



Linear Inequations Ex 15.1 Q17

$$\frac{2x + 3}{5} - 2 < \frac{3(x - 2)}{5}$$

$$\frac{2x + 3 - 10}{5} < \frac{3x - 6}{5}$$

$$2x - 7 < 3x - 6$$

$$2x - 3x < -6 + 7$$

$$-x < 1$$

$$x > -1$$

∴ The solution set is $(-1, \infty)$

Linear Inequations Ex 15.1 Q18

$$x - 2 \leq \frac{5x + 8}{3}$$

$$3(x - 2) \leq 5x + 8$$

$$3x - 6 \leq 5x + 8$$

$$3x - 5x \leq 8 + 6$$

$$-2x \leq 14$$

$$2x \geq -14$$

$$x \geq -7$$

∴ The solution set is $[-7, \infty)$

Linear Inequations Ex 15.1 Q19

$$\frac{6x - 5}{4x + 1} < 0$$

$$\text{Case 1: } 6x - 5 > 0 \quad \text{and} \quad 4x + 1 < 0$$

$$\Rightarrow x > \frac{5}{6} \quad \text{and} \quad x < -\frac{1}{4}$$

This is not possible.

$$\text{Case 2: } 6x - 5 < 0 \quad \text{and} \quad 4x + 1 > 0$$

$$\Rightarrow x < \frac{5}{6} \quad \text{and} \quad x > -\frac{1}{4}$$

$$\therefore \text{Solution set is } \left(-\frac{1}{4}, \frac{5}{6}\right)$$

Linear Inequations Ex 15.1 Q20

$$\frac{2x - 3}{3x - 7} > 0$$

$$\text{Case 1: } 2x - 3 > 0 \quad \text{and} \quad 3x - 7 > 0$$

$$\Rightarrow x > \frac{3}{2} \quad \text{and} \quad x > \frac{7}{3}$$

$$\Rightarrow x > \frac{7}{3}$$

$$\text{Case 2: } 2x - 3 < 0 \quad \text{and} \quad 3x - 7 < 0$$

$$\Rightarrow x < \frac{3}{2} \quad \text{and} \quad x < \frac{7}{3}$$

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

$$\therefore \left(-\infty, \frac{3}{2}\right) \cup \left(\frac{7}{3}, \infty\right) \text{ is the solution set}$$

***** END *****