General instructions for Students: Whatever be the notes provided, everything must be copied in the Mathematics copy and then do the HOMEWORK in the same copy.

CLASS – 8 12. LINEAR EQUATIONS AND INEQUALITIES IN ONE VARIABLE MATHS

Exercise – 12.3

1. If the replacement set = $\{-7, -5, -3, -1, 0, 1, 3\}$, find the solution set of :

(ii) $x < -2$

Solution : $x = \{-7, -5, -3\}$ Ans.

(v) $-5 < x \leq 5$

Solution : $x = \{-3, -1, 0, 1, 3\}$ Ans.

5. If the replacement set = $\{-6, -3, 0, 3, 6, 9, 12\}$, find the truth set of the following: (i) $2x - 3 > 7$

Solution : Given $2x - 3 > 7$

$\Rightarrow$ $2x - 3 + 3 > 7 + 3$ **Adding boths sides by 3**

$\Rightarrow$ $\frac{2x}{2} > \frac{10}{2}$ **Dividing both sides by 2**

$\Rightarrow$ $x > 5$

Hence, the solution set = $\{6, 9, 12\}$ Ans.

6. Solve the inequation: (i) $4x + 1 < 17$, $x \in N$

Solution : Given $4x + 1 < 17$, $x \in N$

$\Rightarrow$ $4x + 1 - 1 < 17 - 1$ **Subtracting 1 from both sides**

$\Rightarrow$ $\frac{4x}{4} < \frac{16}{4}$ **Dividing both sides by 4**

$\Rightarrow$ $x < 4$

Hence, the solution set $= \{1, 2, 3\}$ Ans.

7. Solve the inequation: (ii) $\frac{2y+1}{3} + 1 \leq 3$, $y \in W$

Solution : Here $\frac{2y+1}{3} + 1 \leq 3$

$\Rightarrow$ $\frac{2y+1}{3} + 1 - 1 \leq 3 - 1$ **Subtracting 1 from both sides**

$\Rightarrow \frac{2y+1}{3} \times 3 \leq 2 \times 3$ Multiplying both sides by 3

$\Rightarrow 2y + 1 - 1 \leq 6 - 1$ Subtracting 1 from both sides

$\Rightarrow \frac{2y}{2} \leq \frac{5}{2}$ Dividing both sides by 2

$\Rightarrow y \leq 2\frac{1}{2}$

Hence, the solution set $= \{ 0, 1, 2 \}$ Ans.

10. Solve $\frac{x}{3} + \frac{1}{4} < \frac{x}{6} + \frac{1}{2}$ $x \in W$. Also represent its solution on the number line.

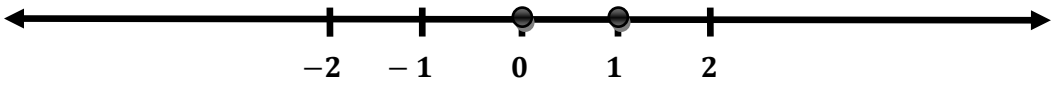
Solution : Here $\frac{x}{3} + \frac{1}{4} < \frac{x}{6} + \frac{1}{2}$

$\Rightarrow \frac{x}{3} - \frac{x}{6} < \frac{1}{2} - \frac{1}{4}$

$\Rightarrow \frac{x}{6} \times 6 < \frac{1}{4} \times 6$ Multiplying both sides by 3

$\Rightarrow x < \frac{3}{2}$

Hence, the solution set $= \{ 0, 1 \}$ Ans.



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HOMEWORK

EXERCISE – 12.3

QUESTION NUMBERS : 1(iii), (v); 2(i), 5(ii), (iii); 6(iii), 7(i), 8(iii) and 11(i)