Linear Inequations Ex 15.1 Q13

$$\frac{x-1}{3}+4<\frac{x-5}{5}-2$$

$$\frac{x-1+12}{3}<\frac{x-5-10}{5}$$

$$5(x-1+12)<3(x-5-10)$$

$$5(x+11)<3(x-15)$$

$$5x+55<3x-45$$

$$5x-3x<-45-55$$

$$2x<-100$$

$$x<-50$$

$\therefore$ The solution set is $(-\infty,-50)$

Linear Inequations Ex 15.1 Q14

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

$$\frac{2x+3-12}{4}<\frac{x-4-6}{3}$$

$$3(2x+3-12)<4(x-4-6)$$

$$3(2x-9)<4(x-10)$$

$$6x-27<4x-40$$

$$6x-4x<-40+27$$

$$2x<-13$$

$$x<-\frac{13}{2}$$

$\therefore$ The solution set is $\left(-\infty,-\frac{13}{2}\right)$

Linear Inequations Ex 15.1 Q15

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

$$\frac{5-2x}{3} < \frac{x-30}{6}$$

$$6(5-2x) < 3(x-30)$$

$$30 - 12x < 3x - 90$$

$$-12x - 3x < -90 - 30$$

$$-15x < -120$$

$$15x > 120$$

$$x > \frac{120}{15} = 8$$

$\therefore$ The solution set is $(8, \infty)$

Linear Inequations Ex 15.1 Q16

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

$$\frac{4+2x}{3} \geq \frac{x-6}{2}$$

$$2(4+2x) \geq 3(x-6)$$

$$8 + 4x \geq 3x - 18$$

$$4x - 3x \geq -18 - 8$$

$$x \geq -26$$

$\therefore$ The solution set is $[-26, \infty)$

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