Linear Inequations Ex 15.1 Q9

$$-(x-3)+4<5-2x$$

$$\Rightarrow \quad -x+3+4<5-2x$$

$$\Rightarrow \quad -x+7<5-2x$$

$$\Rightarrow \quad -x+2x<5-7$$

$$\Rightarrow \quad x<-2$$

$(-\infty,-2)$ is the solution set

Linear Inequations Ex 15.1 Q10

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

$$\Rightarrow \quad \frac{x}{5}<\frac{3x-2}{4}-\frac{(5x-3)}{5}$$

$$\Rightarrow \quad \frac{x}{5}<\frac{5(3x-2)-4(5x-3)}{20}$$

$$\Rightarrow \quad x<\frac{15x-10-20x+12}{4}$$

$$\Rightarrow \quad 4x<-5x+2$$

$$\Rightarrow \quad 4x+5x<2$$

$$\Rightarrow \quad 9x<2$$

$$\Rightarrow \quad x<\frac{2}{9}$$

$\therefore$ The solution set is $\left(-\infty,\frac{2}{9}\right)$

Linear Inequations Ex 15.1 Q11

$$\frac{2(x-1)}{5} \leq \frac{3(2+x)}{7}$$

$$\Rightarrow \quad 7(2(x-1)) \leq 5(3(2+x))$$

$$\Rightarrow \quad 14(x-1) \leq 15(2+x)$$

$$\Rightarrow \quad 14x - 14 \leq 30 + 15x$$

$$\Rightarrow \quad 14x - 15x \leq 30 + 14$$

$$\Rightarrow \quad -x \leq 44$$

$$\Rightarrow \quad x \geq -44$$

$\therefore$ The solution set is $[-44, \infty)$

Linear Inequations Ex 15.1 Q12

$$\frac{5x}{2} + \frac{3x}{4} \geq \frac{39}{4}$$

$$\Rightarrow \quad \frac{10x + 3x}{4} \geq \frac{39}{4}$$

$$\Rightarrow \quad 13x \geq 39$$

$$\Rightarrow \quad x \geq \frac{39}{13} = 3$$

$$\Rightarrow \quad x \geq 3$$

$\therefore$ The solution set is $[3, \infty)$

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