Get out a piece of paper to be turned in. Write your name at the top and answer the following questions:

1. What is something fun or interesting that you did over break?
2. What grade do you think you can earn this semester?
3. What can you do that will help you achieve this grade?
4. What can I do that will help you achieve this grade?
5. What are your strengths and weaknesses in math?

4.1 Getting Started

Objective: To investigate systems of equations

A Solution of a system of linear equations is an ordered pair that satifies EACH equation.

The ordered pair (x,y) has to work for BOTH equations

For example:

(3,5) is a solution of both equations:

x + y = 8

$3+5\stackrel{?}{=}8$

$8=8$ ✓

5x - 2y = 5

$5(3)-2(5)\stackrel{?}{=}5$

$15-10\stackrel{?}{=}5$

$5=5$ ✓

Work in groups of 2-3 on
Homework: p.**283(1-4,6)**

1. Solve the following system in at least two ways.

$$x + y = 4$$
$$2x - y = -1$$

2. Solve the following system.

$$2x + y = 1$$
$$3x + 2y = 1$$

3. Find the point where the lines given by the following equations intersect.

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

4. Find an x-value for which these two functions have the same output.

$$f(x) = 3x + 2$$
$$g(x) = -2x + 1$$

6. Another way to find a polynomial with a graph that passes through the points $(0, 1)$, $(1, -1)$, and $(3, 1)$ is to first realize that the highest-degree polynomial you need to fit these three points is a quadratic. Then you can begin with a general form of a quadratic function, $q(x) = ax^2 + bx + c$. Use the data points to write a system of equations for finding the coefficients a, b, and c.

a. Explain why $q(3) = 1$ implies that $9a + 3b + c = 1$.

b. Find two more equations involving a, b, and c using the other data points.

c. Find an equation for the polynomial.