



#### Linear Inequations Ex 15.2 Q18

Consider the first inequation,

$$\begin{aligned}\frac{x}{2} &< 0 \\ x &< 0 \quad \dots (i)\end{aligned}$$

Consider the second inequation,

$$\begin{aligned}\frac{-x}{2} &< 3 \\ -x &< 6\end{aligned}$$

$$x > -6 \quad \dots (ii)$$

From (i) and (ii),  $(-6, 0)$  is the solution set of the simultaneous equations.

#### Linear Inequations Ex 15.2 Q19

Consider the first inequation,

$$\begin{aligned}10 &\leq -5(x - 2) \\ 2 &\leq -(x - 2) \\ 2 &\leq -x + 2 \\ 2 - 2 &\leq -x \\ 0 &\leq -x \\ x &\leq 0 \quad \dots (i)\end{aligned}$$

Consider the second inequation,

$$\begin{aligned}-5(x - 2) &< 20 \\ -5x + 10 &< 20 \\ -5x &< 20 - 10 \\ -5x &< 10 \\ -x &< 2 \\ x &> -2 \quad \dots (ii)\end{aligned}$$

From (i) and (ii),  $(-2, 0)$  is the solution set of the simultaneous equations.

#### Linear Inequations Ex 15.2 Q20

Consider the first inequation,

$$\begin{aligned}-5 &< 2x - 3 \\ 2x - 3 &> -5 \\ 2x &> -5 + 3 \\ 2x &> -2 \\ x &> -1 \quad \dots (i)\end{aligned}$$

Consider the second inequation,

$$\begin{aligned}2x - 3 &< 5 \\ 2x &< 5 + 3 \\ 2x &< 8 \\ x &< 4 \quad \dots (ii)\end{aligned}$$

From (i) and (ii),  $(-1, 4)$  is the solution set of the simultaneous equations.

#### Linear Inequations Ex 15.2 Q21

$$\begin{aligned}
\frac{4}{x+1} &\leq 3 \leq \frac{6}{x+1} \\
\Rightarrow 4 &\leq 3(x+1) \leq 6 \\
\Rightarrow \frac{4}{3} &\leq (x+1) \leq \frac{6}{3} \\
\Rightarrow \frac{4}{3} - 1 &\leq x \leq 2 - 1 \\
\Rightarrow \frac{1}{3} &\leq x \leq 1
\end{aligned}$$

Solution set for given inequation is  $\left[\frac{1}{3}, 1\right]$ .

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