



CLASS : X

Subject: Mathematics

Date: 22/04/20

Topic: Linear In equation

Time Limit: 1 hour

Worksheet No. :4

[Copy the questions and solve them on a sheet of paper date wise. Keep the worksheets ready in a file to be submitted on the opening day.]

Concept

i)

$$3 > 2 \Rightarrow \frac{1}{3} < \frac{1}{2}$$

ii)

$$3 > 2 \Rightarrow -3 < -2$$

Replacement set is the set of values from which value of the variable of linear inequalities is to be chosen .e.g if replacement set is w =the whole number of set then from $5x+4 \leq 24$

$$\text{We get } 5x \leq 24 - 4 \Rightarrow 5x \leq 20 \Rightarrow x \leq 4$$

Hence solution set is $\{0,1,2,3,4\}$

iv) solve

$$\frac{x}{2} - 5 \leq \frac{x}{3} - 4, \text{ where } x \text{ is +ve odd integer.}$$

$$\frac{x}{2} - \frac{x}{3} \leq 5 - 4$$

$\Rightarrow x/1 \Rightarrow x \leq 6$ so solution set is $\{1,3,5\}$

v) Given x belongs to Integer set, find the solution of $-5 \leq 2x - 3 < x + 2$

$$\begin{array}{l|l} -5 \leq 2x - 3 & 2x - 3 < x + 2 \\ \Rightarrow -5 + 3 \leq 2x & 2x - x < 3 + 2 \\ \Rightarrow -2 \leq 2x & x < 5 \\ \Rightarrow 2x \geq -2A & \text{as } x \text{ belongs to integer set so} \\ \Rightarrow x \geq -1 & \text{solution set } = \{-1, 0, 1, 2, 3, 4\} \end{array}$$

Exercise

1) If replacement set is 'w' (the whole number set) so solve

- i) $3x - 1 > 8$
- ii) $7 - 3x \geq -1/2$
- iii) $18 \leq 3x - 2$
- iv) $x - 3/2 < 3/2 - x$

2) If y belongs to Integers set solve $2y - 3 < y + 1 \leq 4y + 7$

3) If replacement set is N =natural numbers then solve

- i) $3x - 2 < 19 - 4x$
- ii) $3 - 2x \geq x - 12$

4) If replacement set is real number set then solve

- i) $-4x \geq -16$
- ii) $8 - 3x \leq 20$
- iii) $5 + x/4 > x/5 + 9$
- v) $(x + 3)/8 < (x - 3)/5$

5) If replacement set is Integer between -6 and 8 , find the solution

- of i) $6x - 1 \geq 9 + x$
- ii) $15 - 3x > x - 3$

... to be continued.