HAL GNANAJYOTI SCHOOL

WORKSHEET : LINEAR INEQUATIONS

Std : 10   **Sub : Mathematics**

TICK THE CORRECT OPTION.

1) If $x \in N$, the solution set of $3x - 4 \le 11$ is
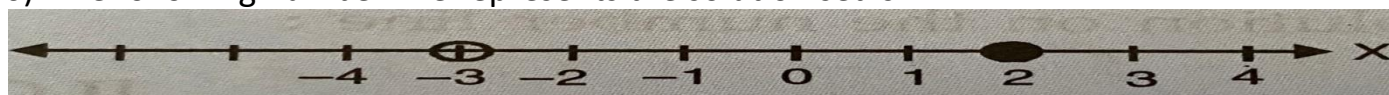   (a) $\{0,1,2,3,4\}$ (b) $\{0,1,2,3,4,5\}$ (c) $\{1,2,3,4,\}$ (d)$\{1,2,3,4,5\}$ ✓

2) If $x \in W$, the solution set of $-2 \le \frac{1}{2} - \frac{2x}{3} \le 1\frac{5}{6}$, is
   (a) $\{1,2,3\}$ (b) $\{0,1,2,3\}$ ✓   (c) $\{0,1,2,3,4\}$ (d) $\{0,1,2,3,4\}$

3) If $x \in R$, the solution set of $-\frac{2}{3} < \frac{x}{3} + 2 \le \frac{2}{3}$, is
   (a) $\{x : 4 < x \le 8, x \in R\}$ (b) $\{x : 8 > x \ge 4, x \in R\}$
   (c) $\{x : 8 \ge x > 4, x \in R\}$ (d) $\{x : -8 < x \le -4, x \in R\}$ ✓

4) If $x \in I$, the solution set of $1 < 3x + 5 \le 11$, is
   (a) $\{-1, 0,1,2\}$ (b) $\{1,2,3\}$ (c) $\{-1,0,1\}$
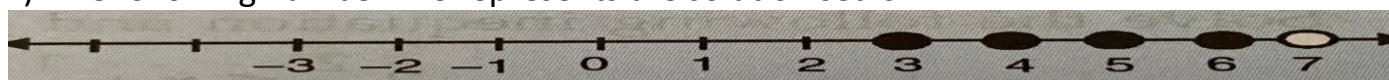   (d) $\left\{x : x \in R, -\frac{4}{3} < x \le 2\right\}$ ✓

5) If $x \in Z$, the solution set of $2 + 4x < 2x - 5 \le 3x$, is
   (a) $\{-4, -3, -2, -1\}$ (b) $\{-5, -4\}$ ✓   (c) $\{-5, -4, -3\}$ (d)$\{5,4\}$

6) The following number line represents the solution set is

   (a) $\{-2, -1, 0, 1\}$ (b) $\{-3, -2, -1, 0, 1\}$
   (c) $\{-2, -1, 0, 1, 2\}$ (d) $\{x : x \in R, -3 < x \le 2\}$ ✓

7) The following number line represents the solution set is

(a) $\{3,4,5,6,7\}$ (b) $\{3,4,5,6\}$ ✓
(c) $\{x : x \in R, x < 7\}$ (d)$\{x : x \in R, x \le 7\}$

8) The solution of the inequation $2x - 5 \le 5x + 4 < 11$, where $x \in I$, is
   (a) $\{-3, -1,0,1\}$ (b) $\{-4,3,0,1\}$
   (c) $\{-3, -2, -1,0,1\}$ ✓   (d) $\{-2, -1,0,1\}$

9) The solution set of the inequation $3 \geq \frac{x-4}{2} + \frac{x}{3} \geq 2, x \in I$, is

(a) {3,4,5} (b) {5,6} (c) {4,5,6} (d) {5,6,7}

10) The solution of the inequation $-1 \leq 3 + 4x < 23, x \in R$, is

(a) $\{x: x \in R, -1 \leq x < 5\}$ (b) $\{x: x \in R, 1 \leq x < 5\}$
(c) $\{x: x \in R, -1 \leq x < -5\}$ (d) $\{x: x \in R, 1 \leq x < -5\}$

11) If x ∈ { − 3, − 1, 0, 1, 3, 5}, then the solution set of the inequation 3x − 2 ≤ 8 is

(a) { -3, -1, 1, 3} (b) { -3, -1, 0, 1, 3}
(c) { -3, -2, -1, 0, 1, 2, 3} (d) { -3, -2, -1, 0, 1, 2}

12) If x ∈ W, then the solution set of the inequation 3x + 11 ≥ x + 8 is
(a) { -2, -1, 0, 1, 2, ...} (b) { -1, 0, 1, 2, ...}
(c) {0, 1, 2, 3, ...} (d) {x : x ∈ R, x ≥ $-\frac{3}{2}$}

13) If x ∈ W, then the solution set of the inequation 5 − 4x ≤ 2 − 3x is
(a) {..., -2, -1, 0, 1, 2, 3} (b) {3,4,5,......}
(c) {0, 1, 2, 3} (d) {x : x ∈ R, x ≤ 3}

14) If x ∈ I, then the solution set of the inequation 1 < 3x + 5 ≤ 11 is
(a) { -1, 0, 1, 2} (b) { -2, -1, 0, 1}
(c) { -1, 0, 1} (d) {x : x ∈ R, $-\frac{4}{3}$ < x ≤ 2}

15) If x ∈ R, the solution set of 6 ≤ − 3 (2x − 4) < 12 is
(a) {x : x ∈ R, 0 < x ≤ 1} (b) {x : x ∈ R, 0 ≤ x < 1}
(c) {0, 1} (d) none of these

16) Identify the correct solution set of the following number line.

-4 -3 -2 -1 0 1 2 3 4 5

(a) $\{x : x \in Z, -4 < x < 5\}$ (b) $\{x : x \in Z, -4 \leq x \leq 5\}$
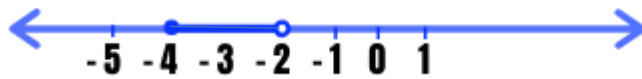(c) $\{x : x \in R, -4 \leq x \leq 5\}$ (d) $\{x : x \in R, -4 < x < 5\}$

17) Find the range of values of x, which satisfy the following inequation.

$$-\frac{1}{5} \leq \frac{3x}{10} + 1 < \frac{2}{5}, \; x \in R$$

(a) $\{x : x \in R, -4 \leq x < -2\}$ (b) $\{x : x \in R, -4 \leq x \leq -2\}$

(c) $\{x : x \in R, -4 < x \leq -2\}$ (d) $\{x : x \in R, -4 < x < -2\}$

18) Choose the correct solution set of the following number line:

(a) $\{x : x \in R, -5 < x < -1\}$ (b) $\{x : x \in R, -5 \leq x < -1\}$

(c) $\{x : x \in R, -4 \leq x < -2\}$ (d) $\{x : x \in R, -4 \leq x \leq -2\}$

19) If a < b then the sign used between a ÷ -5 _____ b ÷ -5 (if written respectively) is of

(a) <   (b) >   (c) =   (d) ≥

20) By solving the inequality 18 - y > 9, the answer will be

(a) y > 9   (b) y < 9   (c) y < 5   (d) y > 1

21) If x ∈ W , then the solution set of the inequation -x ≥ -5 , is

(a) {6,7,8,9,...}   (b) {1,2,3,4}   (c) {0,1,2,3,4,5}   (d){-5,-4.-3,....}

22) If 2x – 8 ≥ 4 , x ∈ {1,2,3,...,10} , then the solution set has:

(a) 5 elements   (b) 6 elements   (c) 4 elements   (d) 3 elements

23) By solving 2(x + 3) < 3(x + 4)

(a) x < -4   (b) x < -6   (c) x > -6   (d) x > 2

24) The solution of : -9 + 3x ≤ 8x + 6 ≤ 14 , x ∈ Z is

(a) { x : -3 ≤ x ≤ 1 , x ∈ R }   (b) { x : -3 ≤ x ≤ 1 }

(c) { x : -5 ≤ x ≤ 1 , x ∈ Z }   (d) { x : -3 ≤ x ≤ 1 , x ∈ Z }

25) Solve the following inequation and represent the solution set on the number line:

$$4x - 19 < \frac{3x}{5} - 2 \leq -\frac{2}{5} + x, \; x \in R$$

(a) { x : -4 ≤ x ≤ 5 , x ∈ R }   (b) { x : -4 ≤ x < 5 , x ∈ R }

(c) { x : -5 ≤ x ≤ 2.5 , x ∈ R }   (d) { x : -3 ≤ x ≤ 5, x ∈ Z}

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