

Definition: A **linear inequality** in the variables x and y is an inequality that can be written in one of the forms:

$$ax + by + c < 0$$

$$ax + by + c > 0$$

$$ax + by + c \leq 0$$

$$ax + by + c \geq 0$$

Geometrically, the **solution (graph)** of a linear inequality in x and y consists of all points (x, y) in the plane whose coordinates satisfy the inequality.

The **solution of a system of inequalities** consists of all points whose coordinates simultaneously satisfy all of the given inequalities.

Geometrically, it is the region common to the solutions of all the inequalities.