

Name

Goal Solve Linear Systems

Alg I.

by Graphing

I can graph and solve systems of linear equations.

System of Linear Equations: aka linear system; 2 or more linear equations with the same variables

$$\begin{aligned}x + 2y &= 7 \\ 3x - 2y &= 5\end{aligned}$$

Semester Exam

Solution of a System of linear equations: An ordered pair that works for both equations

Consistent Independent System: A system with exactly 1 solution

Steps to Solve a Linear System

- 1) Graph both equations using $y = mx + b$
- 2) Estimate point of intersection
- 3) Check the coordinates in each equation

Example 1/2:

$$\begin{aligned}1) \quad & \begin{array}{r} * -5x + y = 0 \\ +5x \quad +5x \\ \hline y = 5x \\ m = \frac{5}{1} \quad b = (0,0) \end{array}\end{aligned}$$

$$\begin{aligned}-5(1) + 5 &= 0 \\ -5 + 5 &= 0 \\ 0 &= 0 \checkmark\end{aligned}$$

$$\begin{aligned}* \quad & \begin{array}{r} 5x + y = 10 \\ -5x \quad -5x \\ \hline y = -5x + 10 \\ m = -\frac{5}{1} \quad b = (0,10) \end{array}\end{aligned}$$

$$\begin{aligned}5(1) + (5) &= 10 \\ 5 + 5 &= 10 \\ 10 &= 10 \checkmark\end{aligned}$$

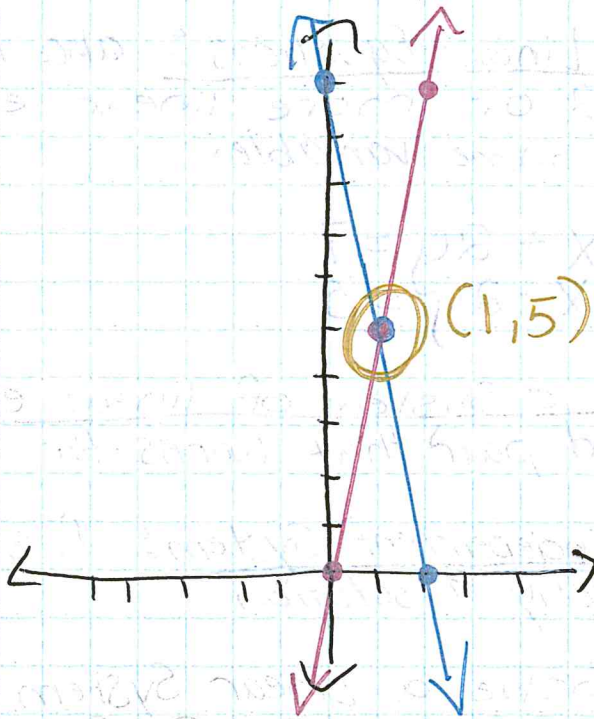
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$$2) \quad \begin{array}{r} -x + 2y = 3 \\ +x \quad \quad +x \\ \hline 2y = 1x + 3 \\ \frac{2y}{2} = \frac{1x}{2} + \frac{3}{2} \\ y = \frac{1}{2}x + \frac{3}{2} \end{array}$$

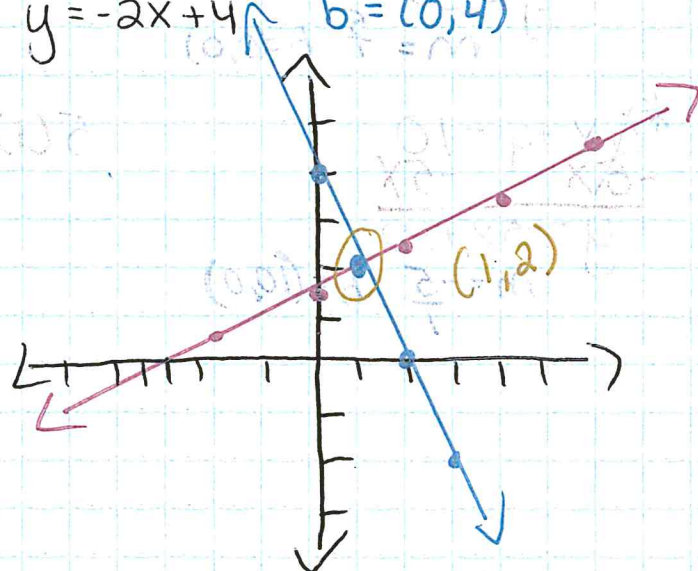
$$m = \frac{1}{2} \\ b = (0, \frac{3}{2})$$

$$\begin{array}{r} -1 + 2(2) = 3 \\ -1 + 4 = 3 \\ 3 = 3 \checkmark \end{array}$$

$$\begin{array}{r} 2x + y = 4 \\ -2x \quad \quad -2x \\ \hline y = -2x + 4 \end{array}$$

$$m = -\frac{2}{1} \\ b = (0, 4)$$

$$\begin{array}{r} 2(1) + 2 = 4 \\ 2 + 2 = 4 \\ 4 = 4 \checkmark \end{array}$$



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$$\begin{array}{r} 3) \quad x - y = 5 \\ \hline x - y = 5 \\ -1x \quad -1x \\ \hline y = -1x + 5 \\ y = x - 5 \end{array}$$

$$m = \frac{1}{1} \\ b = (0, -5)$$

$$\begin{array}{l} 2 - -3 = 5 \\ 2 + 3 = 5 \\ 5 = 5 \checkmark \end{array}$$

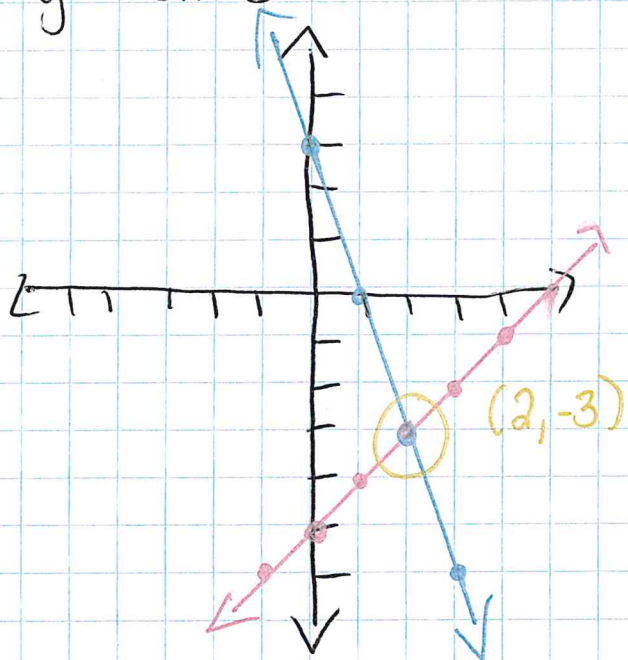
Semester Exam

$$\begin{array}{r} 3x + y = 3 \\ \hline 3x + y = 3 \\ -3x \quad -3x \\ \hline y = -3x + 3 \end{array}$$

$$m = \frac{-3}{1} \\ b = (0, 3)$$

$$\begin{array}{l} 3(2) + -3 = 3 \\ 6 - 3 = 3 \\ 3 = 3 \checkmark \end{array}$$

$$y = -3x + 3$$



* Complete Skills Practice, pg. 373, #

$\frac{1}{2} \frac{d}{dt} (v^2) = \mathbf{v} \cdot \frac{d\mathbf{v}}{dt}$
 $\frac{1}{2} \frac{d}{dt} (v^2) = \mathbf{v} \cdot \mathbf{a}$

work
 $\int \mathbf{F} \cdot d\mathbf{r}$

$\mathbf{v} = \frac{d\mathbf{r}}{dt}$
 $\frac{d\mathbf{v}}{dt} = \mathbf{a}$

$\frac{d}{dt} \left(\frac{1}{2} m v^2 \right) = \mathbf{F} \cdot \mathbf{v}$
 $\frac{d}{dt} \left(\frac{1}{2} m v^2 \right) = \frac{d}{dt} (W)$

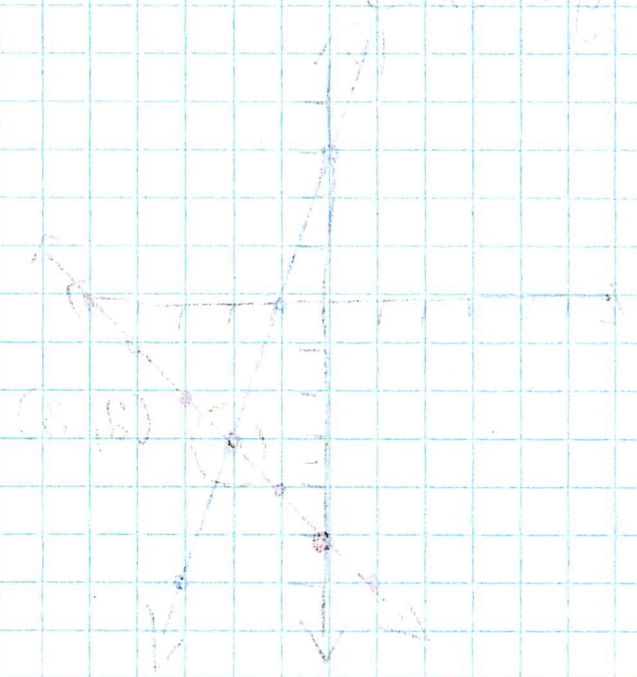
power
 $\frac{dW}{dt} = \mathbf{F} \cdot \mathbf{v}$

$\mathbf{v} = \frac{d\mathbf{r}}{dt}$
 $\frac{d\mathbf{v}}{dt} = \mathbf{a}$

$\mathbf{v} = \frac{d\mathbf{r}}{dt}$
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$\frac{d}{dt} \left(\frac{1}{2} m v^2 \right) = \mathbf{F} \cdot \mathbf{v}$
 $\frac{d}{dt} \left(\frac{1}{2} m v^2 \right) = \frac{d}{dt} (W)$

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