Linear Inequations Ex 15.1 Q17

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

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

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

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

$$-x<1$$

$$x>-1$$

$\therefore$ The solution set is $(-1,\infty)$

Linear Inequations Ex 15.1 Q18

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

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

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

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

$$-2x\leq 14$$

$$2x\geq -14$$

$$x\geq -7$$

$\therefore$ The solution set is $[-7,\infty)$

Linear Inequations Ex 15.1 Q19

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

Case 1: $6x-5>0$ *and* $4x+1<0$

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

This is not possible.

Case 2: $6x-5<0$ *and* $4x+1>0$

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

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

Linear Inequations Ex 15.1 Q20

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

Case 1: $2x-3>0$ *and* $3x-7>0$

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

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

Case 2: $2x-3<0$ *and* $3x-7<0$

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

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

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

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