Math Virtual Learning

Algebra 1 S1

Graphing system of linear equations that are parallel

April 27, 2020

Algebra I S1

Lesson: [April 27, 2020]

Objective/Learning Target:

Students will be able to graph a system of parallel lines

BELL RINGER
SOLUTION

$$x + y = 56$$

$$y = 7x + 8$$

Solution (6, 50)

GRAPHING PARALLEL LINES

Video 1

Video 2

A **system of equations** is a set of two or more equations that contain two or more variables.

A **solution of a system of equations** is a set of values that are solutions of all of the equations. If the system has two variables, the solutions can be written as ordered pairs. Each system has:

a) "1" solution

b) "infinitely many" solutions

c) "no solutions"

Steps

1. Write each equations in y = mx + b form.
2. Graph each line.
3. Determine the number of solutions.

PRACTICE-1

Graph the system and determine the solutions

1) $y = \frac{5}{4}x - 2$

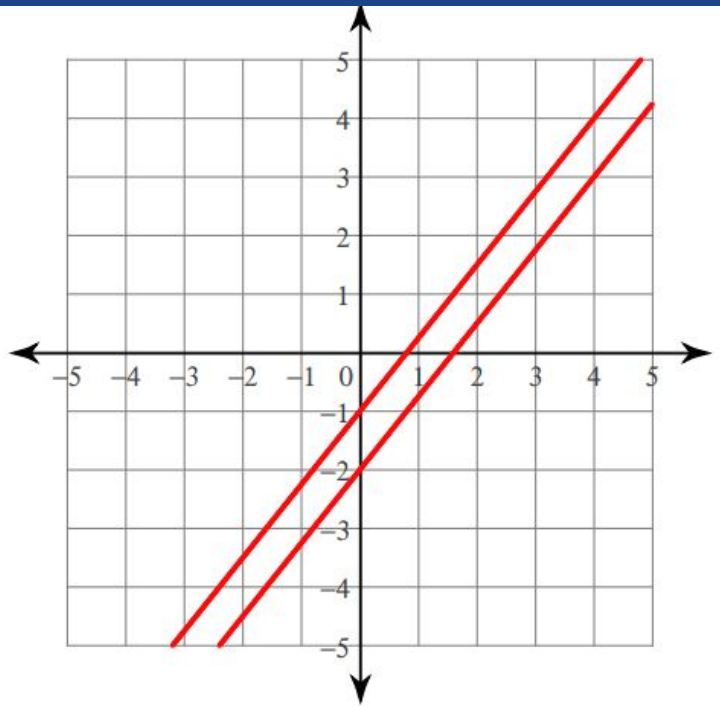
$y = \frac{5}{4}x - 1$

What do you notice about the slopes?

PRACTICE
#1 SOLUTION

1) $y = \frac{5}{4}x - 2$

$y = \frac{5}{4}x - 1$



No solution

PRACTICE #2

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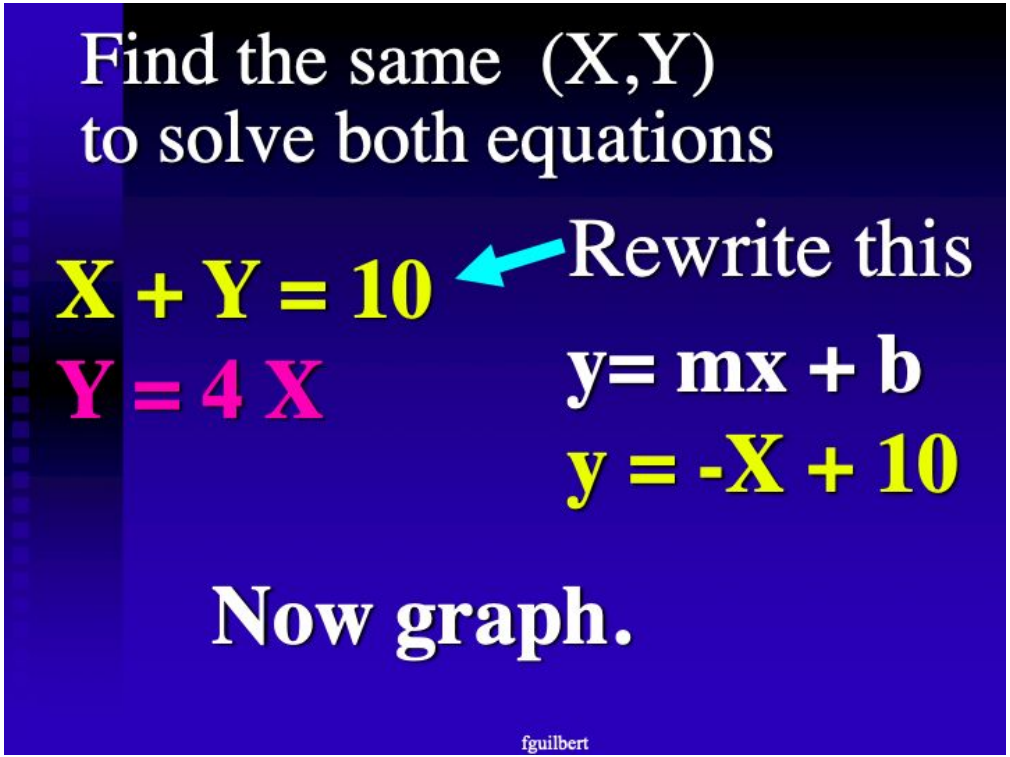
Find the same (X,Y)
to solve both equations
X + Y = 10
Y = 4 X
Rewrite this
y= mx + b
y = -X + 10
Now graph.
fguilbert

PRACTICE # 2 - Solution

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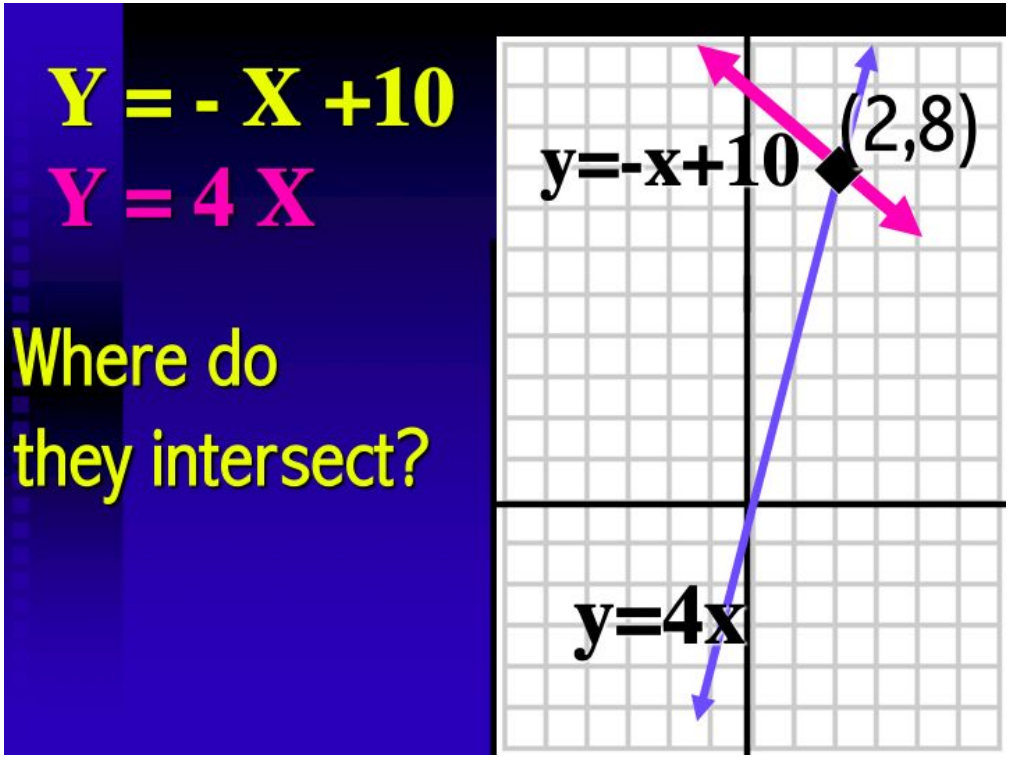

PRACTICE #3

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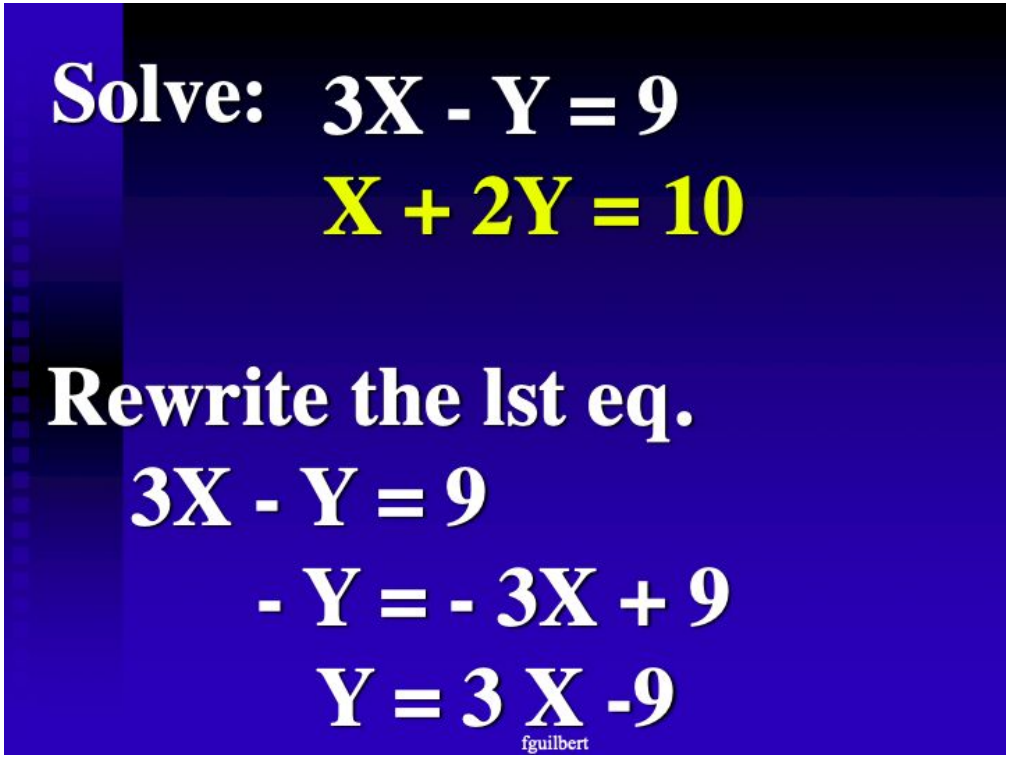
Solve:

$$3X - Y = 9$$

$$X + 2Y = 10$$

PRACTICE #3 - Solution



PRACTICE #3 - Solution

$$3X - Y = 9$$

$$X + 2Y = 10$$

Rewrite the 2nd eq.

$$X + 2Y = 10$$

$$2Y = -X + 10$$

$$Y = -1/2\,X + 5$$

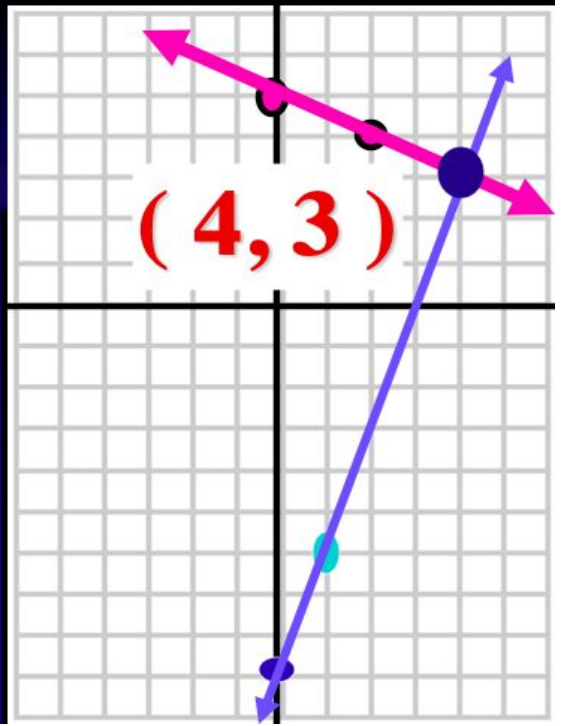
fguilbert

PRACTICE #3 - Solution

$Y = 3X - 9$

$Y = -1/2X + 5$

What point is a solution to both equations?



PRACTICE

Solve each system of equations and determine the solutions.

5. $y = 5x + 10$
$y = -7 + 5x$

6. $y = 2x + 5$
$y = 3x + 2$

7. $6x - y = -15$
$2x + 3y = 5$

PRACTICE #5, 6 and 7 - Solutions

Solve each system of equations.

5. $y = 5x + 10$
$y = -7 + 5x$

no solution

6. $y = 2x + 5$
$y = 3x + 2$

$(3, 11)$

7. $6x - y = -15$
$2x + 3y = 5$

$(-2,3)$