

# ASSIGNMENT NO.1

## COURSE CODE-AI1110

### Probability And Random Variables

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#### Question 1a

Solve the following inequation and write down the solution set:

$11x-4 < 15x+4 \leq 13x+14$ ,  $x$  belongs to  $\mathbb{W}$   
Represent the solution on number line .

#### Solution

There are two inequities.

Lets solve for left inequation.

$$\begin{aligned} 11x-4 &< 15x+4 \\ \Rightarrow -8 &< 15x-11x \\ \Rightarrow -2 &< x \end{aligned}$$

Lets solve for right inequation.

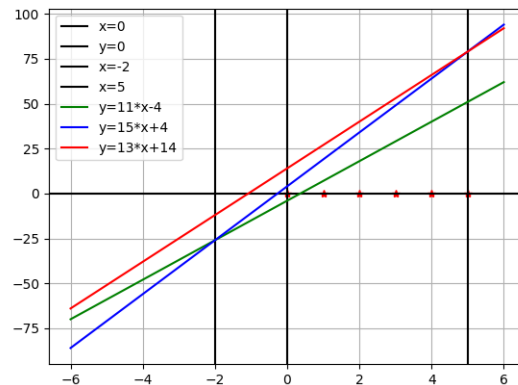
$$\begin{aligned} 15x+4 &\leq 13x+14 \\ \Rightarrow 2x &\leq 10 \\ \Rightarrow x &\leq 5 \end{aligned}$$

$$-2 < x \leq 5$$

This plot shows three lines :

$y=11x-4$ ,  $y=15x+4$ ,  $y=13x+14$ .

Red stars are solution points trapped between  $x=-2$  and  $x=5$  on number line  $y=0$  verifying our solution.



$x$  belongs to  $\mathbb{W}$

$\Rightarrow x = 0, 1, 2, 3, 4, 5$  is the required solution

THIS PLOT REPRESENTS A NUMBER LINE WITH REQUIRED SOLUTION POINTS.

