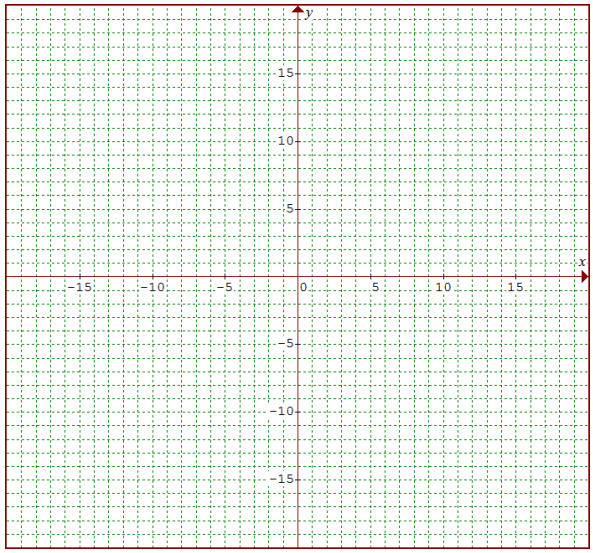
Alg 1 Week 15 Block Warm Up

Skill 6 and Skill 9: Graph the following three equations on the same graph. Let each line = 2 units.

$a.\quad y=\frac{2}{3}x+2 \qquad b.\quad y=\frac{4}{5}x \qquad c.\quad y=10$



Now use your graph to answer the following questions:

Where do the lines intersect?

Which line is in the "middle" when x is 10?

Which line is on the "top" when x is 20?

Skill 7: Write the equation of the line that passes through the given points in slope intercept form.

(5,4) and (1,-2)

Skill 8. Write the equation of a line that passes through (8,-1) and is perpendicular to $y=\frac{4}{3}x-1$

6-3 Solving Systems by Elimination

1. Solving a System by Multiplying One Equation

$3x - 5y = 11$
$x + y = 5$

1. eliminate x and solve

2. eliminate y and solve

2. What is the solution of the system?

$-2x + 15y = -32$
$7x - 5y = 17$

Got It:

$3x - 2y = 8$
$2x - 2y = 5$

3. Solving a System by Multiplying One Equation

The theater club sells a total of 101 tickets to its first play. A student ticket costs $1. An adult ticket costs $2.50. Total ticket sales are $164. How many student tickets were sold?

Problem 4 Write a system to model the following situation:

Your school's talent show will feature 12 solo acts and 2 ensemble acts. The show will last 90 min. The 6 solo performers judged best will give a repeat performance at a second 60-min show, which will also feature the 2 ensemble acts. Each solo act lasts *x* minutes, and each ensemble act lasts *y* minutes.

notes

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6.3 A More Elimination

When using the elimination method, there are times when you are able to just add the two equations together or multiply one equation by a number to eliminate a variable. Other times, you must multiply both equations by different numbers to eliminate a variable. Today we will learn how to do that.

Example : Solve $\begin{aligned} 2x-7y&=3 \\ 5x-4y&=-6 \end{aligned}$

To eliminate x, multiply the top equation by 5 and the bottom equation by _____

$5(2x-7y=3)$
_____ $(5x-4y=-6)$ This gives us the equations: $10x-35y=15$

Now add the two equations to solve for y. + $10x-35y=15$

$y =$

Substitute the in for y in either of the two original equations.

$x =$

The solution is ( ).

check your answer in BOTH equations

notes: Elimination practice.

a. $8x + 3y = 4$
$-7x + 5y = -34$

b. $8x + 3y = -7$
$7x + 2y = -3$

check your answer in both equations!

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6.3 A More Elimination

When using the elimination method, there are times when you are able to just add the two equations together or multiply one equation by a number to eliminate a variable. Other times, you must multiply both equations by different numbers to eliminate a variable. Today we will learn how to do that.

Example : Solve $\begin{aligned} 2x-7y&=3 \\ 5x-4y&=-6 \end{aligned}$

To eliminate *x,* multiply the top equation by 5 and the bottom equation by -2

$\begin{aligned} &5(2x-7y=3) \\ &-2(5x-4y=-6) \end{aligned}$ This gives us the equations: $\begin{aligned} 10x-35y&=15 \\ -10x+8y&=12 \end{aligned}$

Now add the two equations to solve for y. $+$ $\begin{aligned} 10x-35y&=15 \\ -10x+8y&=12 \\ \hline -27y&=27 \end{aligned}$

$$y=-1$$

Substitute the -1 in for y in either of the two original equations.

$$\begin{aligned} 2x-7y&=3 \\ 2x-7(-1)&=3 \\ 2x+7&=3 \\ 2x&=-4 \\ x&=-2 \end{aligned}$$

The solution is (-2,-1).

Now it's your turn. Solve the following equations. **Check your solution**.

1. $\begin{aligned} 7x-5y&=11 \\ -4x-2y&=-16 \end{aligned}$ Check:

2. $4x - 2y = -18$
$-5x + 3y = 23$

Check:

3. $3x + 7y = 10$
$5x + 2y = 7$

Check:

4. $-2x + 5y = -23$
$3x - 4y = 24$

Check:

Multiply one equation to eliminate a variable. Check your answer in both equations.

5. $5x + 6y = -8$
   $2x + 3y = -5$

6. $6x - 2y = 10$
   $3x - 7y = -19$