

**CBSE Class-11 Mathematics**  
**NCERT Solutions**  
**Chapter - 6 Linear Inequalities**  
**Exercise 6.2**

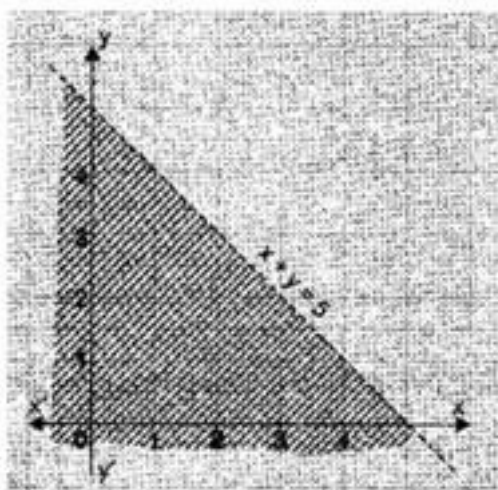
**Solve the following inequalities graphically in two dimensional planes:**

1.  $x + y < 5$

**Ans.** Given:  $x + y < 5$

Draw a dashed boundary line satisfying the equation  $x + y = 5$

$x$	1	2
$y$	4	3



Putting  $(0, 0)$  in the given inequality  $x + y < 5$  we get,

$$0 + 0 < 5$$

$$\Rightarrow 0 < 5$$

which is true.

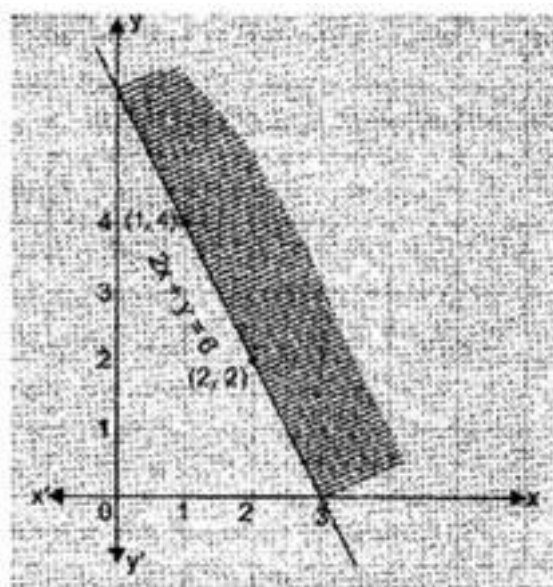
Therefore, Half plane of  $x + y < 5$  towards origin.

2.  $2x + y \geq 6$

**Ans.** Given:  $2x + y \geq 6$

Draw a solid boundary line satisfying the equation  $2x + y = 6$

$x$	1	2
$y$	4	2



Putting  $(0, 0)$  in the given inequality  $2x + y \geq 6$  we get

$$2 \times 0 + 0 \geq 6$$

$$\Rightarrow 0 \geq 6$$

which is false.

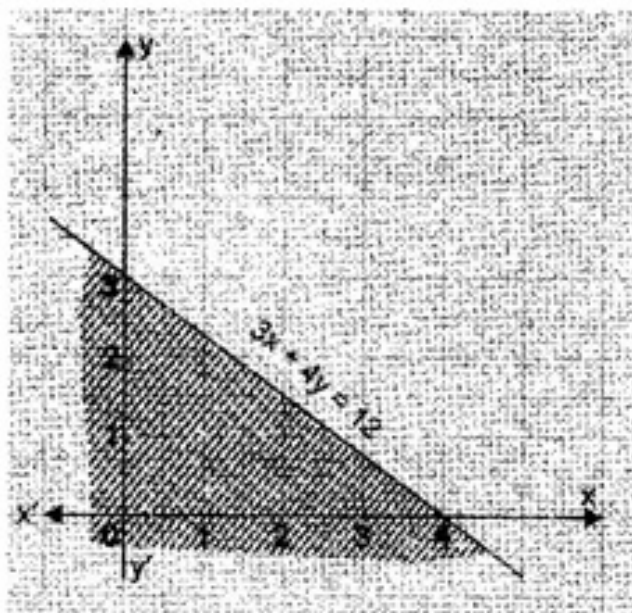
Therefore, Half plane of  $2x + y \geq 6$  away from the origin.

**3.**  $3x + 4y \leq 12$

**Ans.** Given:  $3x + 4y \leq 12$

Draw a solid boundary line satisfying the equation  $3x + 4y = 12$

$x$	0	4
$y$	3	0



Putting  $(0, 0)$  in the given inequality  $3x + 4y \leq 12$  we get,

$$3 \times 0 + 4 \times 0 \leq 12$$

$$\Rightarrow 0 \leq 12$$

which is true.

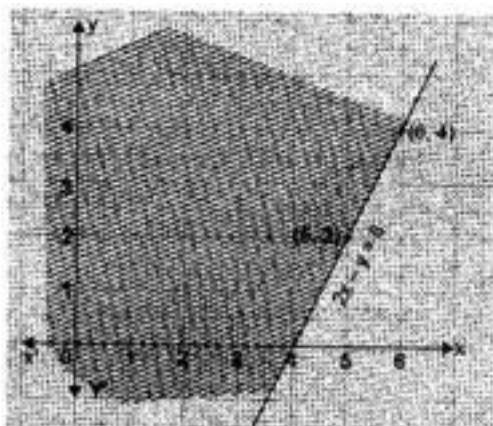
Therefore, Half plane of  $3x + 4y \leq 12$  towards the origin.

4.  $y + 8 \geq 2x$

**Ans.** Given:  $y + 8 \geq 2x$

Draw a solid boundary line satisfying the equation  $y + 8 = 2x$

$x$	5	6
$y$	2	4



Putting  $(0, 0)$  in the given inequality  $y + 8 \geq 2x$  we get,

$$0 + 8 \geq 0$$

$$8 \geq 0 \Rightarrow 0 \leq 8$$

which is true.

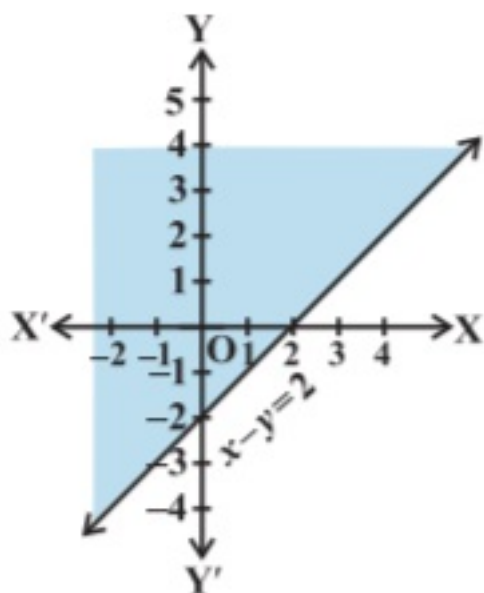
Therefore, Half plane of  $y + 8 \geq 2x$  towards the origin.

5.  $x - y \leq 2$

**Ans.** Given:  $x - y \leq 2$

Draw a solid boundary line satisfying the equation  $x - y = 2$

$x$	2	0
$y$	0	-2



Putting  $(0, 0)$  in the given inequality  $x - y \leq 2$  we get ,

$$\Rightarrow 0 - 0 \leq 2$$

$$\Rightarrow 0 \leq 2$$

which is true.

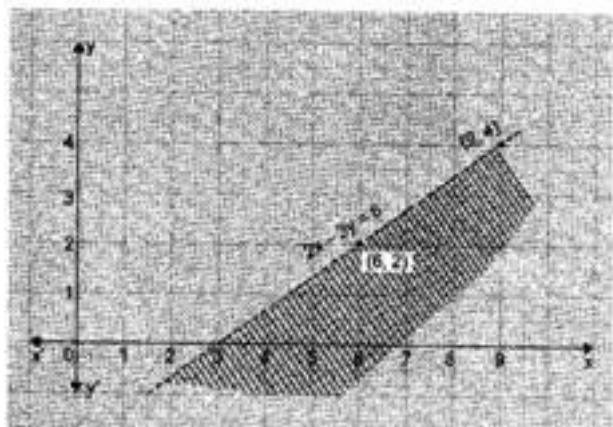
Therefore, Half plane of  $x - y \leq 2$  towards the origin.

6.  $2x - 3y > 6$

**Ans.** Given:  $2x - 3y > 6$

Draw a dashed boundary line satisfying the equation  $2x - 3y = 6$

$x$	6	9
$y$	2	4



Putting  $(0, 0)$  in the given inequality  $2x - 3y > 6$  we get

$$2 \times 0 - 3 \times 0 > 6$$

$$\Rightarrow 0 > 6$$

which is false.

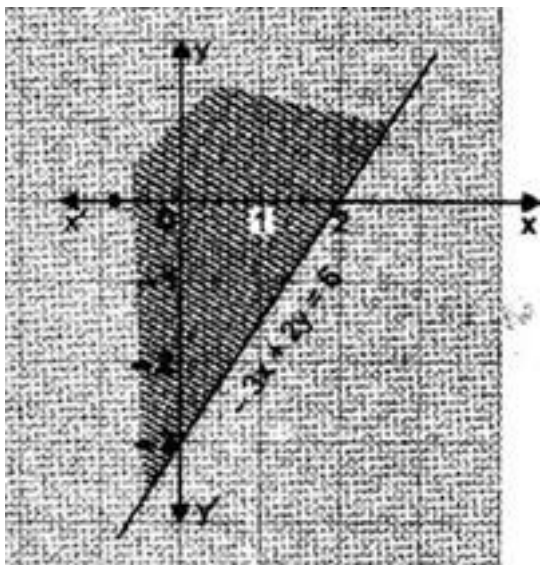
Therefore, Half plane of  $2x - 3y > 6$  away from the origin.

7.  $-3x + 2y \geq -6$

**Ans.** Given:  $-3x + 2y \geq -6$

Draw a solid boundary line which satisfying the equation  $-3x + 2y = -6$

$x$	2	0
$y$	0	-3



Putting  $(0, 0)$  in the given inequality  $-3x + 2y \geq -6$  we get,

$$-3 \times 0 + 2 \times 0 \geq -6$$

$$\Rightarrow 0 \geq -6$$

which is true.

Therefore, Half plane of  $-3x + 2y \geq -6$  towards the origin.

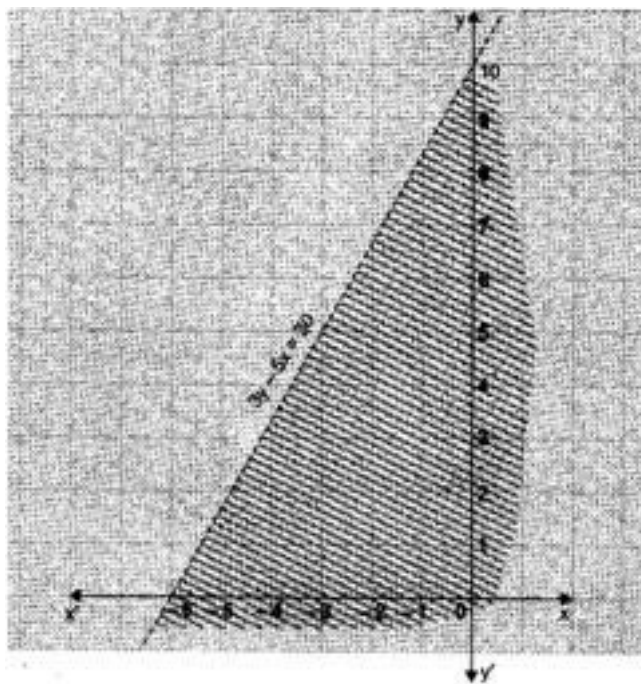
8.  $3y - 5x < 30$

**Ans.** Given:  $3y - 5x < 30$

Draw a dashed boundary line satisfying the equation  $3y - 5x = 30$

$x$	$-6$	$0$
$y$	$0$	$10$





Putting  $(0, 0)$  in the given inequality  $3y - 5x < 30$  we get,

$$-3 \times 0 - 5 \times 0 < 30$$

$$\Rightarrow 0 < 30$$

which is true.

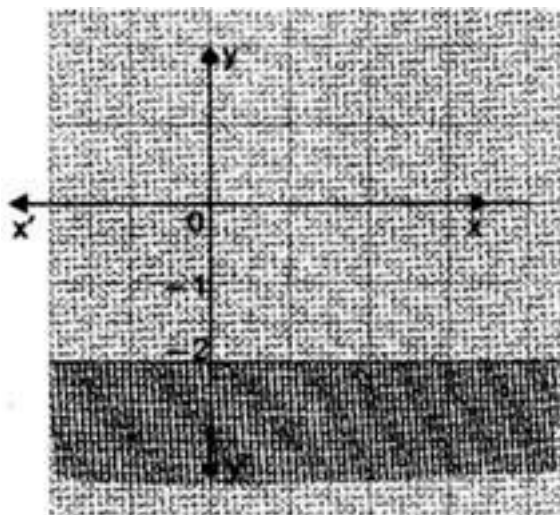
Therefore, Half plane of  $3y - 5x < 30$  towards the origin.

9.  $y < -2$

**Ans.** Given:  $y < -2$

Draw a dashed boundary line satisfying the equation  $y = -2$





Putting  $(0, 0)$  in the given inequality  $y < -2$  we get,

$$0 < -2$$

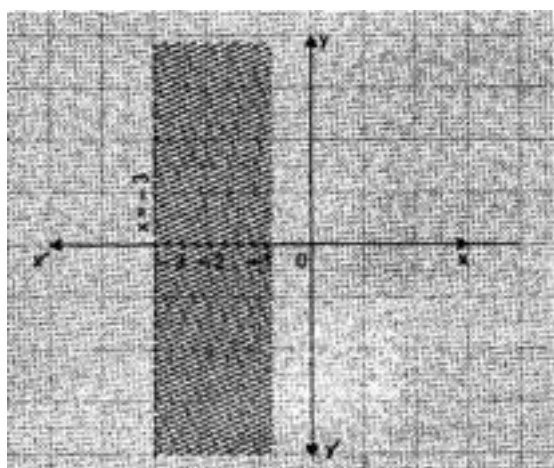
which is false.

Therefore, Half plane of  $y < -2$  away from the origin.

**10.**  $x > -3$

**Ans.** Given:  $x > -3$

Draw a dashed boundary line which satisfying the equation  $x = -3$



Putting  $(0, 0)$  in the given inequality  $x > -3$  we get

$$0 > -3$$

which is true, therefore, Half plane of  $x > -3$  towards the origin.