Algebra I
Notes 6.1, Part 2 Solving Systems of Equations by Graphing

Objective: Find a solution to a system of linear equations by graphing.
Verify a solution to a system using the equations.

Two or more equations put together is a system of equations. symbol: $\{$

The solution to a system of linear equations is where the lines intersect.

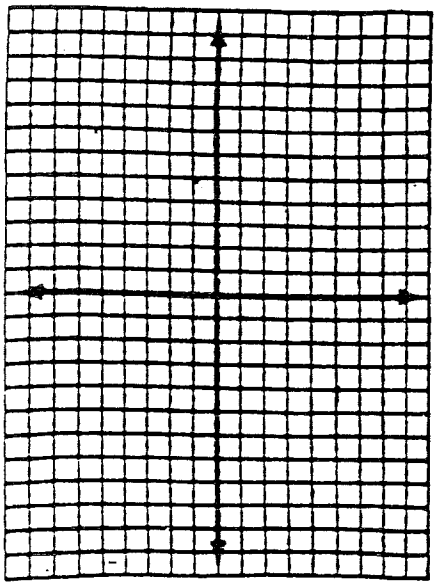
TO FIND A SOLUTION TO A SYSTEM OF LINEAR EQUATIONS BY GRAPHING:
Graph the lines *carefully* then approximate the point of intersection from your graph.
Your solution MUST make BOTH equations true.

DIRECTIONS: FIND THE SOLUTION TO EACH SYSTEM BY GRAPHING then VERIFY YOUR RESULT WITH TRUE EQUATIONS.

The solutions to these examples will be *integer coordinates*.

Example 1

$$\begin{cases} y = x - 3 \\ y = -2x + 3 \end{cases}$$

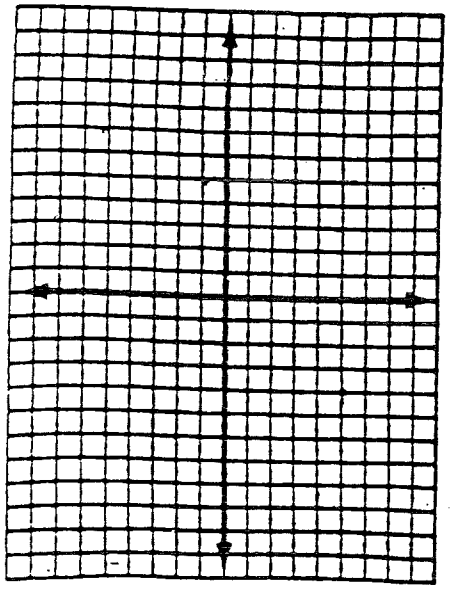


Verify your result.

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

Example 2

$$\begin{cases} y = 2x + 2 \\ y = \frac{1}{2}x + 5 \end{cases}$$

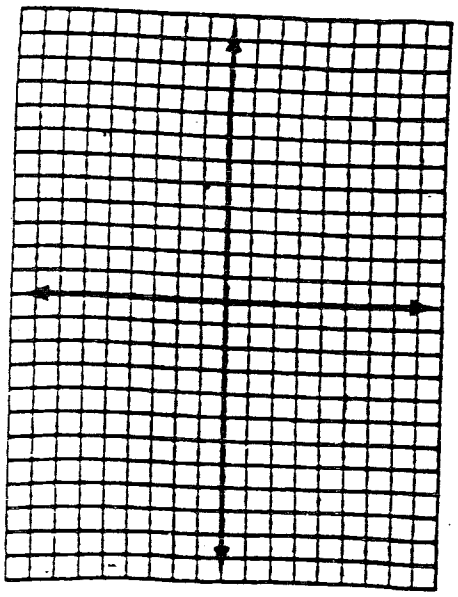


Verify your result.

$y = 2x + 2$ $y = \frac{1}{2}x + 5$

Example 3

$$\begin{cases} y = \frac{1}{2}x + 1 \\ y = 2x - 5 \end{cases}$$

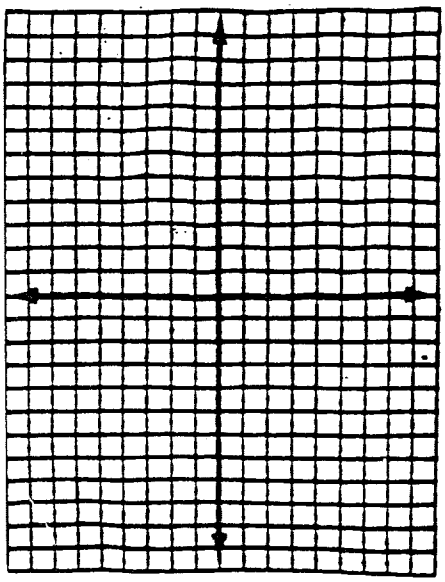


Verify your result.

$y = \frac{1}{2}x + 1$ $y = 2x - 5$

Example 4

$\begin{cases} y = x - 3 \\ y = -x + 1 \end{cases}$

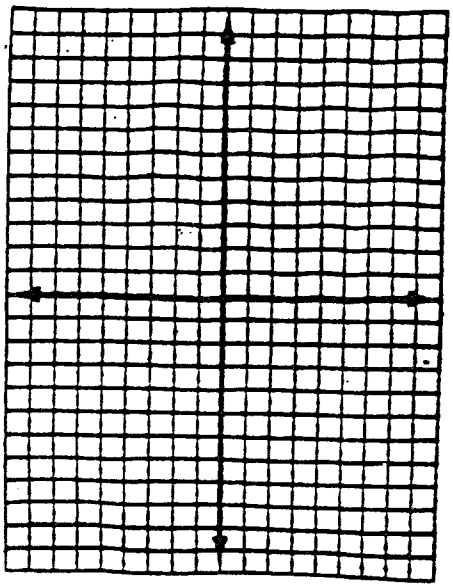


Verify your result.

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

Example 5

$\begin{cases} y = x + 3 \\ y = -x + 1 \end{cases}$

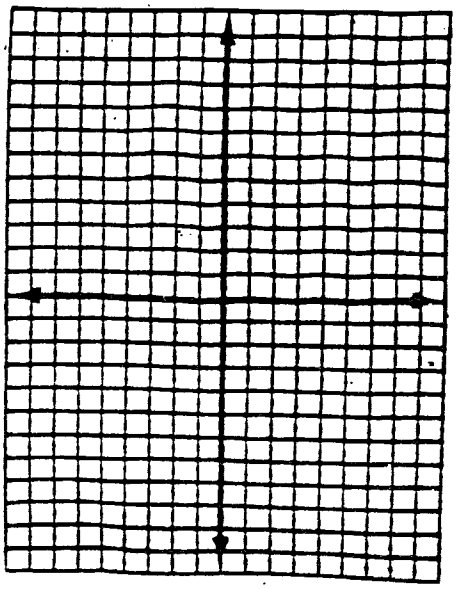


Verify your result.

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

Example 6

$\begin{cases} y = 3x - 3 \\ y = 2x - 1 \end{cases}$



Verify your result.

$y = 3x - 3$ $y = 2x - 1$

Algebraically determine whether the point (1, 4) is a solution for each pair of equations.

1. $\begin{cases} y = x + 3 \\ y = 2x - 2 \end{cases}$ _____

2. $\begin{cases} y = 3x + 1 \\ y = -x + 5 \end{cases}$ _____

3. $\begin{cases} y = 5x - 1 \\ y = -2x + 6 \end{cases}$ _____

4. Algebraically determine whether the point (2, −1) is a solution for the system of equations. Then check by graphing the system on the grid provided.

$\begin{cases} y = x - 3 \\ y = 2x - 5 \end{cases}$