Question 7: Solve 4x+3<5x+7

Ans) $4x + 3 < 5x + 7$

$\Rightarrow 4x + 3 - 7 < 5x + 7 - 7$

$\Rightarrow 4x - 4 < 5x$

$\Rightarrow 4x - 4 - 4x < 5x - 4x$

$\Rightarrow -4 < x$

Thus, all real numbers x, which are greater than -4, are the solution of the given inequality. Hence, the solution set of the given inequality is $(-4, \infty)$.

Question 8: Solve $\frac{x}{3} > \frac{x}{2} + 1$

Ans)

Consider the given inequality,

$$\frac{x}{3} > \frac{x}{2} + 1$$

Multiply by 6 on both sides, we get

$$6 \times \frac{x}{3} > 6 \times \frac{x}{2} + 6 \times 1$$

$$2x > 3x + 6$$

$$2x - 3x > 3x - 3x + 6$$

$$-x > 6$$

$$x < -6$$

Hence, this is the answer.

Question 9: Solve $\frac{x}{4} < \frac{(5x-2)}{3} - \frac{(7x-3)}{5}$

Ans)

$$\frac{x}{4} < \frac{(5x-2)}{3} - \frac{(7x-3)}{5}$$

$$\Rightarrow \frac{x}{4} < \text{dfrac}5(5x-2) - 3(7x-3)15$$

$$\Rightarrow \frac{x}{4} < \frac{25x-10-21x+9}{15}$$

$$\Rightarrow \frac{x}{4} < \frac{4x-1}{15}$$

$$\Rightarrow 15x < 4(4x-1)$$

$$\Rightarrow 15x < 16x-4$$

$$\Rightarrow 4 < 16x-15x$$

$$\Rightarrow 4 < x$$

Thus, all real numbers x, which are greater than 4, are the solution of the given inequality.

Hence, the solution set of the given inequality is $(4, \infty)$.