

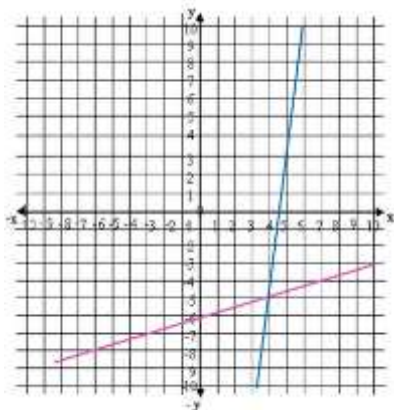
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SOLVING LINEAR SYSTEMS BY GRAPHING Guided Notes

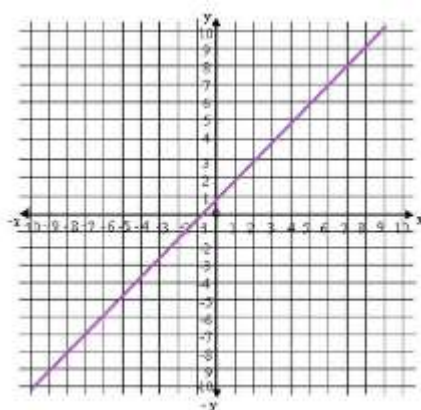
LINEAR SYSTEM OF EQUATIONS: is a set of equations with the same variables. When we are solving systems graphically, we have to find the intersection between the two lines.

For two variable systems, there are three possible types: Independent, inconsistent and dependent.

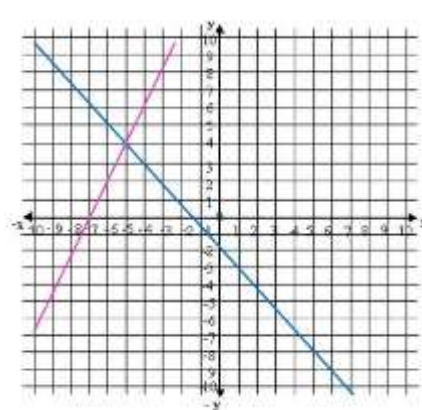
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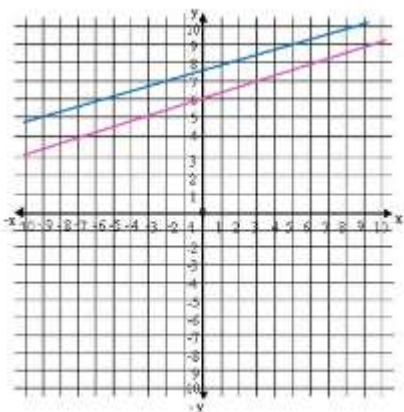
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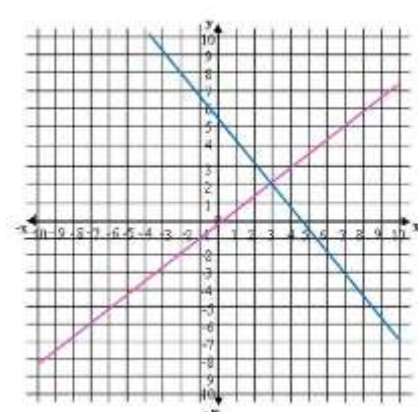
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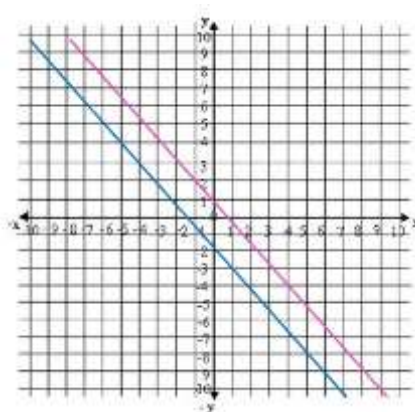
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INDEPENDENT SYSTEM is a system where two distinct non-parallel lines intersect at one specific point (x,y) .

Graphs:

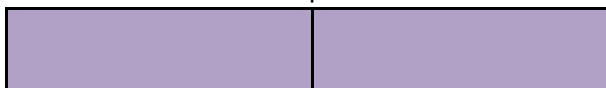
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SOLVING LINEAR SYSTEMS BY GRAPHING

Guided Notes

INCONSISTENT SYSTEM is a system where two distinct lines are parallel. Since parallel lines never intersect, then there can be no solution.

Graphs:



DEPENDENT SYSTEM is a system where appears to show only one line. Actually, there are two lines, one upon the other, then it has infinite solutions.

Graph:



LINEAR FUNCTION to graph a linear function it is necessary to find its point of intersection with the axes.

- X axis, where $y=0$
- Y axis, where $x=0$

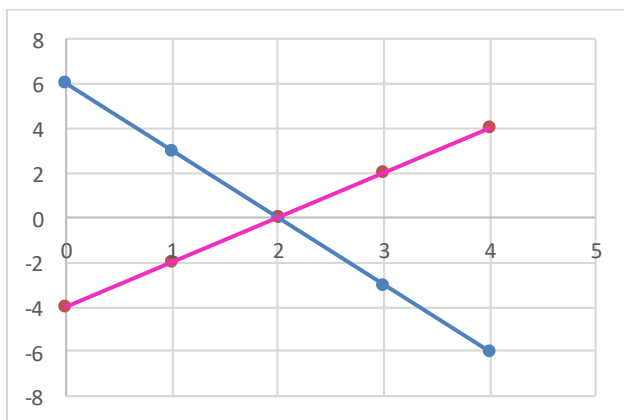
EQUATION OF A LINEAR FUNCTION it is represented by the following equation:

$$y - y_1 = m(x - x_1)$$

Where m is the slope of the line and (x_1, y_1) is a point that belongs to the linear function. The slope can be calculated by selecting two points from the graph and substituting them in the following equation:

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

Sample Problem 1: From the given graph, identify the equations of the linear function that compose the system:



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Sample Problem 2: Find the solution of the following system by graphing:

$$\begin{cases} x + y = 7 \\ 3x - y = -3 \end{cases}$$

Sample Problem 3: Identify the solution of the system and determine what type of system is

