# Lesson 15        Solving Systems by Graphing

**Vocabulary:**

**System of Linear Equations:**      two or more linear equations grouped together

**Solution of a System of Linear Equations:**   any ordered pair that makes all equations in the system true.
In the graph, any point at which the graphs intersect or touch.

**No Solution:**   When the equations in a system are parallel, and/or do not intersect.

**Infinitely Many Solution:**   When the graphs of two equations lie on top of each other, or the lines are really the same equation.
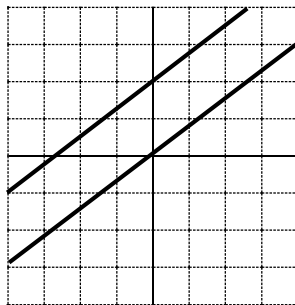
**Types of Linear Systems:**
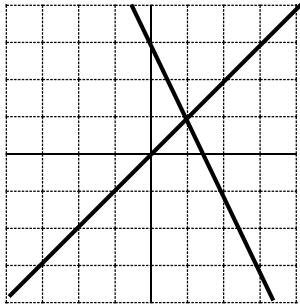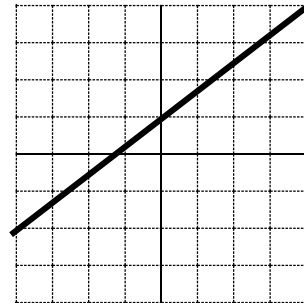


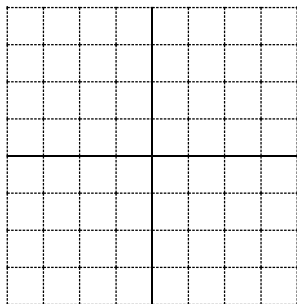| **Intersecting Lines** | **Parallel Lines** | **Same Line** |
| One Solution | No Solution | Infinitely Many Solutions |
| (x, y) | | y = mx + b |

Examples:    Solve by Graphing.

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

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