

Systems of Equations Review

What does it mean if a point is a solution to an equation?

Find solutions to the following equation:

$$y = 2x + 3$$

Determine if (5, 2) is a Solution or Not a Solution to the linear system.

$$x + y = 7$$

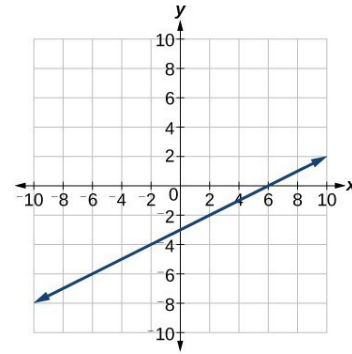
$$x - y = 3$$

Determine if (3, 7) is a Solution or Not a Solution to the linear system.

$$y = 2x + 1$$

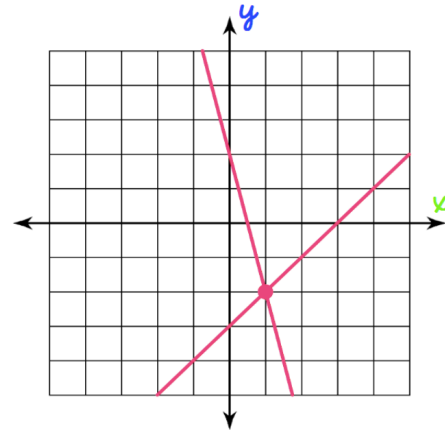
$$y = -4x + 7$$

Where are solutions to the equation of this line?

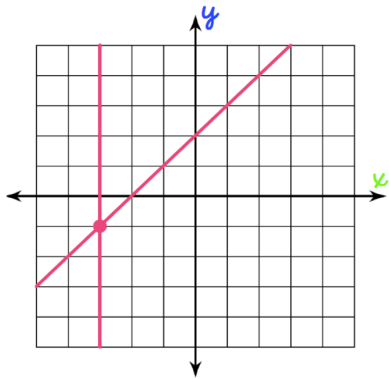


What is a system of equations?

How can we tell if two lines have a common solution?



What is the solution for this system?



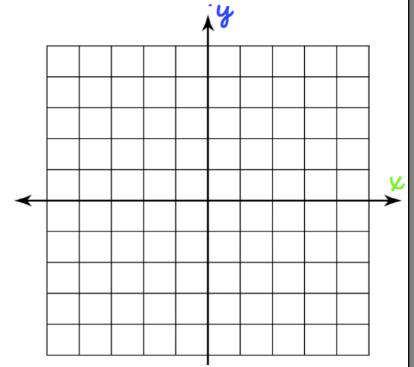
Solve the linear System by Graphing.

Equation One

$$y = -\frac{3}{4}x + 4$$

Equation Two

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



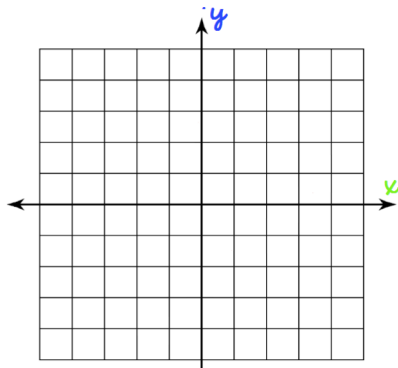
Solve the linear System by Graphing.

Equation One

$$y = 3x - 3$$

Equation Two

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



We can get more precise answers if we solve algebraically.

Solving by substitution.

(Remember we are looking for the point where the two equations have the same x and y values)

For our solution, the x and y values in one equation are the same as the x and y values in the second equation.

$$y = 5x + 4$$

$$y = -2x - 3$$

Solve by substitution

$$y = -2x - 4$$

$$y = 6x + 4$$

Solve by substitution

$$y = 3x + 7$$

$$5x - 2y = -10$$

Solve by combination

$$-5x + 10y = -20$$

$$5x - 8y = 18$$

Solve by combination

$$-3x + 2y = -22$$

$$-5x - 2y = -10$$

Solve by combination

$$5x + 8y = -24$$

$$5x + 5y = -30$$

When are there NO solutions to a system of equations?

How to write and solve a system

The class is selling food at the school fair. Pretzels cost \$1.50, and bottles of water cost \$1.00. The class sold a total of 107 items and collected \$128. How many pretzels and bottles of water did the class sell?

Determine the variables:

How to write a system

The class is selling food at the school fair. Pretzels cost \$1.50, and bottles of water cost \$1.00. The class sold a total of 107 items and collected \$128. How many pretzels and bottles of water did the class sell?

Write Let Statements:

Write the Equations

The class is selling food at the school fair. Pretzels cost \$1.50, and bottles of water cost \$1.00. The class sold a total of 107 items and collected \$128. How many pretzels and bottles of water did the class sell?

Each equation tells a different part of the story.

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Solve:

$$x + y = 107$$

$$1.5x + 1y = 128$$

Practice

The school that Stefan goes to is selling tickets to a choral performance. On the first day of ticket sales the school sold 3 senior citizen tickets and 1 child ticket for a total of \$38. The school took in \$52 on the second day by selling 3 senior citizen tickets and 2 child tickets. What is the price of a child ticket and what is the price of a senior citizen ticket?