CLASS X - MATHEMATICS – CHAPTER 06

LINEAR INEQUALITIES

Name: Date:

Q01. Solve $\frac{3x-4}{2} \geq \frac{x+1}{4} - 1$

Q02. Solve 3x + 8 >2 when x is a real number.

Q03. Solve the inequality $\frac{x}{4} < \frac{5x-2}{3} - \frac{7x-3}{5}$

Q04. Solve 3x –6 ≥ 0 graphically.

Q05. Ravi obtained 70 and 75 mark in first unit test. Find the minimum marks he should get in the third test to have an average of at least 60 marks.

Q06. A plumber can be paid under two schemes as given below.

I: Rs 600 and Rs 50 per hr. II: Rs 170 per hr.

If the job takes n hr. for what values of n does the scheme I gives the plumber the better wages.

Q07. IQ of a person is given by the formula IQ = $\frac{MA}{CA} \times 100$ Where MA is mental age and CA is chronological age. If 80 ≤ IQ ≤ 140 for a group of 12yr old children, find the range of their mental age.

Q08. Solve graphically 4x + 3y ≤ 60, y ≥ 2x, x ≥ 3, x.y ≥ 0

Q09. If 4x > −16 then x [__] −4.

Q10. Solve 5x – 3 < 3x + 1 when x is an integer.

Q11. Solve the inequality 1/2[$\frac{3x}{5}$ + 4] ≥ $\frac{1}{3}$ (x – 6)

Q12. Solve 3x + 2y > 6 graphically.

Q13. Find all pairs of consecutive odd natural no. both of which are larger than 10such that their sum is less than 40.

Q14. A company manufactures cassettes and its cost equation for a week is C = 300 + 1.5 x and its revenue equation is R = 2 x, where x is the no. of cassettes sold in a week. How many cassettes must be sold by the company to get some profit?

Q15. A manufacturer has 600 litre of a 12% solution of acid. How many litres of a 30% acid solution must be added to it so that acid content in the resulting mixture will be more than 15% but less than 18%.

Q16. Solve graphically x – 2y ≤ 3 ,3x + 4y ≥ 12, x ≥ 0, y ≥ 1

Q17. Solution set of the in inequations 2x – 1 ≤ 3 and 3x + 1 ≥ −5 is.

Q18. Solve 7x + 3 < 5x + 9. Show the graph of the solution on number line.

Q19. Solve the inequality $\frac{2x-1}{3} \geq \frac{3x-2}{4} - \frac{2-x}{5}$

Q20. Solve the inequalities graphically 3x + 4y ≤ 12.

Q21. The longest side of a triangle is 3 times the shortest side and the third side is 2cm shorter than the longest side. If the perimeter of the Δ is at least 61 cm. Find the minimum length of the shortest side.

Q22. In drilling world's deepest hole it was found that the temperature T in degree Celsius, x km below the surface of earth was given by T = 30 + 25(x -3), 3< x<15 .At what depth will the temperature between 200°c and 300°c.

Q23. A solution of 8% boric acid is to be diluted by adding a 2% boric acid solution to it. The resulting mixture is to be more than 4% but less than 6% boric acid. If we have 640 litres of the 8% solution how many litre of the 2% solution will have to be added.

Q24. Solve graphically $x + 2y \leq 10$, $x + y \geq 1$, $x - y \leq 0$

Q25. Solve $5x - 3 \leq 3x + 1$ when x is an integer.

Q26. Solve $30x < 200$ when x is a natural number.

Q27. Solve graphically: $x - y \leq 0$

Q28. A man wants to cut three lengths from a single piece of board of length 91 cm.The second length is to be 3 cm longer than the shortest and the third length is to be twice as long as the shortest. What are the possible lengths of the shortest board if the third piece is to be at least 5 cm longer than the second.

Q29. The water acidity in a pool is considered normal when the average Ph reading of three daily measurements is between 7.2 and 7.8 If the first Ph reading are 7.48 and7.85, find the range of Ph value for the third reading that will result in the acidity level being normal.

Q30. 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.

Q31. Solve graphically: $3x + 2y \leq 150$, $x + 4y \leq 80$, $x \leq 15$, $y \geq 0$, $x \geq 0$.