Name: _____ **Period:** _____

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 _____

_____

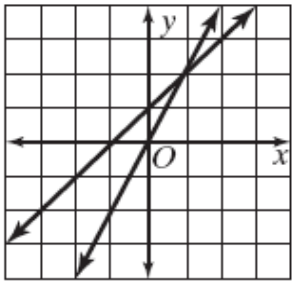
A system of equations has infinitely many solutions when _____

_____

Vocabulary and Key Concepts

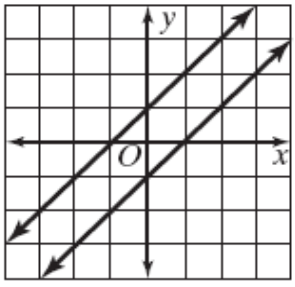
Numbers of Solutions of Systems of Linear Equations

different slopes



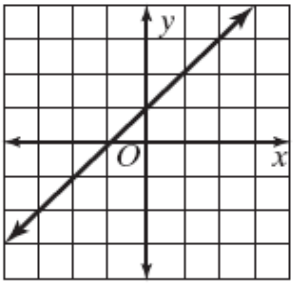
The lines [ ] so there is [ ] solution.

same slope
different *y*-intercepts



The lines [ ] so there are [ ] solutions.

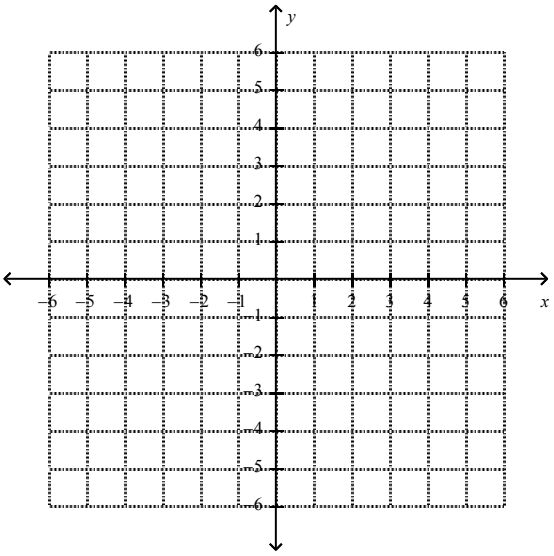
same slope
same *y*-intercept



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

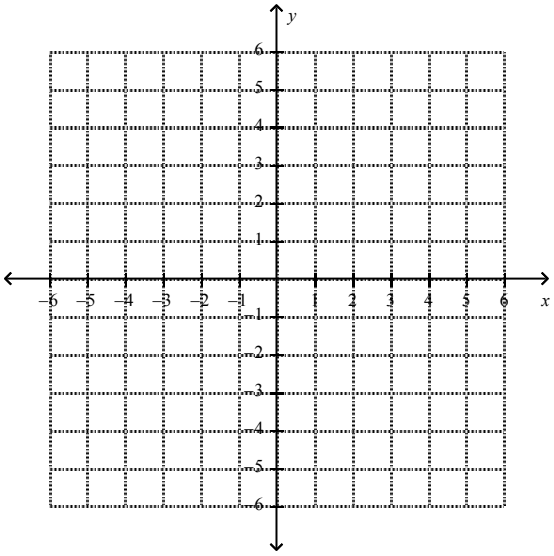
Systems with No solutions

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



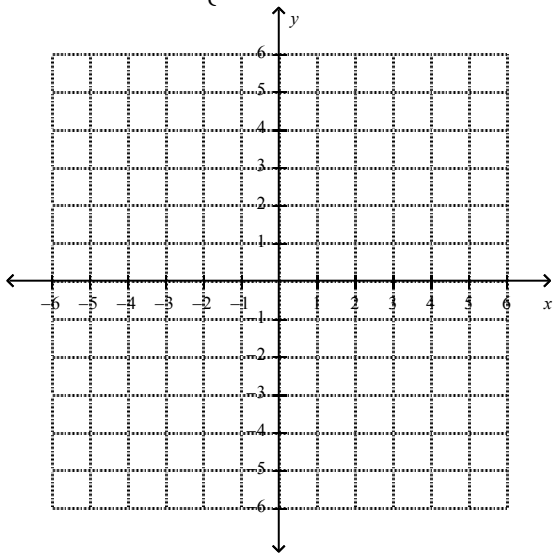
Systems with Infinitely Many solutions

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

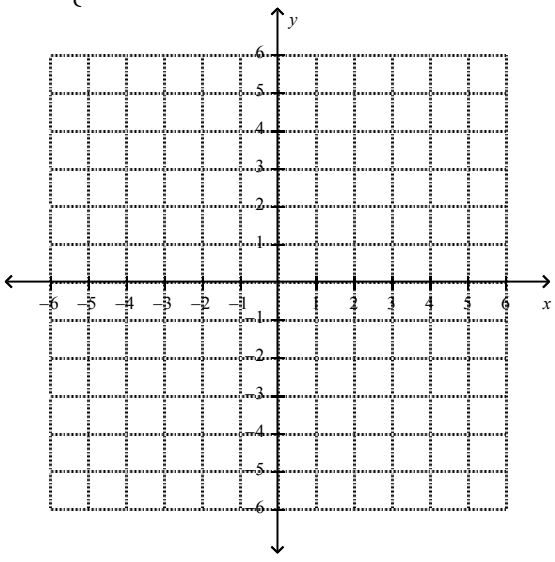


Examples:

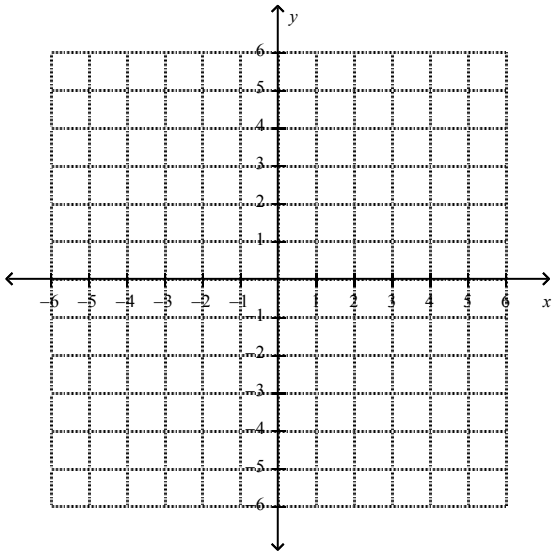
1a.) $\begin{cases} y = x + 2 \\ y = 2x + 1 \end{cases}$



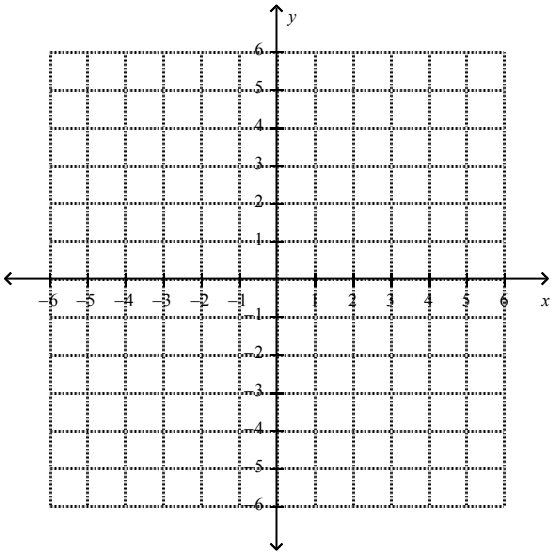
1b.) $\begin{cases} y = -\frac{1}{2}x - 1 \\ y = x - 4 \end{cases}$



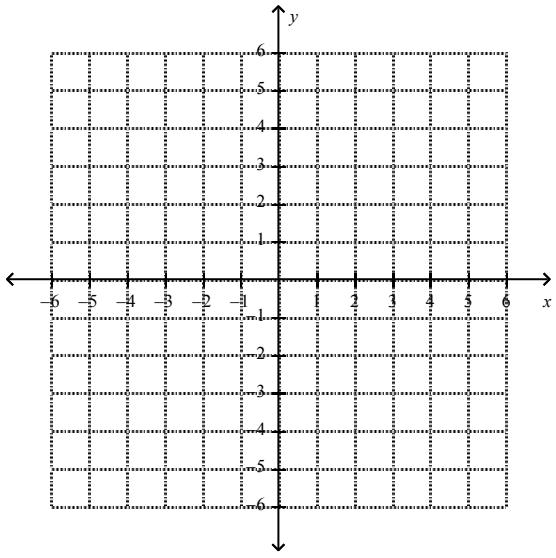
2a.) $\begin{cases} x = 2 \\ y = -6 \end{cases}$



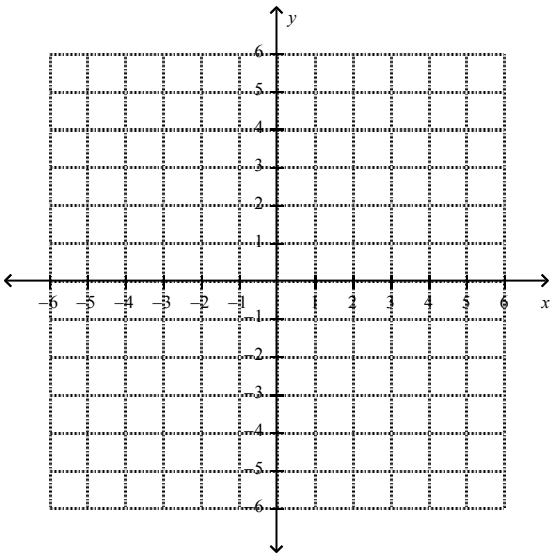
2b.) $\begin{cases} y = 3 \\ x = -4 \end{cases}$



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

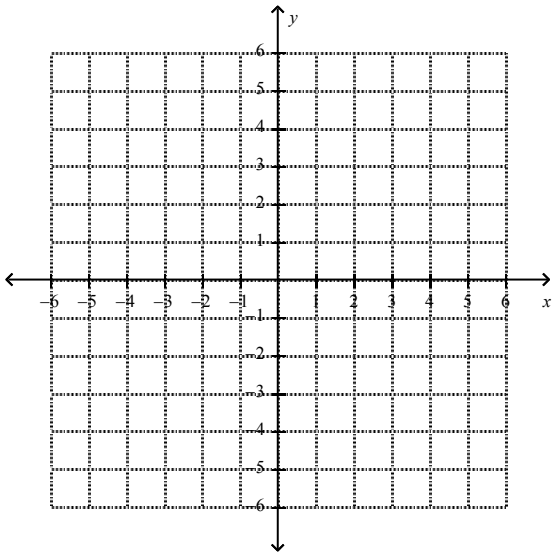


3b.) $\begin{cases} -\frac{3}{2}x + 2 = y \\ -2 + \frac{1}{2}x = y \end{cases}$

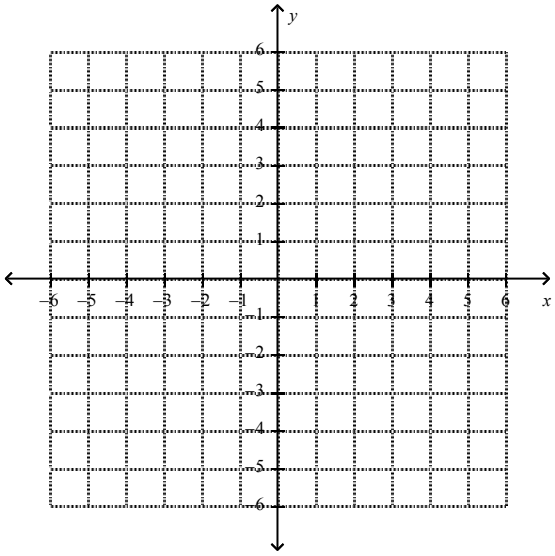


Practice:

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



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



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