

# INTERNATIONAL INDIAN SCHOOL, RIYADH

## FIRST - TERM WORKSHEETS

### LINEAR INEQUATIONS

1. Draw the graph of the solution set of the inequations  $2x + 3y \geq 6$ ,  $x + 4y \leq 4$ ,  $x \geq 0$  and  $y \geq 0$ .
2. Solve the following simultaneous linear inequations:  
 $x + 2y \leq 10$ ,  $x + y \leq 6$ ,  $x \leq 4$ ,  $x \geq 0$  and  $y \geq 0$ .
3. Solve  $12 + 1\frac{5}{6}x \leq 5 + 3x$  when
  - (i)  $x \in \mathbb{N}$
  - (ii)  $x \in \mathbb{R}$
4. Solve the inequation  $-3 \leq -2x < 9$ ,  $x \in \mathbb{R}$ . Represent the solution on the real line.
5. Solve  $2x - 3 < x + 2 \leq 3x + 5$ ,  $x \in \mathbb{R}$ . Draw the graph of the solution set.
6. Solve  $2x - 1 > x + \frac{7-x}{3} > 2$ ,  $x \in \mathbb{R}$ .
7. Solve  $|x| < 4$  and represent the solution set on the number line.
8. Solve  $|x + 1| > 4$ ,  $x \in \mathbb{R}$ .
9. Solve  $\frac{x+4}{x-2} > 0$  and draw the graph of the solution set.
10. Solve  $\frac{5}{x-2} > 3$  and represent the solution set on the number line.
11. Solve  $\frac{x-3}{x+4} < 0$  and draw the graph of the solution set.

Solve each of the following systems of inequations graphically.

12.  $3x + 2y \leq 18$ ,  $x + 2y \leq 10$ ,  $x \geq 0$ ,  $y \geq 0$
13.  $2x + 3y \leq 6$ ,  $x + y \geq 2$ ,  $x \geq 0$ ,  $y \geq 0$
14.  $x + 4y \geq 12$ ,  $4x + 7y \leq 28$ ,  $y \geq 1$ ,  $x \geq 0$ ,  $y \geq 0$

15.  $x - 2y \leq 2, x + y \geq 3, -2x + y \leq 4, x \geq 0, y \geq 0$
16.  $x + 2y \leq 100, 2x + y \leq 120, x + y \leq 70, x \geq 0, y \geq 0$
17.  $x + 2y \leq 2000, x + y \leq 1500, y \leq 600, x \geq 0, y \geq 0$
18.  $x + y \geq 4$
19.  $2x + y \geq 2, x - y \leq 1, x + 2y \leq 8, x \geq 0$  and  $y \geq 0$
20.  $2x - y \geq 1$