Linear Inequations Ex 15.1 Q5

$$x + 5 > 4x - 10$$

$$\Rightarrow \quad x - 4x > -10 - 5$$

$$\Rightarrow \quad -3x > -15$$

$$\Rightarrow \quad 3x < 15$$

$$\Rightarrow \quad x < \frac{15}{3} = 5$$

$$\Rightarrow \quad x < 5$$

$$\therefore \quad (-\infty, 5) \text{ is the solution set}$$

Linear Inequations Ex 15.1 Q6

$$3x + 9 \geq -x + 19$$

$$\Rightarrow \quad 3x + x \geq 19 - 9$$

$$\Rightarrow \quad 4x \geq 10$$

$$\Rightarrow \quad x \geq \frac{10}{4} = \frac{5}{2}$$

$$\therefore \quad \left[\frac{5}{2}, \infty\right) \text{is the solution set}$$

Linear Inequations Ex 15.1 Q7

$$2(3-x) \geq \frac{x}{5} + 4$$

$$\Rightarrow \quad 6 - 2x \geq \frac{x}{5} + 4$$

$$\Rightarrow \quad -2x - \frac{x}{5} \geq 4 - 6$$

$$\Rightarrow \quad \frac{-11x}{5} \geq -2$$

$$\Rightarrow \quad \frac{11x}{5} \leq 2$$

$$\Rightarrow \quad x \leq \frac{10}{11}$$

$\left(-\infty, \frac{10}{11}\right]$ is the solution set

Linear Inequations Ex 15.1 Q8

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

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

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

$$\Rightarrow \quad \frac{6x - 20x}{10} \leq \frac{-15+4}{10}$$

$$\Rightarrow \quad -14x \leq -11$$

$$\Rightarrow \quad 14x \geq 11$$

$$\Rightarrow \quad x \geq \frac{11}{14}$$

$\left[\frac{11}{14}, \infty\right)$ is the solution set

********** END **********