LINEAR INEQUALITIES

1. Which of the following is the solution of the inequality
   $4x + 3 < 5x + 7$?

   a) $(-\infty, -4]$ b) $(-\infty, 4)$ c) $[-4, \infty)$ d) $(-4, \infty)$

2. Solve: $3(1 - x) < 2(x + 4)$. Also represent the solutions on number line.

3. Solve the inequality $\frac{4-3x}{2} \geq \frac{1-x}{4} - 2$.

4. Solve $-4x > 30$, when (i) $x \in Z$ (ii) $x \in R$

5. Solve $3x - 2 < 2x + 1$ when x is a real number. Mark the solution on a number line.

6. Which of the following is the solution of the inequality $4x + 3 < 5x + 7$?

   a. $(-\infty,-4]$ b. $(-\infty,4)$ c. $[-4,\infty)$ d. $(-4,\infty)$

7. Find all pairs of consecutive even positive integers, both of which are larger than 5, such that their sum is less than 23.

8. To get A grade in a course, one should obtain an average of at least 90 marks in 5 examinations each out of 100. Sunitha got 87, 92, 94, 95 in first four examinations. Find the minimum marks she should get in the 5th examination to get A grade?

9. The longest side of a triangle is 3 times the shortest side and the third side is 2 cm shorter than the longest side. If the perimeter of the triangle is at least 61 cm, find the minimum length of the Shortest side.

10. Find all pairs of consecutive even positive integers, both of which are larger than 5, such that their sum is less than 23.

11. Arathi took 3 examinations in a year. The marks obtained by her in the second and third examinations are more than 5 and 10 respectively than in the first examination. If her average mark is at least 80 find the minimum mark that she should get in the first examination?