

## Step-1

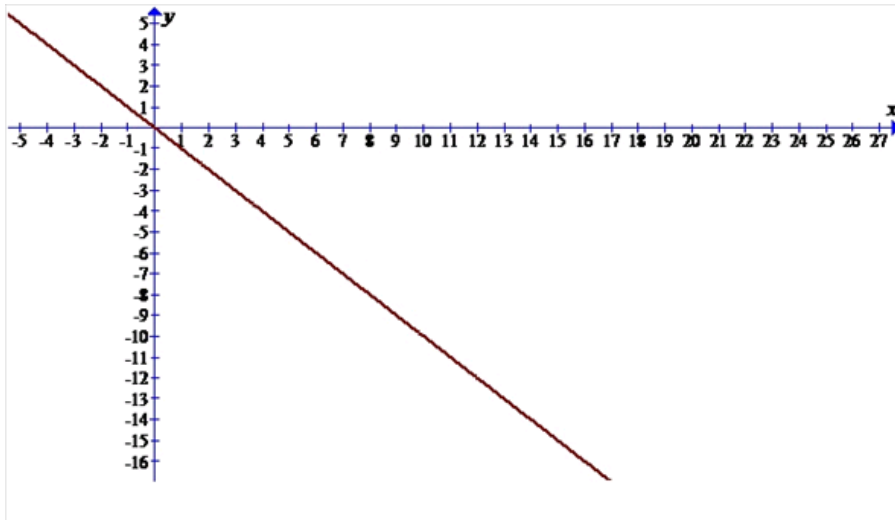
*Feasible set:* A feasible set is composed of the solutions to a family of linear inequalities, and a feasible point maximizes or minimizes a certain cost function.

## Step-2

By adding a single inequality to constraints  $x \geq 0, y \geq 0$  show that feasible set contains only single point.

## Step-3

Following sketch gives the feasible region:



Here intersection shows that the feasible region contains single feasible point.

## Step-4

Any region can contain unbounded, empty or feasible region. In feasible region many feasible points can be formed with the help of constraints. If only one feasible point is required then the constraint will be as follows:

$$x + y \leq 0$$

This will give only one feasible point  $(0, 0)$ .

## Step-5

Therefore, constraint to be added is  $x + y \leq 0$ .

