

Lesson 93 Objective: SWBAT solve a system of equations using elimination.

Kickoff

-On the post it name ONE person you would like to be partnered with **make this a well thought out person who you can ask questions to and not just your friends please :)**

-Complete question 7 from your homework packet!

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7)

$$(x-2)^2 + (y+2)^2 = 4$$

$$y-x = -2$$

$$y = x-2$$

$$(x-2)^2 + ((x-2)+2)^2 = 4$$

$$x^2 - 4x + 4 + x^2 = 4$$

$$2x^2 - 4x + 4 - 4 = 0$$

$$2x^2 - 4x = 0$$

$$2x(x-2) = 0$$

$(0, -2)$ $(2, 0)$

$$x = 0 \quad x = 2$$

$$y - x = -2 \quad y - 2 = -2$$

$$y = -2 \quad y = 0$$

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Homework

$$y = x^2 + 3$$

$$3x - y + 1 = 0$$

$$3x - (x^2 + 3) + 1 = 0$$

$$3x - x^2 - 3 + 1 = 0$$

$$-x^2 + 3x - 2 = 0$$

$$-1(x^2 - 3x + 2) = 0$$

$$(x-2)(x-1) = 0$$

$$x = 2 \quad x = 1$$

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Systems of Equations- Elimination

Steps to Solving a System by Elimination

- 1) Line up the like terms
- 2) Multiply (if necessary) to get a pair of like terms to have inverses
- 3) Add the equations together and eliminate one of the variables
- 4) Solve for the variable left
- 5) Substitute back in to find the missing variable.
- 6) Write solution as a POINT
- 7) Check

Example 1:

$$\begin{array}{r} 7x + 2y = 24 \\ 8x + 2y = 30 \end{array}$$

$(6, -9)$

$$\begin{array}{r} -1(7x + 2y = 24) \\ 8x + 2y = 30 \end{array}$$

$$\begin{array}{r} -7x - 2y = -24 \\ + 8x + 2y = 30 \end{array}$$

$$x = 6$$

$$\begin{array}{l} 8x + 2y = 30 \\ 8(6) + 2y = 30 \\ 48 + 2y = 30 \\ 2y = -18 \\ y = -9 \end{array}$$

Different Signs and Same Coefficient

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Example 2:

$(3, 9)$

$$y = 2x + 3$$

$$2x + 4y = 42$$

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

$$\begin{array}{r} -2x + y = 3 \\ 2x + 4y = 42 \end{array}$$

$$5y = 45$$

$$y = 9$$

$$y = 2x + 3$$

$$9 = 2x + 3$$

$$6 = 2x$$

$$3 = x$$

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