



GRADE 11<sup>TH</sup> MATHS  
CHAPTER 6

# LINEAR INEQUALITIES

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## Mathematics – Test

### Linear Inequalities (CBSE - Class XI)

#### General Instructions

- All questions are compulsory
  - Use graph paper for plotting of graph
  - Q 1 to 4, 2 mark each, Q 5 to 8, 3 mark each.
  - No use of calculator
- Solve the inequalities in question  
i)  $6 \leq -3(2x-4) < 12$ .
  - The cost and revenue functions of a product are given by  $C(x)=2x+400$  and  $r(x)=6x+20$  respectively, where  $x$  is the number of items produced by the manufacturer. How many items the manufacturer must sell to realize some profit. What is its value ?
  - Solve  $12 + 1 - x \leq 5 + 3x$  when
    - $x \in \mathbb{N}$
    - $x \in \mathbb{R}$
  - Solve  $2x - 3 < x + 2 \leq 3x + 5$ ,  $x \in \mathbb{R}$ . Draw the graph of the solution set.
  - Find all pairs of consecutive even positive integers, both of which are larger than 5 such that their sum is less than 23.
  - How many litres of water will have to be added to 1125 litres of the 45% solution of acid so that the resulting mixture will contain more than 25% but less than 30% acid content?

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- Solve the following system of inequalities graphically  
 $2x+y \leq 24$ ,  
 $x+y < 11$ ,  
 $2x+5y \leq 40$ ,  
 $x, y \geq 0$ .
- Solve the inequalities in questions and represent the solution graphically on number line.  
 $5x+1 > -24$ ,  $5x-1 < 24$ .

