Saitech Informatics

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LINEAR INEQUALITY

Class 11 - Mathematics

Time Allowed: 1 hour and 30 minutes **Maximum Marks: 45**

1. Find the solution set of the inequation $\frac{|x-2|}{(x-2)} < 0, x \neq 2$ **[1]**
2. Solve inequation and represent the solution set on the number line: 5x + 2 < 17 where $x \in Z$ **[1]**
3. Solve 30 x < 200 when x is a natural number. **[1]**
4. Solve $\frac{3}{x-2} < 1$ When $x \in R$ **[1]**
5. Solve inequation and represent the solution set on the number line: 5x + 2 < 17 where $x \in R$ **[1]**
6. Solve the given system of equations in R. 2x + 6 $\geq$ 0 , 4x - 7 < 0. **[1]**
7. Solve: 24x < 100, when x is a natural number. **[1]**
8. Solve: 12x < 50, when x ∈ R. **[1]**
9. Solve $\frac{|x-3|}{x-3} < 0, x \in R$ **[1]**
10. Solve: 24x < 100, when x is an integer. **[1]**
11. Solve system of linear inequation: 1 < lx - 2l < 3 **[3]**
12. To receive grade A in a course one must obtain an average of 90 marks or more in five papers, each of 100 marks. If Tanvy scored 89, 93, 95 and 91 marks in first four papers, find the minimum marks that she must score in the last paper to get grade A in the course. **[3]**
13. Solve the inequality $\frac{(2x-1)}{3} \geq \frac{(3x-2)}{4} - \frac{(2-x)}{5}$ for real x. **[3]**
14. 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. **[3]**
15. Solve 3x + 8 > 2 when **[3]**

    (i) x is integer

    (ii) x is a real number
16. Solve the following system of linear inequalities. **[5]**

    2(2x + 3) - 10 < 6(x - 2)

    and $\frac{2x-3}{4} + 6 \geq 2 + \frac{4x}{3}$
17. Solve for x, $\frac{|x+3|+x}{x+2} > 1$ **[5]**
18. Solve the following system of linear inequalities **[5]**

    - 2 - $\frac{x}{4} \geq \frac{1+x}{3}$ and 3 - x < 4(x-3)
19. Solve $|x+1| + |x| > 3, x \in R$. **[5]**