

Important notes \Rightarrow

- An ordered pair (x, y) is a solution of linear inequality if the inequality is satisfied by (x, y)

$$\text{linear inequality} \Rightarrow ax + by + c = 0 ; a, b, c \in \mathbb{R}$$

*1. The region containing all the solutions of an inequality is called the solution region.

*2. In order to identify the half plane represented by an inequality, it is just sufficient to take any point (a, b) (not on line) and check whether it satisfies the inequality or not. If yes, then the inequality represents the half plane and shade the region which contain the point, otherwise, the inequality represents the half plane which doesn't contain the point within it.

*3. If an inequality is of type $ax + by \geq c$ or $ax + by \leq c$, then the points on the line $ax + by = c$ are also included in the solution region. Represent it by dark line.

*4. If an inequality is of the form $ax + by > c$ or $ax + by < c$, then the points on the line $ax + by = c$ are not to be included in the solution region. Represent it by dotted line.