



MATHS

BOOKS - CHHAYA PUBLICATION MATHS (BENGALI ENGLISH)

LINEAR INEQUATIONS

Example

1. Solve: $3x - 7 \leq 5$, when

$$x \in N$$

In each case represent the solution set on real numbers line.

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2. Solve: $3x - 7 \leq 5$, when

$$x \in \mathbb{Z}$$

In each case represent the solution set on real numbers line.

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3. Solve: $3x - 7 \leq 5$, when

$$x \in \mathbb{R}$$

In each case represent the solution set on real numbers line.

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4. Solve and show the solution set on the real number line:

$$3(3x + 2) - 12 \leq 11x - 2$$



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5. Solve the inequations $3(x - 5) < 5x - 7 \leq 3(x + 1)$ and show their graphical presentation.



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6. IF x is an integer and $\frac{8x - 7}{5} \leq x + 2$, find the maximum value of x .

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7. IF $\{x \in R : x > 0\}$, find the solution set of the inequation $\frac{7}{2x} - \frac{5}{7} > \frac{5}{3x} - \frac{2}{3}$. Also represent the solution set on the real number line.

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8. Solve the inequation $\frac{5x}{2} - 5 \geq \frac{19 - 3x}{4}$. Also represent solution set of the inequation on real number line.

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9. Solve the inequation $10 + \frac{11}{4}x \leq 5x + 1$ when

$$x \in \mathbb{N}$$

In each case, represent the solution set on real number line.



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10. Solve the inequation $10 + \frac{11}{4}x \leq 5x + 1$ when

$$x \in \mathbb{Z}$$

In each case, represent the solution set on real number line.



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11. Solve the inequation $10 + \frac{11}{4}x \leq 5x + 1$ when $x \in R$

In each case, represent the solution set on real number line.



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12. Solve: $3(x - 3) < 2x - 5 \leq 5x + 1$ where $x \in R$.

Also represent the solution set on real number line.



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13. Solve: $3x + 2 > x - \frac{5 - x}{2} > 2$ where $x \in R$.



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14. Solve: $\frac{x-4}{x+3} > 0$ (Where $x \in R$ and $x \neq 5$) and represent the solution set on real number line.

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15. Solve: $\frac{x+2}{x-5} < 0$ (Where $x \in R$ and $x \neq 5$) and represent the solution set on real number line.

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16. Solve: $\frac{4}{x-3} > 2$ (where $x \in R$ and $x \neq 3$), represent the solution set on real number line.



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17. Solve the following system of inequation :

$$\frac{2x - 1}{5x + 2} \geq \frac{1}{3} \text{ and } \frac{x}{4x + 1} \leq \frac{1}{2}, \text{ where } x \in R \text{ and } x \neq \frac{2}{5}, x \neq -\frac{1}{4}$$

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18. Represent the solution set of the following system of inequation on real number line and hence find their common solution set.

$$3(3x - 2) > 2(x + 2) \text{ and } x - \frac{x - 4}{3} > 3 \text{ when } x \in R.$$

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19. Show that the solution set of the following system of inequations is the interval $(2,4)$.

$$x - 5 < 7 - 2x \text{ and } 3 - 4x \leq x - 7 \text{ where } x \in R.$$



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20. Prove that the following system of inequations has no solution .

$$\frac{x}{2} - \frac{15}{4} \geq x - \frac{21 - x}{3} \text{ and } 3x + 4 > 2x + 9 \text{ where } x \in R.$$



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21. Solve: $2(x + 2) > 3x + 1$ and $x + 5 > 1 - 3x$ where $x \in R$.



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22. Solve: $-9 \leq 5x + 1 \leq 26$ when $x \in R$.

Show the solution set on real number line.



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23. Solve: $|x| \leq 3$ and represent the solution set on real number line.



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24. Solve: $|x| \geq 3$ and represent the solution set on real number line.



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25. Solve: $|2x - 3| \leq 5, x \in R$. Also represent the solution set on real number line.



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26. Solve: $|x + 2| \geq 3$ where $x \in R$. Also represent the solution set on real number line.



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27. Solve: $\frac{3}{|x+1|} > 4$ where $x \in R$ and $x \neq -1$.



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28. Solve: $1 \leq |x+2| \leq 4$ where $x \in R$.



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29. Solve: $\frac{|x|-2}{|x|-3} \geq 0$ $x \in R$ and $x \neq 3$.



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30. Solve the following system of inequations:

$$|x| \geq 3 \text{ and } |x - 2| \leq 6$$



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31. Solve: $\frac{2}{|x| - 3} \leq \frac{1}{2}$ where $x \in R$ and $x \neq \pm 3$.



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32. Solve: $\frac{|x + 1| + 2x + 3}{x + 3} > 2$, $x \in R$ and $x \neq -3$.



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33. Solve: $|x - 1| + |x - 2| + |x - 3| \geq 6$ where $x \in R$.



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34. Solve: $\frac{|x + 2|}{x} < 3$ where $x \in R$ and $x \neq 0$.



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35. Let x and $x+2$ be two consecutive even positive integers, such that $x > 12$ and the sum of the integers is less than 39. Find all possible pairs of such integers.



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36. Find all possible pairs of consecutive odd natural numbers such that each of them is smaller than 20 and their sum is greater than 32.



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37. The formula of IQ of a person is given below:

$$IQ = \frac{m}{c} \times 100$$

where m is mental age and c is chronological age. If $80 \leq IQ \leq 140$ for a group of 12-year children, find the range of their mental age.



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38. A manufacture's cost function $C(x)$ and revenue function $R(x)$ of x units of a product are respectively given by

$$C(x) = 3x + 250 \text{ and } R(x) = 8x + 30$$

Find the number of products the manufacture must sell to earn some profit.



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39. To obtain grade A^+ in an examination a student must score an average of 90 marks or more in five papers each of 100 marks. If his marks in first four papers be 87, 89, 95, 90, then find the minimum marks he should score in fifth paper if he wants to achieve grade A^+ .

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40. The temperature of a valuable medicine solution is to be kept between 77°F and 104°F . Find the range of temperature in degree Celcius, given that the conversion formula of Celcius (C)and Fahrenheit (F) is

$$\frac{C}{5} = \frac{F - 32}{9}$$

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41. 1050 litres of an acid solution 40 % acid. Find the range of water in litres to be added with this acid solution of water in litres so that the resulting mixture will have more than 25 % but less than 35 % acid.

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42. Suppose that sum divided among three boys does not exceed Rs.87. The second boy gets Rs.7 more than the first and the third boy receives twice the sum received by the first. If the third boy receives at least Rs.8 more than the second boy , then find the possible amount received by the first boy.

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43. Solve the following inequations graphically in xy -plane:

$$2x - 5 \geq 0$$

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44. Solve the following inequations graphically in xy -plane:

$$y - 3 < 0$$

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45. Solve the following inequations graphically in xy -plane:

$$4x + 8 > 0$$

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46. Solve the following inequations graphically in xy -plane:

$$2y + 7 \leq 0$$



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47. Draw the graphs of solutions sets of the following inequations:

$$x + 2y - 3 \leq 0$$



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48. Draw the graphs of solutions sets of the following inequations:

$$5x - 2y + 10 > 0$$



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49. Draw the graph showing the solution set of the inequality $4x - 3y \geq 5$.



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50. Exhibit graphically the solution set of the following system of inequations:

$$6x + 5y \leq 30, x \geq 1 \text{ and } y \leq 2$$



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51. Find graphically the solution set of the following linear inequations:

$$2x + 5y \leq 40, x + y \leq 11, x \geq 0, y \geq 0$$



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52. Exhibit graphically the solution set of the following system of linear inequations:

$$x - 2y \leq 2, x + y \geq 3, -2x + y \leq 4, x \geq 0, y \geq 0$$



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53. IF x and y are positive integers or zero, find the solution set of the inequation $3x + 4y \leq 6$.



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54. Find the solution set of the inequation

$$x^2 - 8x + 12 > 0, \text{ when } x \in N.$$



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Exercise 6 Multiple Choice Question

1. IF $x \in N$ and $-5 < 2x - 7 < 1$, then the values of x is-

A. $2 \leq x \leq 4$

B. $2 \leq x < 4$

C. $2 < x \leq 4$

D. 2 and 3

Answer: D



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2. IF x is an integer which is a perfect square and

$7 \leq 2x - 3 < 17$, then x is-

A. 9

B. 4

C. 16

D. 25

Answer: A



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3. IF $x \in N$ and $0 \leq \frac{2x - 5}{2} \leq 7$, then the maximum and minimum values of x are-

A. 9,3 respectively

B. 9,4 respectively

C. 8,3 respectively

D. none of these

Answer: A



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4. IF x is an integer, then the solution set of the inequation $-x^2 + 7x - 6 > 0$ is-

A. $\{2,4\}$

B. $\{3,5\}$

C. $\{2,3,4,5\}$

D. $\{4,5\}$

Answer: C



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5. Solution set of the inequation $\frac{2x + 5}{7} > \frac{x + 3}{4}$

(where $x < 5$ is an integer) is-

A. {2,3,4}

B. {1,3,4}

C. {1,2,3}

D. {1,2,3,4}

Answer: A



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6. Solution set of the inequation $-2 \leq \frac{3x - 1}{2} \leq 1$ (

where $x \in \mathbb{Z}$) is-

A. $\{1,2,-1\}$

B. $\{1,0,-3\}$

C. $\{-1,0,1\}$

D. $\{1,-1,0\}$

Answer: C



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7. If $x-y=3$ and $x + y \geq 9$ then the minimum value of x is-

A. 2

B. 4

C. 5

D. 6

Answer: D



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8. If x and y are positive integers, the the solution sets of the inequations $x \leq 3$, $y \leq 2$ and $5x + 6y \leq 21$ are-

A. 

B. 

C. 

D. 

Answer: B



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Exercise 6 Very Short Answer Type Question

1. $4x \leq 21$ when $x \in N$



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2. $4x \leq 21$ when $x \in Z$



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3. $\frac{5}{6}x + 9 \leq 2(x + 1)$ when $x \in N$



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4. $\frac{5}{6}x + 9 \leq 2(x + 1)$ when $x \in R$

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5. $\frac{2x + 3}{4} + 2 \leq \frac{1}{4} + \frac{4x}{3}, x \in R$

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6. $\frac{x}{4} + \frac{2 - 5x}{3} < \frac{3 - 7x}{5}, x \in R$

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$$7. 2x + 3 \leq 4(x - 2), x \in R$$



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$$8. \frac{3}{2x} + \frac{1}{3} \geq \frac{2}{3x} + \frac{1}{2} (x > 0), x \in R$$



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$$9. \frac{1}{3}(8x - 5) \leq \frac{1}{2}(5x - 2), x \in R$$



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$$10. \frac{3x}{4} - \frac{4x - 3}{5} > 1, x \in R$$



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$$11. 0 < \frac{2x - 5}{2} < 7, x \in R$$

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$$12. 5(x - 1) \leq 7x + 1 < 8, x \in R$$

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$$13. 7 - \frac{x}{4} \geq 2(x + 2), x \in R$$

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14. $\frac{x-2}{3} \leq \frac{x+1}{4}, x \in R$



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15. $\frac{1}{x+2} \leq 0$



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16. $\frac{1}{2x-1} > 0, x \in R$



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17. $\frac{x+3}{x+4} > 1, x \in R$



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18. $\frac{x-1}{x-4} > 0 (x \neq 4), x \in R$

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19. $\frac{x-1}{x+4} \geq 3, x \neq -4 \text{ and } x \in R$

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20. $\frac{3x+5}{x+2} \geq 4, x \neq -2 \text{ and } x \in R$

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21. $\frac{5}{x-1} > 2, x \neq 1 \text{ and } x \in R$



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22. $\frac{2x-3}{3x-2} > 0, x \neq \frac{2}{3} \text{ and } x \in R$



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23. $\frac{4(x+3)}{4-x} \leq 3, x \neq 4 \text{ and } x \in R$



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24. $\frac{x}{x-4} > \frac{1}{3}, x \neq 4 \text{ and } x \in R$



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$$25. \frac{x+3}{x-1} \leq \frac{1}{2}, x \neq 1 \text{ and } x \in R$$



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$$26. \frac{x+1}{3} \leq \frac{2x-1}{4}, x \in R$$



Watch Video Solution

$$27. \frac{2x+5}{x+3} \geq 1, x \neq -3 \text{ and } x \in R$$



Watch Video Solution

28. $\frac{x}{2x+1} \geq \frac{1}{4}, x \neq \frac{1}{2} \text{ and } x \in R$



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29. Solve the following inequations graphically in xy -plane:

$$2x - 1 \geq 0$$



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30. Solve the following inequations graphically in xy -plane:

$$2y + 1 \geq 0$$



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31. Solve the following inequations graphically in xy -plane:

$$x + 4 > 0$$

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32. Solve the following inequations graphically in xy -plane:

$$y - 3 > 0$$

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33. Solve the following inequations graphically in xy -plane:

$$x - 2 \leq 0$$



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34. Solve the following inequations graphically in xy -plane:

$$y + 2 \leq 0$$



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35. Solve the following inequations graphically in xy -plane:

$$2y - 3 < 0$$



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36. Solve the following inequations graphically in xy -plane:

$$2x + 7 < 0$$



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37. In each of the following problems find the solution set of the given system of inequations:

$$3(1 - 2x) > 7x + 29 \text{ and } \frac{12 - 5x}{6} < \frac{78 - x}{12}, x \in R$$



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38. In each of the following problems find the solution set of the given system of inequations:

$$\frac{3x + 36}{10} \geq \frac{50 - x}{7} \text{ and } 3(2x + 5) \leq 5x + 18, x \in R$$



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39. In each of the following problems find the solution set of the given system of inequations:

$$\frac{10x}{9} - \frac{4x - 1}{7} > \frac{3x - 2}{5} \quad \text{and}$$
$$\frac{2(x - 1)}{5} - 4x > \frac{1 - 3x}{2} - 24, x \in R$$



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40. In each of the following problems find the solution set of the given system of inequations:

$$\frac{x-1}{2} > x-4 \text{ and } \frac{x+1}{2} > \frac{x+3}{5}, x \in R$$



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41. In each of the following problems find the solution set of the given system of inequations:

$$5(7x+5) < 163 + 6(5x+2) \quad \text{and}$$

$$9x-5 > 2(x+6), x \in R$$



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42. In each of the following problems find the solution set of the given system of inequations:

$$-10 \leq 3x - 4 \leq x + 2, x \in R$$



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43. In each of the following problems find the solution set of the given system of inequations:

$$-8 \leq 4(x + 1) \leq 7, x \in R$$



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Exercise 6 Short Answer Type Question

1. $|x| > 2$



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2. $|x| \leq 2$



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3. $|2x - 3| \leq 1$



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4. $|2x + 5| > 7$



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5. $\frac{3}{|x + 1|} > 2$

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6. $|2 - 3x| \leq 5$

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7. $|5 - 2x| \geq 3$

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8. $|2(4 - x)| < 7$



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9. $\left| \frac{3}{x - 3} \right| > 4, x \neq 3$



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10. $\frac{|x + 4| + 2x}{x + 1} > 2$



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11. $|x - 1| + |x - 2| \geq 4$

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$$12. \frac{1}{2 - |x|} \geq 1 (x \neq \pm 2)$$

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$$13. \frac{|x - 3|}{x - 3} > 0 (x \neq 3)$$

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$$14. \frac{|x| - 5}{|x| - 3} > 0 (x \neq \pm 3)$$

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15. $\frac{|2x - 3|}{|x - 1|} > 3(x \neq 1)$



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16. $\frac{|x - 1|}{x + 2} < (x \neq -2)$



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17. $\left| x + \frac{1}{x} \right| > 2$



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18. $|x - 2| \geq |x - 4|$



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19. Find graphically the solution region of the following inequations:

$$2x + 3y \geq 6$$



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20. Find graphically the solution region of the following inequations:

$$3x + 4y \leq 12$$



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21. Find graphically the solution region of the following inequations:

$$x - 5y + 4 \geq 0$$



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22. Find graphically the solution region of the following inequations:

$$5x - 3y < 10$$



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23. Find graphically the solution region of the following inequations:

$$4x - 3y > 12$$



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24. Find graphically the solution region of the following inequations:

$$2x + 3y + 5 > 0$$



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25. Exhibit graphically the solution set of each of the following system of linear inequations:

$$x \geq 0, y \geq 0, 3x + 4y \leq 12$$



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26. Exhibit graphically the solution set of each of the following system of linear inequations:

$$x \geq 1, y \geq 0, x + y \leq 10$$



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27. Exhibit graphically the solution set of each of the following system of linear inequations:

$$-3 \leq x \leq 5, -5 \leq y \leq 5$$



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28. Exhibit graphically the solution set of each of the following system of linear inequations:

$$3x - 2y \geq 12, 2x - y + 6 \leq 0$$



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29. Exhibit graphically the solution set of each of the following system of linear inequations:

$$x \leq 1, y \leq 2, x - 4y \leq 12$$



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30. Exhibit graphically the solution set of each of the following system of linear inequations:

$$x + y \leq 10, x \geq 1, y \geq 0$$



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31. Exhibit graphically the solution set of each of the following system of linear inequations:

$$y \geq x, x + y \leq 2$$



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32. Exhibit graphically the solution set of each of the following system of linear inequations:

$$x + y \leq 5, 2x - 3y \geq 6, x \geq 2$$



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33. Exhibit graphically the solution set of each of the following system of linear inequations:

$$6x + 5y - 30 \leq 0, x \geq 1, y \leq 2$$



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34. Exhibit graphically the solution set of each of the following system of linear inequations:

$$2x + 5y \geq 10, x \geq 8, y \leq 2$$



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35. Exhibit graphically the solution set of each of the following system of linear inequations:

$$0 \leq x \leq 2, 0 \leq y \leq 3, 2x + y \leq 4$$



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36. Exhibit graphically the solution set of each of the following system of linear inequations:

$$3x + 4y \geq 48, 2x + y \leq 20, x > 0$$



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37. Exhibit graphically the solution set of each of the following system of linear inequations:

$$x + 2y \leq 3, 3x + 4y \geq 12, x \geq 0, y \geq 0$$



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38. Exhibit graphically the solution set of each of the following system of linear inequations:

$$0 \leq x \leq 6, 0 \leq y \leq 5, x + y \geq 1, 7x + 9y \leq 63$$



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39. Show that the solution region represented by the following inequations is a null set:

$$x \geq 0, y \geq 0, 2x - y + 2 \leq 0, x - 2y \geq 0$$



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40. Solve graphically the following system of linear inequations:

$$x - y \leq 1, x + 2y \leq 8, 2x + y \geq 2, x \geq 0, y \geq 0$$



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41. The formula of IQ of a student is given below:

$$IQ = \frac{m}{c} \times 100$$

Where m is mental age and c is chronological age. IF

$10.2 \leq m \leq 16.2$ for a group of 15-year students, find the range of their IQ.



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42. The temperature of a solution is to be kept between $35^{\circ}C$ and $45^{\circ}C$. Find the range of temperature in degree Fahrenheit, given that the conversion formula of Fahrenheit (F) and Celcius (C) is

$$\frac{C}{5} = \frac{F - 32}{9}$$



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43. The temperature of solution is to be kept between $104^{\circ}F$ and $113^{\circ}F$. Find the range of temperature in degree Celcius, given that the conversion formula of Celcius © and Fahrenheit (F) is

$$5F=9C+160$$



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44. A firm produces x units of a product. The cost function $C(x)$ and revenue function $R(x)$ of x unit are given by $C(x)=4(x+200)$ and $R(x)=8(x+55)$. Find the minimum number of product the firm must produce the firm must produce to run as a profitable concern.



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45. Let x and $x+2$ be two consecutive odd natural numbers such that $x < 26$ and their sum is greater than 42. Find all possible pairs of such odd natural numbers.



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46. Find all possible pairs of consecutive even positive integers such that each of them is greater than 15 and their sum is less than 49.



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47. Find all possible pairs of consecutive even natural numbers, both of which are less than 12 and their sum is greater than 17.



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48. The marks scored by a student in Physics, Chemistry and Mathematics are 87, 80 and 89 respectively. Find the

minimum marks he should score in computer science to have an average of at least 86 marks.



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49. To obtain grade A in an examination a student must score an average of 90 marks or more in five papers each of 100 marks. If his marks in first four papers are 82, 92, 94 and 88, then find the minimum marks he should score in fifth paper if he wants to get grade A in the examination.



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50. The water acidity in a pool is considered normal when the average pH reading of three daily measurements is

between 7.1 and 7.8 . IF the first two pH readings are 7.45 and 7.75, find the range of ph value for the third reading that will result in the acidity level being normal.



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51. 2250 litres of an acid solution contain 35 % acid. Find the range of water in litres to be added with this acid solution so that the resulting mixture will have more than 15 % but less than 25 % acid.



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52. The lengths of three sides of a triangle are x cm, $(2x+1)$ cm and $(2x-2)$ cm .If the perimeter of the triangle is

at least 54 cm, find the minimum value of x .



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53. Suppose the sum divided among three men does not exceed Rs.439. The second man receives Rs.39 more than the first and the third man gets twice the sum received by the first man. If third man receives at least Rs.36 more than the second man, then find the maximum sum received by the first man.



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54. The temperature ($t^{\circ}C$) at a depth x km below the surface of the earth is given by

$$t = 32 + 25(x - 3) \text{ where } 3 \leq x \leq 15.$$

Find the range of depth when temperature is between $207^{\circ}C$ and $282^{\circ}C$.



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55. The temperature ($T^{\circ}C$) at a depth x km below the surface of the earth is given by

$$t = 30 + 25(x - 3) \text{ where } 4 \leq x \leq 16.$$

If the depth below the surface of earth is between $9.8km$ and $13.8km$, find the range of temperature.



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56. How many litres of a 35 % acid solution must be added to 500 litres of a 16 % acid solution so that acid content in the resulting mixture may be more than 25 % but less than 30 % ?



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Exercise 6 Long Answer Type Question

1. A manufacturer produces two types of articles A and B. The production cost of an article A is Rs.250 and that of B is Rs.300. His total investment does not exceed Rs.20000 and he can store at most 100 articles. Formulate the given data in the form of inequations and show

graphically the region representing the solution of these inequations.



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2. A man has to spend Rs.16 per km on petrol if he rides his motor-car at 30 km per hour and the cost on petrol rises to Rs.20 per km if he rides his car at 45 km per hour. He has Rs.200 to spend on petrol and desires to travel maximum distance within 2 hours. Formulate the given data in the form of inequations and show graphically the region representing the solution of the inequations.



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3. solve $\frac{dy}{dx} = (x + y)^{\frac{1}{3}}$



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4. A manufacture produces nuts and bolts for industrial machinery. It takes 1 hour of work on machine A and 3 hours on machine B to produce a package of nuts while it takes 3 hours on machine A and 1 hour on machine B to produce a package of bolts. If he operates his machines for at most 12 hours then formulate the given data in the form of inequations and show graphically the region representing the solution of these inequations.



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5. A diet is to contain at least 400 units of carbohydrate, 500 units of fat and 300 units of protein. Foods F_1 contains 10 units of carbohydrate, 20 units of fat and 15 units of protein and food F_2 contains 25 units of carbohydrate, 10 units of fat and 20 units of protein. Formulate the given data in the form of inequations and show graphically the region representing the solution of these inequations.



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6. A person requires at least 10, 12 and 12 units of chemicals A, B and C respectively for his garden. A liquid product contains 5, 2 and 1 units of A, B and C respectively

per jar. A dry product contains 1,2 and 4 units of A,B and C per carton. Formulate the given data in the form of inequations and show graphically the region representing the solution of these inequations.



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Sample Question For Competitive Exams Multiple Correct Answer Type

1. The set of values of x which satisfy the inequation

$$\frac{5x + 8}{4 - x} < 2, \text{ are-}$$

A. $(-\infty, 0)$

B. $(0, -\infty)$

C. $(4, \infty)$

D. $(-\infty, 4)$

Answer: A::C



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2. Find the graph of linear inequation in xy plane

$$2y + 1 \leq 0$$



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3. The region bounded by the inequation $|y - x| \leq 3$ are lying in the quadrant-

A. 1st

B. 2nd

C. 3rd

D. 4th

Answer: A::B::C::D



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4. Two consecutive odd natural numbers, both of which are larger than 10, such that their sum is less than 40, then the numbers are-

A. 11,13

B. 15,13

C. 17,19

D. 17,15

Answer: A::C



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5. The solutions set of the inequation $\frac{|x| - 4}{|x| - 5} \geq 0$ where $x \in R$ and $x \neq \pm 5$, are-

A. $[-4,4]$

B. $(-\infty, -5)$

C. $(5, \infty)$

D. none of these

Answer: A::B::C



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Sample Question For Competitive Exams Integer Answer Type

1. Number of integral solutions of the inequation

$$\frac{x+2}{x^2+1} > \frac{1}{2} \text{ is-}$$



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2. The longest side of a triangle is three times the shortest side and the third side is 2 cm shorter than the longest side. If perimeter of the triangle is at least 61 cm, then the minimum length of the shortest side will be-



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3. The solution of two inequations

$$\frac{2x - 3}{4} - 2 \geq \frac{4x}{2} - 6, 2(2x + 6) < 6(x - 2) + 10, x \in R$$

is-



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4. The solution of the inequation $-4x > 30, x \in N$ is-

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5. The solution of inequation

$$\left| \frac{2}{x-4} \right| > 4, x \neq 4, x \in N \text{ is}$$

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Sample Question For Competitive Exams Matrix Match Type

1. construct 2×2 matrix if $A = [a_{ij}]$ whose elements a_{ij} are given by : $\frac{(i-j)^2}{2}$

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2. Find co-factor of a_{31} for a matrix of order 3×3



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Sample Question For Competitive Exams Comprehension Type

1. Find the graph of linear inequation in xy plane

$$y + 2 \leq 0$$



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2. Find the graph of linear inequation in xy plane

$$x - 2 \leq 0$$



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3. Find the graph of linear inequation in xy plane

$$x + 4 > 0$$

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4. Find the graph of linear inequation in xy plane

$$2x - 1 \geq 0$$

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5. Consider the inequality $9^x - a \cdot 3^x - a + 3 \leq 0$ where

'a' is a real parameter.

The given inequality has at least one negative solution for 'a' lying in-

A. $(-\infty, 2)$

B. $(3, \infty)$

C. $(-2, \infty)$

D. $(2, 3)$

Answer: D



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6. Find the graph of linear inequation in xy plane

$$2y + 7 \leq 0$$



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7. Find the graph of linear inequation in xy plane

$$4x + 8 > 0$$



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Sample Question For Competitive Exams Assertion Reason Type

1. Find the graph of linear inequation in xy plane

$$y - 3 < 0$$



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2. Find the graph of linear inequation in xy plane

$$2x - 5 > 0$$



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