Notes #1 – Graphing Systems of Equations

Vocabulary:
A system of linear equations is _____

_____

A solution of a system of linear equations is _____

_____

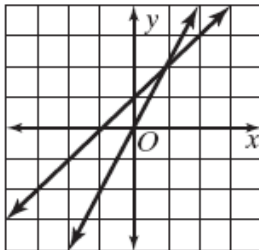Point of Intersections (POI) is the same thing as the solution of a system.

No solution means _____

_____

A system of equations has infinitely many solutions when _____
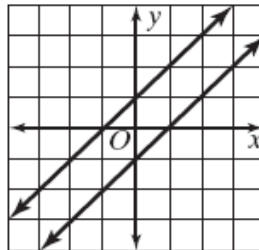
_____

Vocabulary and Key Concepts

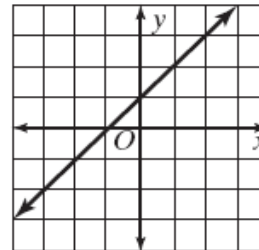Numbers of Solutions of Systems of Linear Equations

different slopes

same slope
different y-intercepts

same slope
same y-intercept

The lines [_____] so there is [_____] solution.

The lines [_____] so there are [_____] solutions.
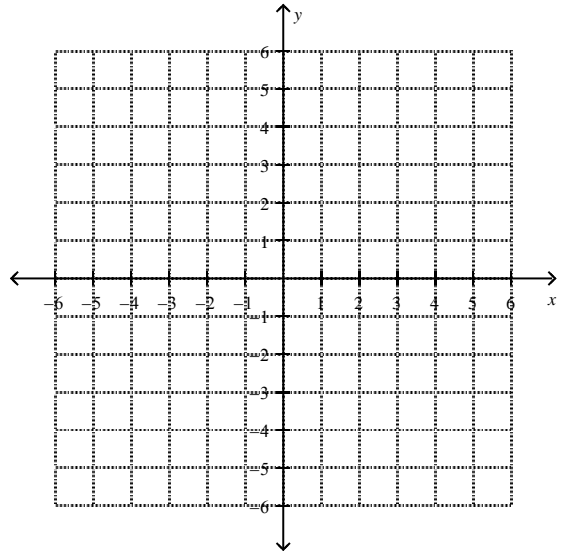
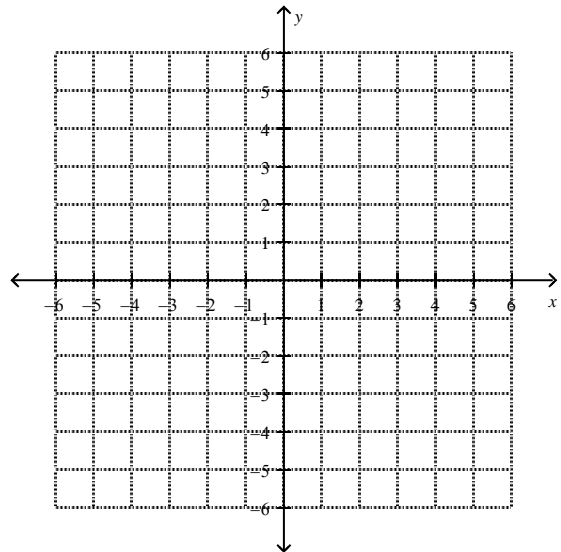The lines are [_____] so there are [_____] solutions.

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Systems with No solutions

    1.) Solve by graphing: $\begin{cases} y = 3x + 2 \\ y = 3x - 2 \end{cases}$
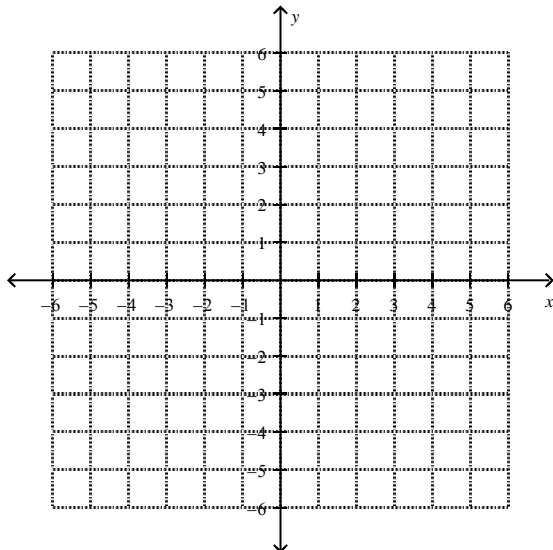
Systems with Infinitely Many solutions

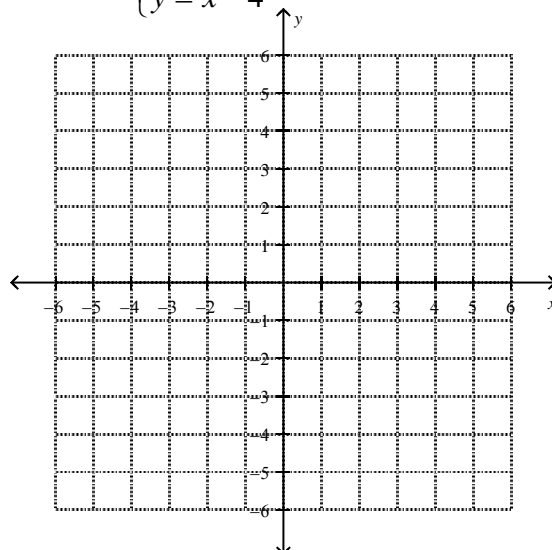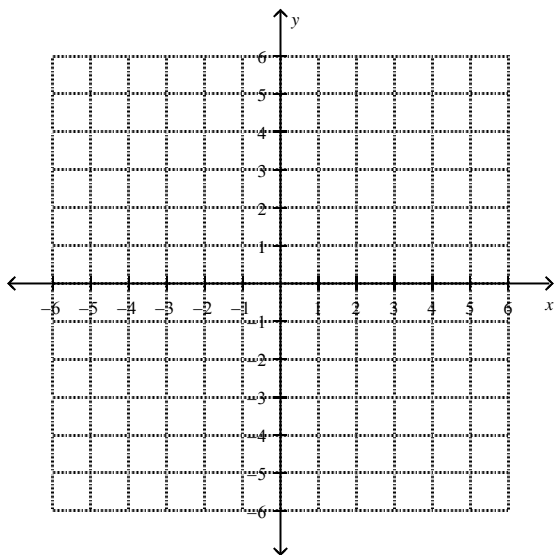   **2.)** $\begin{cases} y = -\dfrac{3}{4}x + 3 \\ y = -\dfrac{3}{4}x + 3 \end{cases}$

Examples:

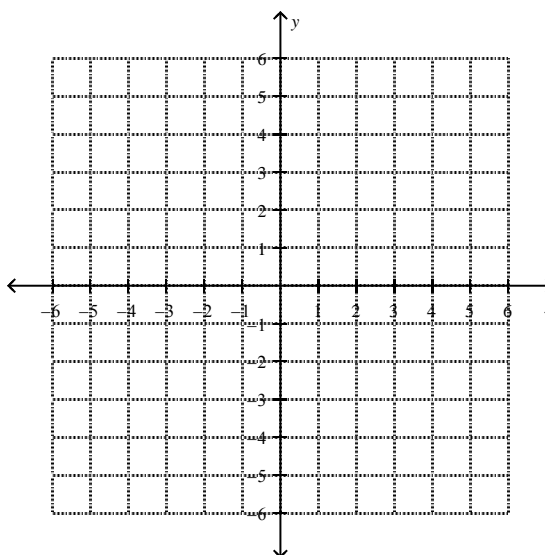   **1a.)** $\begin{cases} y = x + 2 \\ y = 2x + 1 \end{cases}$ **1b.)** $\begin{cases} y = -\dfrac{1}{2}x - 1 \\ y = x - 4 \end{cases}$
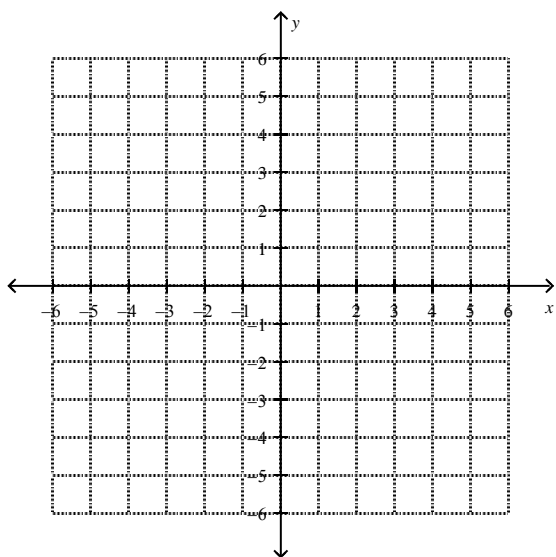
2

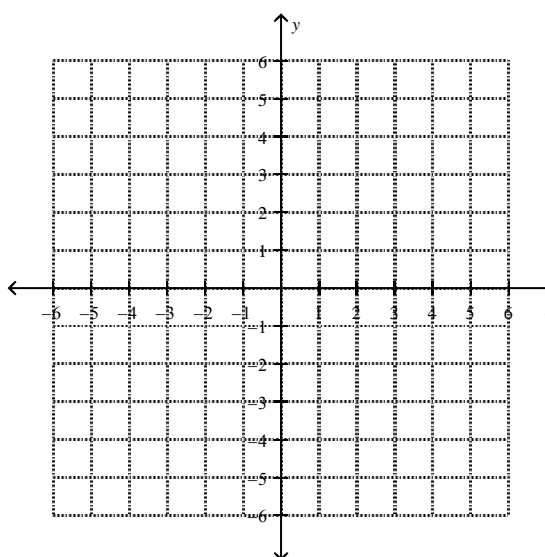**2a.)** $\begin{cases} x = 2 \\ y = -6 \end{cases}$

2b.) $\begin{cases} y = 3 \\ x = -4 \end{cases}$

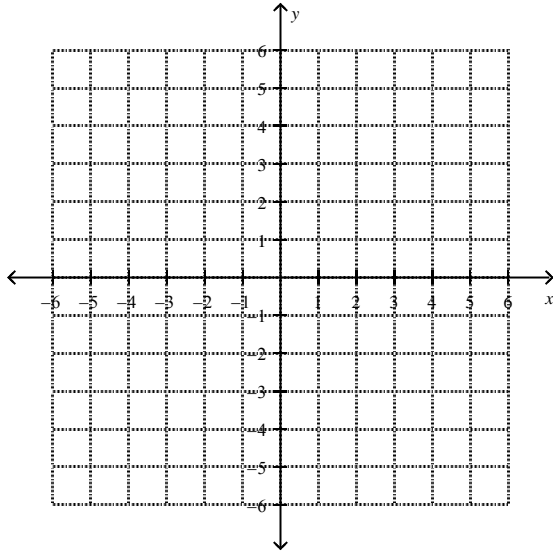**3a.)** $\begin{cases} 2x - 6 = y \\ 3 - x = y \end{cases}$

3b.) $\begin{cases} -\dfrac{3}{2}x + 2 = y \\ -2 + \dfrac{1}{2}x = y \end{cases}$
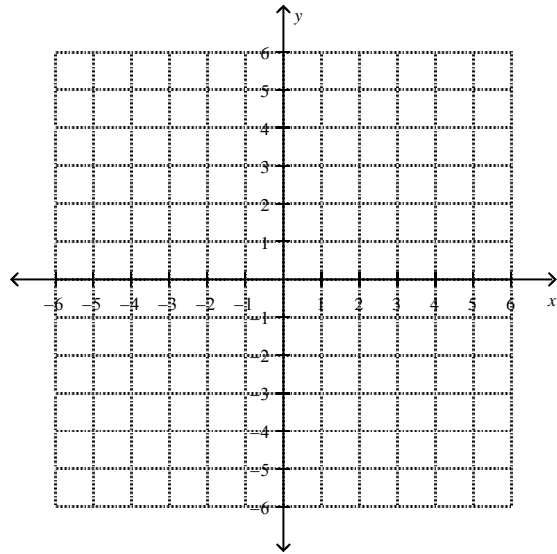
Practice:

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

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

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

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