**Solving Systems of Linear Equations Graphically and by Using Tables**

Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

When you find the solution to a system of equations you are finding the point or points in which the graphs of the equation intersect. Systems of linear equations can have zero, one, or infinitely many solutions.

* zero solution:
* one solution:
* infinitely many solutions:

Examples:

1. Solve the following systems of equations graphically.
	1. $y=4x-2$

$$y=6x-4$$

* 1. $y=-2x+7$

$$y=x+1$$

* 1. $y=-x-1$

$$y=3x-13$$

* 1. $y=3x-1$

$$y=4x-3$$

1. The equations y = 18 + .4m and y = 11.2 + .54m give the lengths of two different springs in centimeters, as mass is added in grams, m, to each separately.
	1. Graph each equation on the same set of axes.
	2. What mass makes the springs the same length?
	3. What is the length at that mass?
	4. Write a sentence comparing the two springs.

Independent Practice

1. Solving the following systems of equations by using graphs and tables.
	1. $y=6x+13$

$$y=-3x+4$$

* 1. $y=-x-6$

$$y=-2x-7$$

* 1. $y=8x-18$

$$y=7x-15$$

1. The equations $y=120+.10x$ and $y=100+.15x$give the cost of two different rental truck companies, where x represents the number of miles the truck will travel and y represents the cost of renting the truck.
	1. Graph each equation on the same set of axes.
	2. What mileage makes the total cost of each truck equal?
	3. How much is the total cost in question b?
	4. Write a sentence comparing the two rental truck companies.