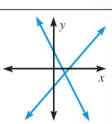
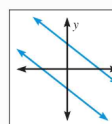
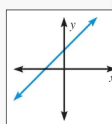
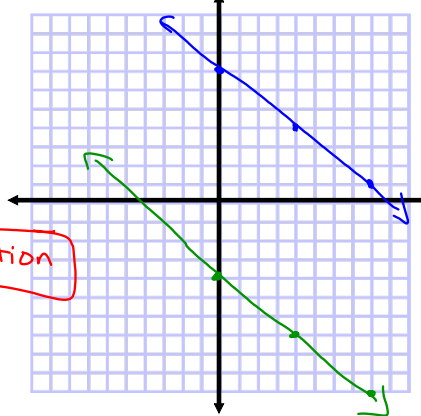


6.5 Special Types of Linear Systems

| CONCEPT SUMMARY | | |
|---|--|---|
| NUMBER OF SOLUTIONS OF A LINEAR SYSTEM | | |
|  <p>Lines intersect one solution this solution is an ordered pair (x, y)</p> |  <p>Lines are parallel no solution</p> |  <p>Lines coincide infinitely many solutions (the coordinates of every point on the line)</p> |
| Two lines that meet at ONE POINT | Two lines that NEVER CROSS | Two lines that are the SAME LINE |

Oct 14-1:42 PM

Example 1:
 $y = -\frac{3}{4}x + 7$
 $y = -\frac{3}{4}x - 4$



no solution

Oct 22-4:31 PM

Example 2:

$$2y = \frac{4x + 8}{2}$$

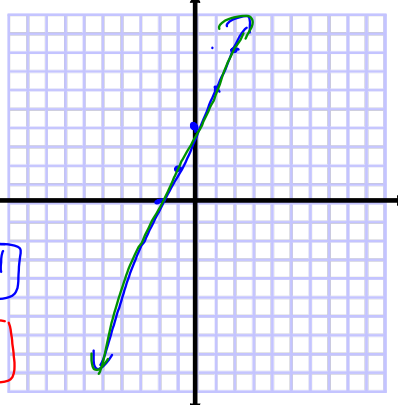
$$y = 2x + 4$$

$$y - 2x = 4$$

$$+2x \quad +2x$$

$$y = 2x + 4$$

infinite



Oct 23-10:16 AM

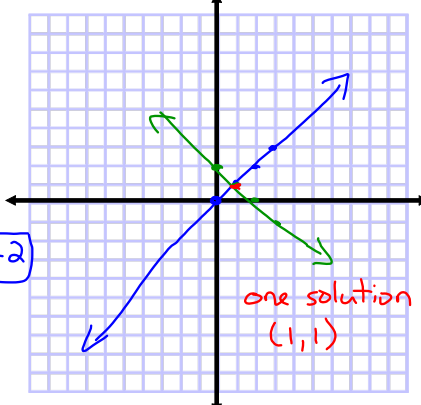
Example 3:
 $y = \frac{1}{2}x + 0$

$$x + y = 2$$

$$-x \quad -x$$

$$y = -x + 2$$

one solution
(1, 1)



Oct 23-10:21 AM

Solve by Substitution.

$$5 = \frac{1}{4}x + 3y$$

$$x = 20 - 12y$$

$$5 = \frac{1}{4}(20 - 12y) + 3y$$

$$5 = 5 - 3y + 3y$$

$$5 = 5$$

infinite

Oct 22-1:00 PM

$$y = -4x - 2$$

$$16x + 4y = 8$$

$$16x + 4(-4x - 2) = 8$$

$$16x - 16x - 8 = 8$$

$$-8 = 8$$

no solution

Oct 22-4:30 PM

Solve by Elimination.

$$\begin{aligned} 2y - 3x &= 10 \rightarrow 2y - 3x = 10 \\ -(2y - 3x) &= -2 \rightarrow -2y + 3x = -2 \\ \hline &0 = 8 \end{aligned}$$

$0 = 8$

no solution

Oct 26-5:59 PM

$$\begin{aligned} 2(4x - 7y) &= 15 \rightarrow 8x - 14y = 30 \\ -8x + 14y &= -30 \rightarrow \frac{+8x + 14y}{-} = -30 \\ \hline &0 = 0 \end{aligned}$$

$0 = 0$

infinite

Oct 16-7:13 AM

Solve any way.

$$\begin{aligned} 5(3x - 2y) &= -5 \rightarrow 15x - 10y = -25 \\ 2(4x + 5y) &= 47 \rightarrow 8x + 10y = 94 \\ \hline &23x = 69 \\ &23x = 69 \\ &23 \cancel{} & \cancel{23} & \\ \hline &x = 3 \end{aligned}$$

$$\begin{aligned} 4(3) + 5y &= 47 \\ 12 + 5y &= 47 \\ -12 & -12 \\ \hline 5y &= 35 \\ y &= 7 \end{aligned}$$

$(3, 7)$

Mar 10-11:34 AM

Without solving, tell whether the linear system has one solution, no solution, or infinite solution.

$$\begin{aligned} 5x + y &= -2 \rightarrow y = -5x - 2 \\ -10x - 2y &= 4 \\ \hline \frac{-2y}{-2} &= \frac{10x + 4}{-2} \\ y &= -5x - 2 \end{aligned}$$

$y = -5x - 2$

infinite

Mar 10-11:39 AM

Classwork: p.407 #4 - 28 even
#8, 10, 12 on back of graphs

Final Five

Without graphing, tell whether the system has one solution, infinitely many solutions, or no solution.

$$y = x - 4$$

$$y = x - 3$$

Oct 21-1:14 PM