INDIAN SCHOOL AL WADI AL KABIR
DEPARTMENT OF MATHEMATICS 2023 – 2024
Linear Inequality - Work Sheet – Class XI

1	Solve $\frac{3x-4}{2} \geq \frac{x+1}{4} - 1$
2	Solve $3x+8>2$ when x is a real no.
3	Solve the inequality $\frac{x}{4} < \frac{(5x-2)}{3} - \frac{(7x-3)}{5}$
4	Solve $3x-6 \geq 0$ graphically
5	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.
6	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 $80 \leq IQ \leq 140$ for a group of 12yr old children, fond the range of their mental age.
7	Solve $5x-3<3x+1$ when x is an integer.
8	Solve the inequality $\frac{1}{2}\left(\frac{3x}{5}+4\right) \geq \frac{1}{3}(x-6)$
9	Find all pairs of consecutive odd natural no. both of which are larger than 10 such that their sum is less than 40.
10	Solution set of the in inequations $2x-1 \leq 3$ and $3x+1 \geq -5$ is.
11	Solve $7x+3<5x+9$. Show the graph of the solution on number line.
12	Solve the inequality. $\frac{2x-1}{3} \geq \frac{3x-2}{4} - \frac{2-x}{5}$
13	Solve the inequality $\frac{x}{2} \geq \frac{5x-2}{3} - \frac{7x-3}{5}$

14	Solve $5x-3\leq 3x+1$ when x is an integer.
15	Solve $30x<200$ **when** x is a natural no.
16	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.
17	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.
18	How many liters of water will have to be added to 1125 liters of the 45% sol. Of acid so that the resulting mixture will contain more than 25%but less than 30% acid content

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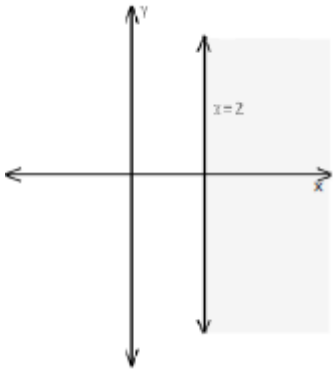
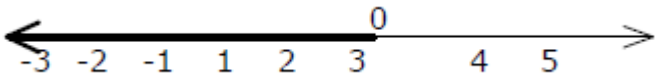
Linear Inequality (Answer Key)

1	$x \geq 1$
2	$(-2, \infty)$
3	$(4, \infty)$
4	
5	$x \geq 135$
6	$9.6 \leq MA \leq 16.8$
7	$x < 2$ .....-4,-3,-2,-1, 0, 1
8	$(-\infty, 120]$
9	$(11,13)$ $(13,15)$, $(15,17)$ $(17,19)$
10	$-2 \leq x \leq 2$
11	
12	$(-\infty, 2]$
13	$x \geq -\frac{2}{7}$
14	$\{..., -3, -2, -1, 0, 1, 2\}$
15	Solution set of the inequality $\{1, 2, 3, 4, 5, 6\}$
16	$x \in [8, 22]$
17	$6.27 < x < 7.07$
18	$900 > x > 562.5$