

Ch-3 Linear Inequalities.

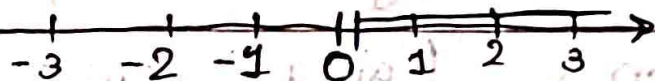
Maths

* Concepts.

- Inequalities are statements where two quantities are unequal but a relationship exists between them.
- These type of inequalities occur in business whenever there is a limit on supply, demand, sales, etc.
- The value of variable that satisfies the equation is called as solution of the equation.
- The values of the variables that satisfy an inequality are called the solution space and is abbreviated as S.S.-
- Any linear function that involves an inequality sign is a linear inequality.
- It may be of one variable, or, of more than one variable.

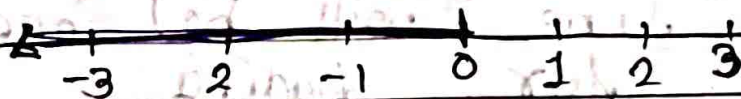
* Concepts

→ Linear Inequalities: Eg. (1) $x > 0$
in one variable.

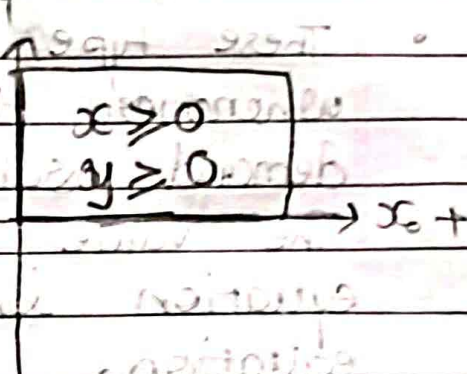
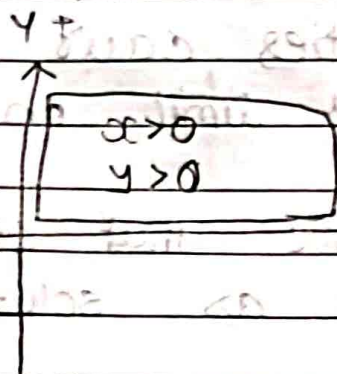
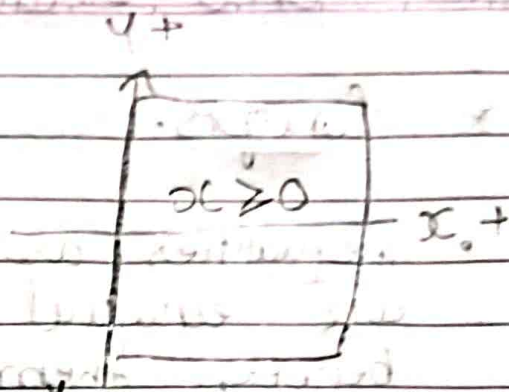
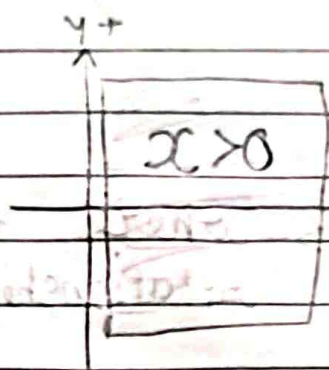


eg. 2

$$x \leq 0$$



Basics of Shading in a Plane (two variables)



How to Solve Linear Inequalities in two variables?

Step 1 we replace the inequality sign by an equal sign (just to find points / coordinates)

Step 2 Find coordinates of the line by first taking $x=0$ to get y and then taking $y=0$ to get x . If line passes through origin take point other than 0.

Step 3. Using points obtained in step 2 - join the points by a straight line. This line will be used as basis for shading.

Step 4. Do the shading above, or below / right or left of line using below rules:

Scenario	Shading side from line
• more than sign towards x $x >$	Right
• Less than sign towards x $x <$	left
• more than sign towards y $y >$	Up
• less than sign towards y $y <$	Down

Note: before applying above rule please ensure that coefficients are positive by shifting them from LHS to RHS or vice-versa