




$5x-2y \leq 75$



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



$S = Pe^{rt}$



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

### Math 1090 ~ Business Algebra

Section 1.7 Linear Inequalities in Two Variables

Objectives:

- Simplify and graph a linear inequality in two variables.
- Graph a system of linear inequalities.
- Determine the solution set to a system of inequalities.

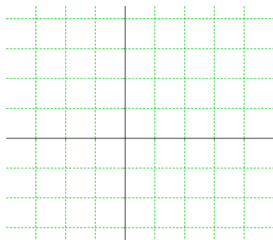
Linear Inequality

Linear system of inequalities

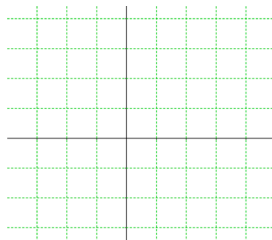
Solution Set

Ex 1: Graph the solution set.

a)  $2x + y \leq 4$

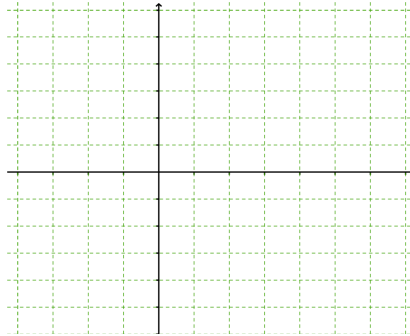


b)  $4x - 3y \leq 9$



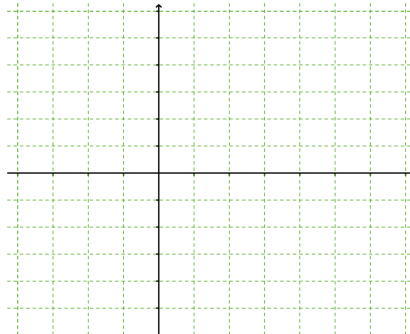
Ex 2: Solve and graph the solution set on a 2d plane.

$$\begin{aligned}x+y &> \frac{1}{2} \\ 2x+\frac{3}{4}y &< 3 \\ x &\geq 0\end{aligned}$$



Ex 3: Solve and graph the solution set.

$$\begin{aligned}-5x-y &> -3 \\ x-2y &< 12 \\ y &\leq 0 \\ x &\geq 0\end{aligned}$$



Ex 4: A furniture company makes and sells two types of tables, one small and one large. Each large table requires two hours of assembly and two hours of finish work. Each small table requires 3 hours of assembly and  $1\frac{1}{4}$  hours of finish work. The assembly shop is open a maximum of 12 hours per day. The finishing shop is available for 10 hours per day. Find the system of linear inequalities to represent this and graph solutions.

