

## What's Going On?

**Checking In**

**Minds on**

What's the Solution?

**Action!**

What's the Solution II?

**Consolidation**

How many solutions?  
A "Good" Solution!!!!

**Learning Goal - I will be able to solve linear systems graphically.**

## Checking In

F.F.M.



Solve for d.

$$\begin{aligned}
 -6d + 3 &= 3(3 - 6d) \\
 -6d + 3 &= 9 - 18d \\
 +18d & \quad +18d \\
 12d + 3 &= 9 \\
 +3 & \quad -3 \\
 \frac{12d}{12} &= \frac{6}{12} \\
 d &= \frac{1}{2}
 \end{aligned}$$

**Minds on**

What's the Solution?

$$x + y = 3$$

$$2x - y = 0$$

Is the solution: ~~(0, 3)~~, (1, 2) or (2, 1)?

## Minds on

What's the Solution?

	L.S.	R.S.
	7	$2(-4) + 15$ $= -8 + 15$ $= 7$
	7	$-2(-4) - 1$ $= 8 - 1$ $= 7$

$$y = 2x + 15$$

$$y = -2x - 1$$

Is the solution:  $(-4, 7)$ ,  $(7, -4)$  or  $(-7, 1)$ ?

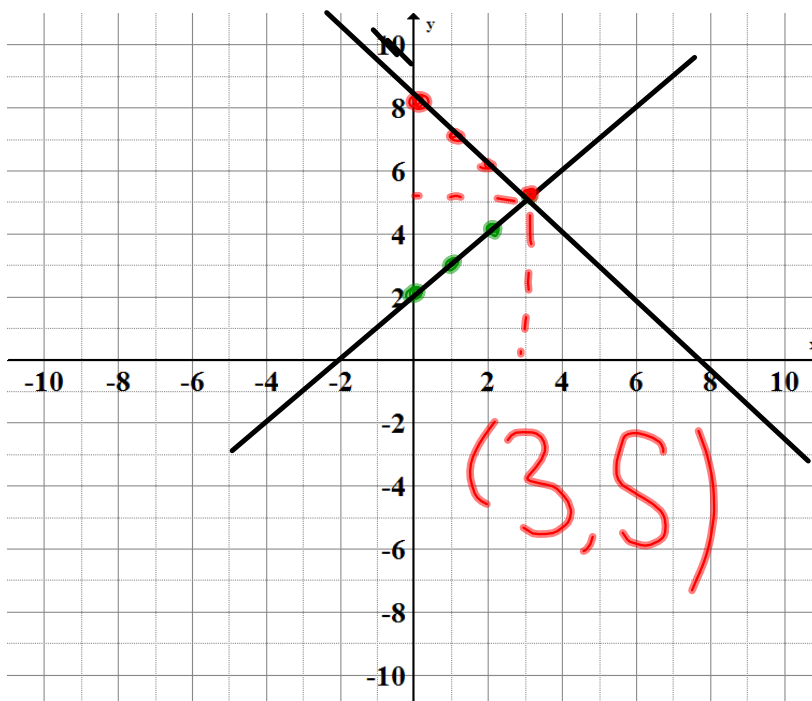
**Action!**

What's the Solution II?

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

$$y = 8 - x$$

$$y = \frac{-1}{1}x + 8$$

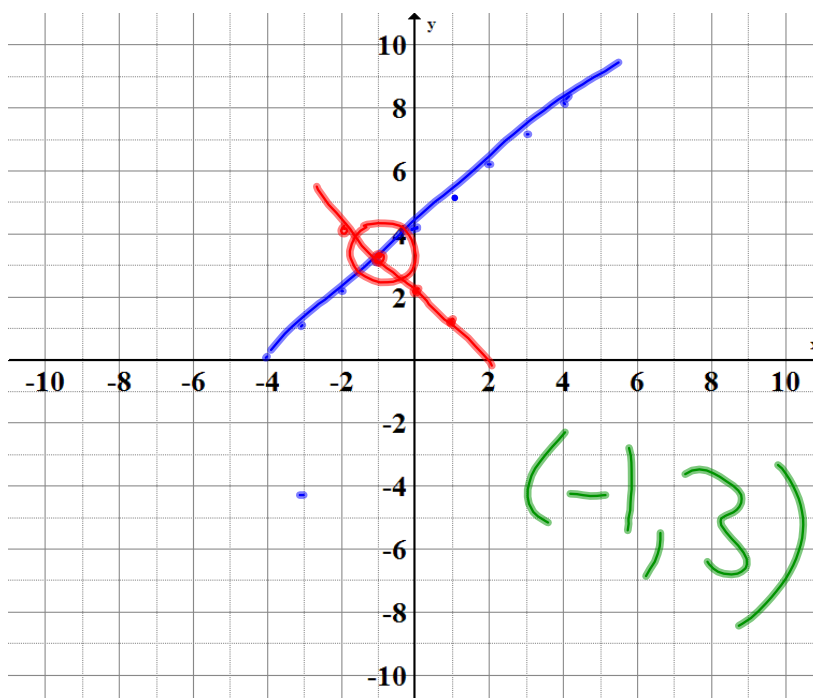


**Action!**

What's the Solution II?

$$y = x + 4$$

$$y = 2 - x$$



**Action!**

$$y = x + 4$$

$$y = 2 - x$$

$$(-1, 3)$$

Check!

$$\begin{array}{l} \text{L.S.} \quad \textcircled{1} \\ 3 \quad \checkmark \end{array} \quad \begin{array}{l} \text{R.S.} \\ -1 + 4 \\ = 3 \end{array}$$

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$$\begin{array}{l} \text{L.S.} \quad \textcircled{2} \\ 3 \quad \checkmark \end{array} \quad \begin{array}{l} \text{R.S.} \\ 2 - (-1) \\ = 3 \end{array}$$

**Action!**

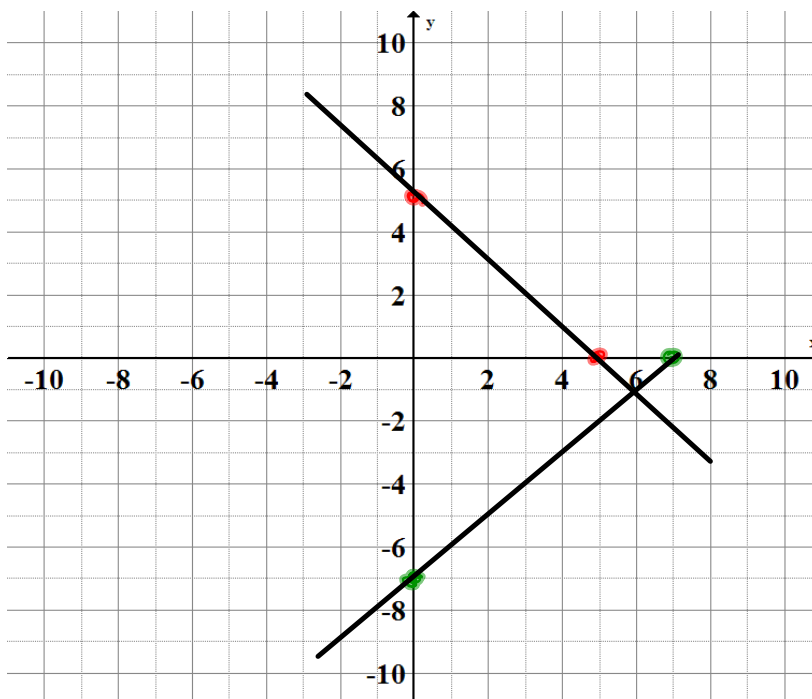
What's the Solution II?

$$x + y = 5$$

$$x - y = 7$$

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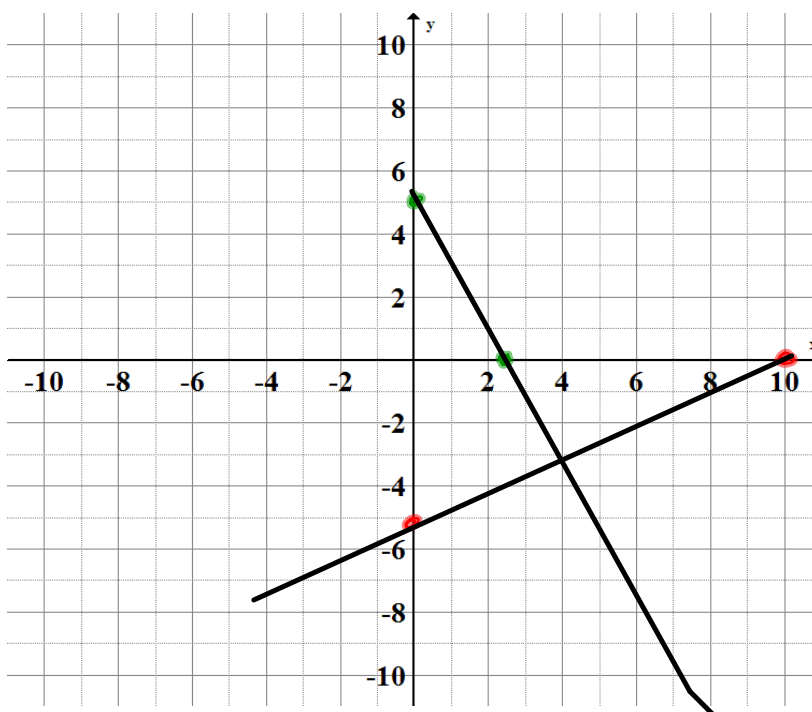


**Action!**

What's the Solution II?

$$2x + y = 5$$

$$x - 2y = 10$$

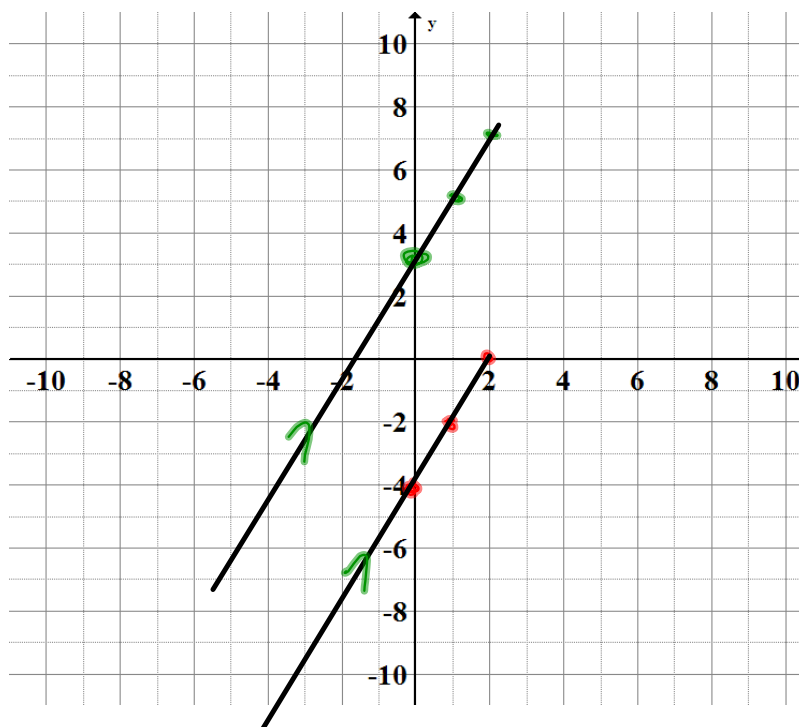


**Consolidation**

# How many solutions?

$$y = 2x + 3$$

$$y = 2x - 4$$

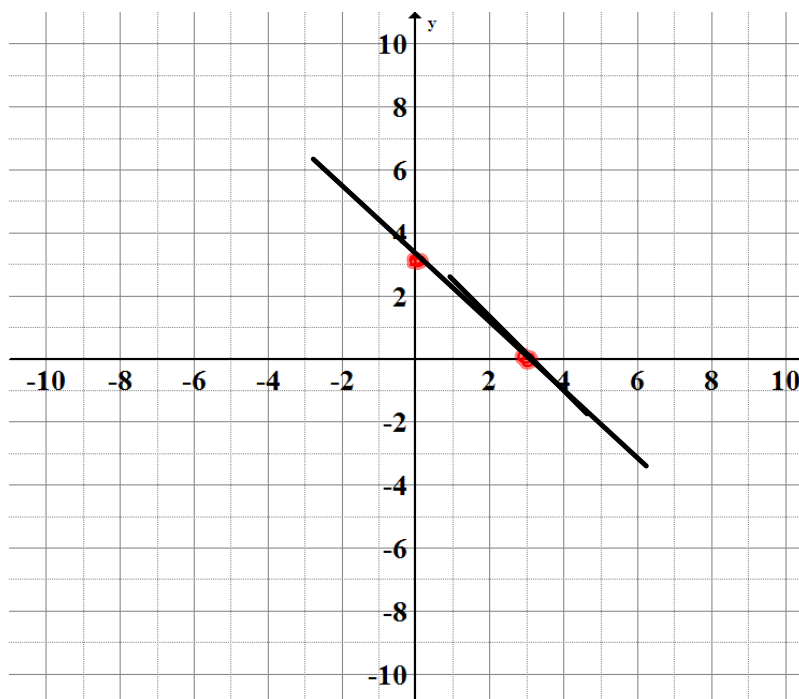


**Consolidation**

How many solutions?

$$x + y = 3$$

$$2x + 2y = 6$$



**Consolidation**

# How many solutions?

$$y = 3x + 1$$

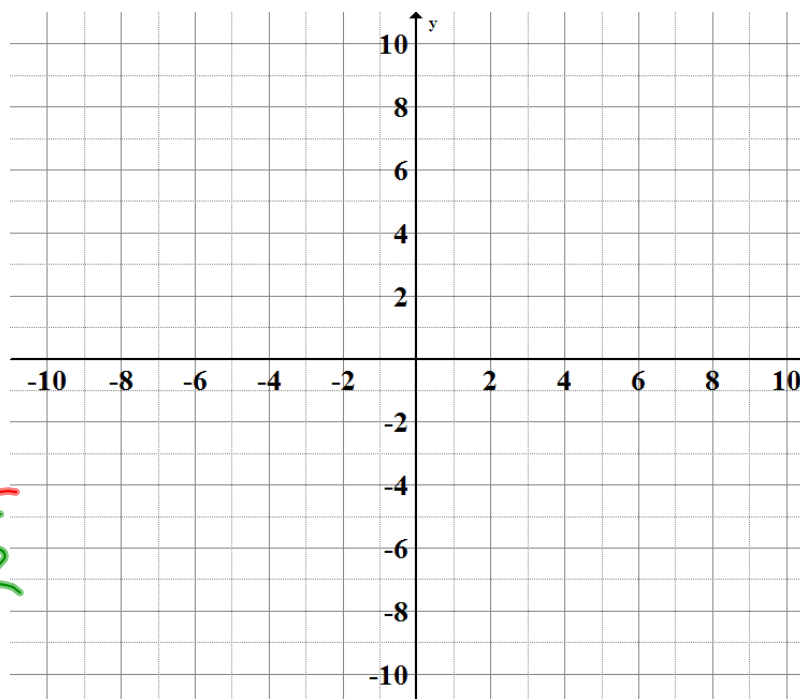
$$6x - 2y = -2$$

$$-6x$$

$$-6x$$

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

$$y = 3x + 1$$



## Consolidation

# How many solutions?

The graphs of two linear equations (in two variables) may intersect at

one point - non-parallel

no points - parallel and "distinct"

an infinite number of points - coincide