STEPPING STONE SCHOOL (HIGH)

CLASS: X

Worksheet - V

Subject: Mathematics **Date: 23-04-2020**

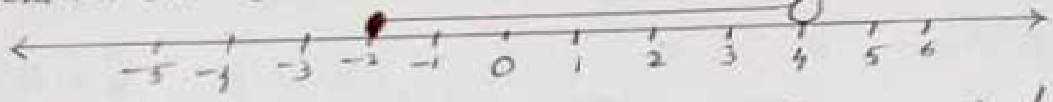
Time Limit: 30 mins

Topic – LINEAR INEQUATION – 2

- Representation of Solution Set on the number line

i) If x belongs to R = real no. set, then represent $\{x : -2 \leq x < 4\}$

Ans:→ Solution Set is 'Continuous'



Note closed end denotes • and open end denotes ○

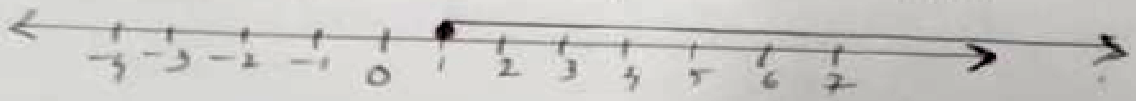
ii) Represent $\{x : -2 < x \leq 4\}$ on the number line if x belongs to 'Z' ie integer Set.

Ans→ Solution Set is discrete ie $\{-2, -1, 0, 1, 2, 3, 4\}$

Note – Make 'bold Circles' to the points given only.

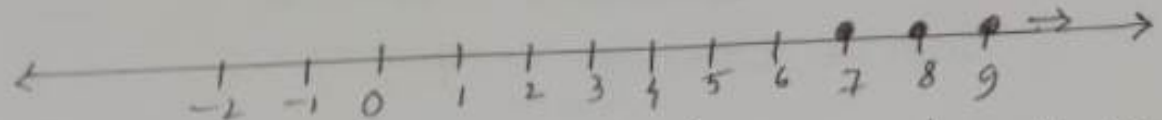
iii) Solve and graph the Solution Set of $3x + 6 \geq 9$.

Ans– $3x + 6 \geq 9 \Rightarrow 3x \geq 3 \Rightarrow x \geq 1$ where $x \in R$



iv) Represent the Solution Set from $x > 6\frac{2}{3}$; $x \in W$

Ans → Solution Set = $\{7, 8, 9, \cdots\cdots\}$



Note - This set is Countably infinite and discrete set. So more than 7 and equal to '7' all are to be attained but it will go infinite.

Exercise: (1) Solve and graph from: $-2\frac{2}{3} \leq x + \frac{1}{3} < 3\frac{1}{3}$ where $x \in R$.

(2) Given $A = \{x : -1 < x \leq 5;\ x \in R\}$ and $B = \{x : -4 \leq x < 3,\ \text{where } x \in R\}$

Solve and graph in number lines i) $A \cap B$ ii) $A' \cap B$ iii) $A - B$.

(3) Solve and graph : $2x - 5 \leq 5x + 4 < 11$ where $x \in I$

(4) Solve and graph : $-2 \leq \frac{1}{2} - \frac{2x}{3} \leq 1\frac{5}{6}$, $x \in N$

(5) Solve and graph : $-2\frac{5}{6} < \frac{1}{2} - \frac{2x}{3} \leq 2$, ; $x \in W$

(6) If $P = \{x : 7x - 4 > 5x + 2, x \in R\}$ and $Q = \{x : x - 19 \geq 1 - 3x, x \in R\}$, find the range of the set $P \cap Q$ and represent in on a number line.

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