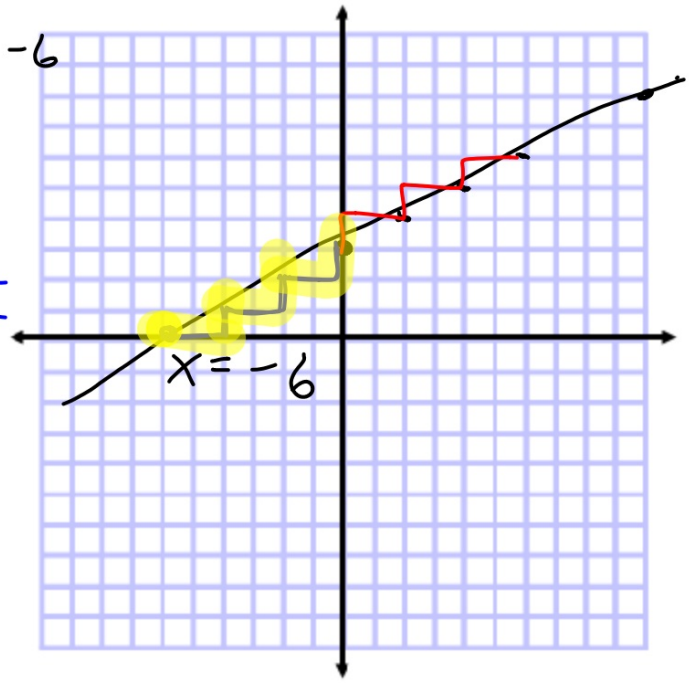
$0.5x + 3 = y$

$x = -6$

$y = 0.5x + 3$

$\uparrow$

$\frac{1}{2} \quad \frac{5}{10}$



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

=0

y=

Example 2 Solve an Equation with No Solution

Solve each equation.

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

$-3x \quad -3x$

$7 = 1$

no sol.

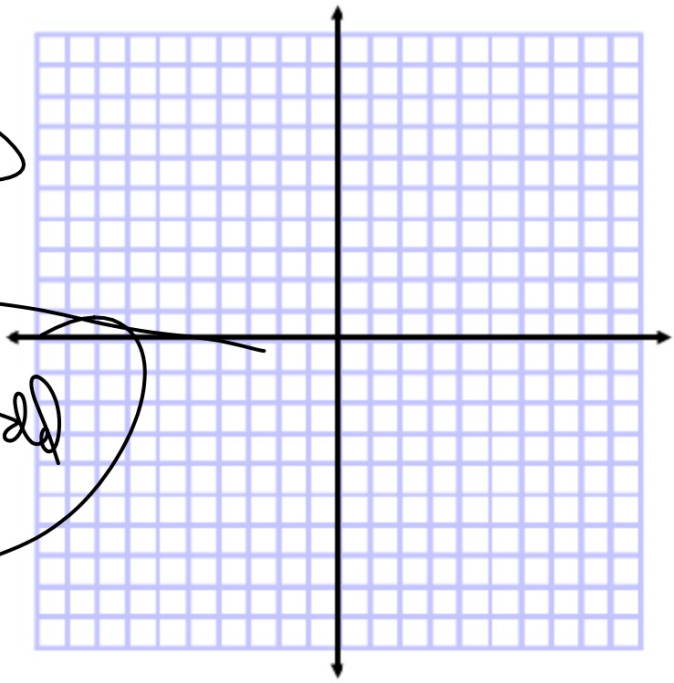
$=0$

$y=$

??

11-33 odd

p. 166

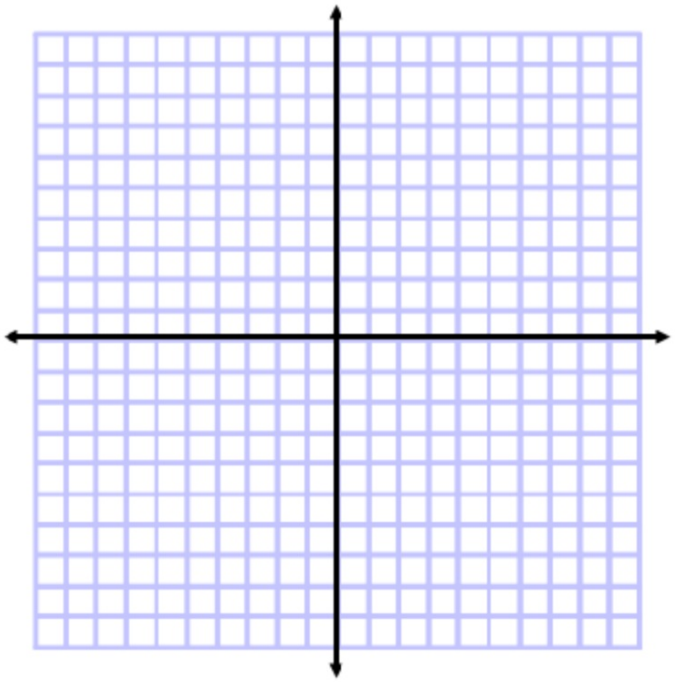


Solve using algebra
Solve by graphing

Same answer!

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

Method 2 Solve by graphing.



=0

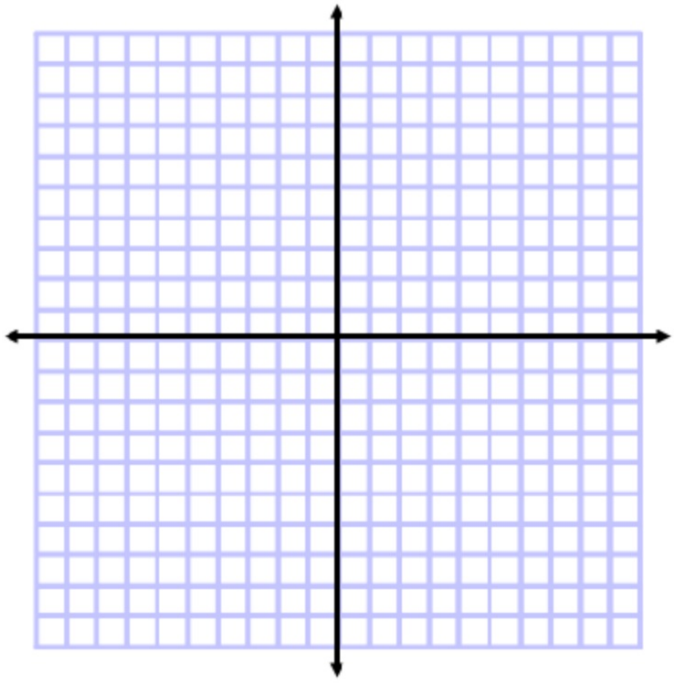
y=

??

GuidedPractice

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

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



Why don't these systems have a solution?

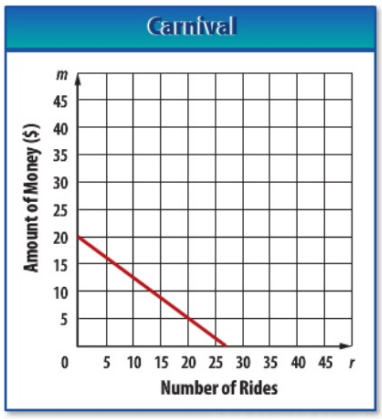
What's the code?

"Solve"	x-intercept
"Zero"	y-intercept

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.



GuidedPractice

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?