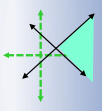
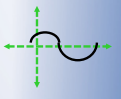
$5x-2y \le 75$



$\begin{bmatrix} a & b \\ c & d \end{bmatrix}$



$S = Pe^{rt}$

$APY = (1+\frac{r}{n})^{n}-1$

# Math 1090 ~ Business Algebra

## Section 1.2 Linear Inequalities in One Variable

Objectives:

- Solve and simplify linear inequalities.
- Graph linear inequalities.
- Translate a word problem into a linear inequality.

A Linear Inequality can be written in the form $ax + b \le c$, where $a,b$ and $c$ are constants and $a \neq 0$.

A linear inequality is solved much like a linear equation.

If we multiply or divide by a negative number, the inequality sign must be switched.

Ex 1: Solve and graph the solution for each of these.

a) $\frac{3}{2}x+3 \le -6$

b) $\frac{5x+3}{8}-1 > \frac{x+4}{6}+1$

Ex 2: Solve and graph the solution.

$5 - 3x > 17$

Ex 3: Translate to a compound inequality.

Three times a number is less than 13 and greater than -3.

Ex 4: An investor wants to invest a total of $10,000 in two different accounts. The riskier investment yields an annual average of 9.5% profit and the safer investment has an annual average yield of 4.5%. How much money should be invested in the riskier account in order to earn at least $600 profit in a year?

Ex 5: A product sells for $20 and has a unit cost of $15, and fixed costs of $200,000. Find the least number of products that must be sold to have a profit.