

# Linear Inequalities

7

1m	2m	3m	4m	5m	6m	Total
–	1(U)	1(K)	–	–	–	5

## 2 MARKS QUESTIONS

1. Solve  $7x + 3 < 5x + 9$  and represent the solution on number line. **(Understanding)**
2. Solve  $\frac{3x-4}{2} > \frac{x+1}{4} - 1$ ,  $x \in \mathbb{R}$  and represent the solution on number line.
3. Solve  $\frac{x}{3} + \frac{x}{2} + x < 11$ ,  $x \in \mathbb{R}$  and represent the solution on number line.
4. Solve  $\frac{3(x-2)}{5} \leq \frac{5(2-x)}{3}$ ,  $x \in \mathbb{R}$
5. Solve:  $3x - 7 > 2(x - 6)$  and  $6 - x > 11 - 2x$ ,  $x \in \mathbb{R}$ .
6. Solve:  $2x + 3 \geq 18$  and  $3x + 1 \leq 12$ ,  $x \in \mathbb{R}$ .
7. Solve:  $\frac{x}{3} > \frac{x}{2} + 1$ ,  $x \in \mathbb{R}$
8. Solve  $3(1 - x) < 2(x + 4)$ ,  $x \in \mathbb{R}$  and represent on number line.

## 3 MARKS QUESTIONS

**(Knowledge)**

1. The marks obtained by a student of class in first and second term are 62 and 48 respectively. Find the minimum marks he should get in the annual examination to have an average of atleast 60 marks?
2. Find all pair of consecutive odd natural numbers, both of which are larger than 10, such that their sum is less than 40.
3. Find all the pairs of consecutive even pair of number both of which are larger than 5, such that their sum is less than 28.
4. The longest side of a triangle is 3 times the shorter side and the third side is 2 cm shorter than the largest side. If the perimeter of the triangle is atleast 61 cm. Find the minimum length of the shortest side.

## BASIC MATHEMATICS

5. Find all pair of consecutive even integers which are greater than 5 and their sum must be less than 23.
6. 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% of acid content. (Water contains 0% of acid).
7. A solution is to be kept between  $68^{\circ}\text{F}$  and  $77^{\circ}\text{F}$ . What is the range in temperature in degree celsius (C) if the celsius / Fahrenheit conversion formula is given by  $F = \frac{9}{5}C + 32$ ?
8. Solve:  $3x + 4y \leq 12$  and  $2x + y \geq 6$  graphically.
9. Solve:  $x + 2y \leq 8$  and  $2x + y \leq 8$  graphically.
10. Solve the system of linear inequation graphically  $2x + y \geq 8$ ,  $x + y \geq 10$ .
11. Solve the system of linear inequation graphically  $3x + 4y \geq 12$ ,  $4x + y \geq 8$ .
12. Solve the system of linear inequation graphically  $x + y \leq 6$ ,  $x + y \leq 4$ .
13. Solve the system of linear inequation graphically  $2x - y < 1$ ,  $x - 2y < -1$ .
14. Solve the system of linear inequation graphically  $x + y \geq 5$ ,  $x - y \leq 3$ .

\*\*\*\*\*