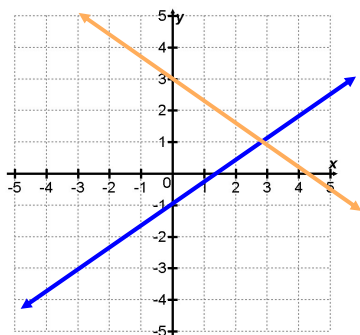


3.1 Solving Systems of Linear Equations by Graphing



Objective: to find the solution (intersection point) by graphing two lines.

Aug 3-9:44 PM

Solve by Graphing

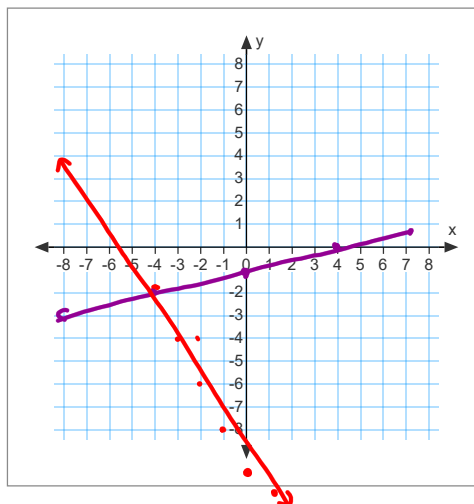
1) $4y = x - 4$ $\frac{4y}{4} = \frac{x-4}{4} \rightarrow y = \frac{1}{4}x - 1$
 $2x + y = -10$ $y = -2x - 10$
 Step 1: $-2x$ $-2x$

Use $y = mx + b$ form to graph.

Step 2: Graph the lines.

Step 3: The point where the lines intersect is the solution.

$(-4, -2)$



Jul 23-4:29 PM

3.1 Graphing Systems of Linear Equations 2023.notebook

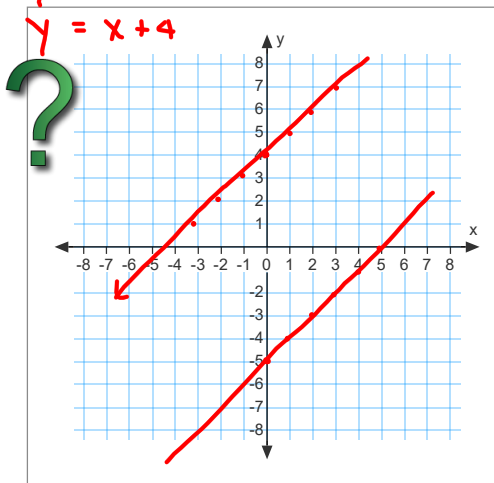
2) Solve by graphing.

$$\begin{aligned}x - y &= 5 & -y &= -x + 5 \\2x - 2y &= -8 & y &= x - 5 \\& & -2y &= -2x - 8 \\& & y &= x + 4\end{aligned}$$

What if the lines don't intersect

No Solution

Parallel - same slope
different y-int



Jul 23-4:29 PM

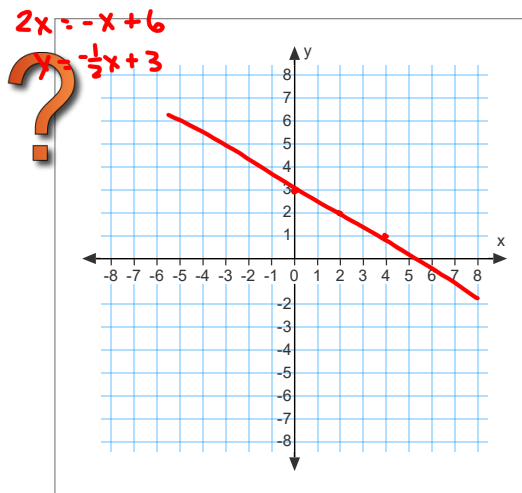
3) Solve by graphing.

$$\begin{aligned}2x + 4y &= 12 & 4y &= -2x + 12 \\x + 2y &= 6 & y &= -\frac{1}{2}x + 3\end{aligned}$$

What if it's the same line

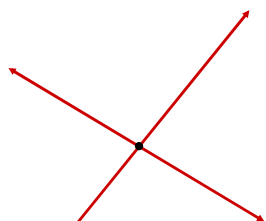
∞ solutions

Same slope
same y-int

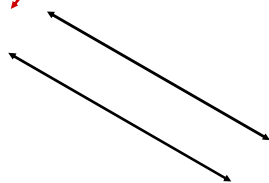


Jul 23-4:29 PM

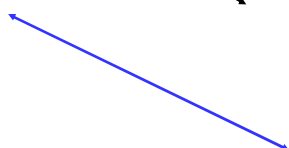
Summary



One solution at
 (x,y)



Parallel Lines
No solutions



Same Line
Infinite solutions

Jul 23-4:29 PM

IN CLASS PRACTICE

to check your understanding



Go to the google classroom. Be sure to show all work on graph paper. Match your answer to the answer given. Then slide the box to check your graph.

Jul 23-4:29 PM

3.1 Graphing Systems of Linear Equations 2023.notebook



Sep 3-5:42 PM

Using your graphing calculator,
solve the following.

4) Ralph's Rentables rents moving trucks for \$40 a day plus \$0.35 per mile driven. Mel's Movers rents trucks for \$36 a day plus \$0.45 per mile driven.

- When is the total cost for a day's rental the same for both companies?
- When is it better to rent from Ralph?

Jul 23-4:29 PM

Solve using your calculator.

In what week will the height of the bamboo be the same as the height of the corn? How tall will they be?

Weeks of Growth	Height of Bamboo in feet	Height of Corn in feet
1	1.5	3
2	2	3.5
3	2.5	4
4	4	4.5
5	6	4.5
6	6.5	5
7	6.5	5.5
8	9	6

Sep 26-6:21 AM

3.1 Graphing Systems of Linear Equations 2023.notebook



Sep 6-4:14 PM