Linear Equations in One Variable Ex 9.3 Q1

Answer :

$\frac{2x-3}{3x+2} = -\frac{2}{3}$

or $6x - 9 = -6x - 4$ $\left(\text{After cross multiplication}\right)$

or $6x + 6x = -4 + 9$

or $x = \frac{5}{12}$

$\therefore x = \frac{5}{12}$ is the solution of the given equation.

Check :

$\text{L.H.S.} = \frac{2\times\frac{5}{12}-3}{3\times\frac{5}{12}+2} = \frac{\frac{5}{6}-3}{\frac{5}{4}+2} = \frac{\frac{-13}{6}}{\frac{13}{4}} = \frac{-4}{6} = \frac{-2}{3}$

$\text{R.H.S.} = \frac{-2}{3}$

$\therefore \text{L.H.S.} = \text{R.H.S. for } x = \frac{5}{12}$

Linear Equations in One Variable Ex 9.3 Q2

Answer :

$\frac{2-y}{y+7} = \frac{3}{5}$

or $10 - 5y = 3y + 21$ $\left(\text{After cross multiplication}\right)$

or $3y + 5y = 10 - 21$

or $8y = -11$

or $y = \frac{-11}{8}$

$\therefore y = \frac{-11}{8}$ is the solution of the given equation.

Check :

Substituting $y = \frac{-11}{8}$ in the given equation, we get :

$\text{L.H.S.} = \frac{2-\frac{-11}{8}}{\frac{-11}{8}+7} = \frac{16+11}{-11+56} = \frac{27}{45} = \frac{3}{5}$

$\text{R.H.S.} = \frac{3}{5}$

$\therefore \text{L.H.S.} = \text{R.H.S. for } y = \frac{-11}{8}$

Linear Equations in One Variable Ex 9.3 Q3

Answer :

$\frac{5x-7}{3x} = 2$

$\text{or } 6x = 5x - 7 \left(\text{After cross multiplication}\right)$

$\text{or } 6x - 5x = -7$

$\text{or } x = -7$

$\therefore x = -7 \text{ is the solution of given equation.}$

Check :

Substituting $x = -7$ in the given equation, we get :

$L.H.S = \frac{5\times(-7)-7}{.3(-7)} = \frac{-35-7}{-21} = \frac{-42}{-21} = 2$

$R.H.S. = 2$

$\therefore L.H.S. = R.H.S. \text{ for } x = -7.$

Linear Equations in One Variable Ex 9.3 Q4

Answer :

$\frac{3x+5}{2x+7} = 4$

$\text{or } 3x + 5 = 8x + 28$

$\text{or } 8x + 28 = 3x + 5 \left(\text{After cross multiplication}\right)$

$\text{or } 8x - 3x = 5 - 28$

$\text{or } 5x = -23$

$\text{or } x = \frac{-23}{5}$

$\therefore x = \frac{-23}{5} \text{ is the solution of given equation.}$

Check :

Substituting $x = \frac{-23}{5}$ in the given equation, we get :

$L.H.S. = \frac{3\times\frac{-23}{5}+5}{2\times\frac{-23}{5}+7} = \frac{-69+25}{-46+35} = \frac{-44}{-11} = 4$

$R.H.S. = 4$

$\therefore L.H.S. = R.H.S. \text{ for } x = \frac{-23}{5}$

Linear Equations in One Variable Ex 9.3 Q5

Answer :

$\frac{2y+5}{y+4} = 1$

$\text{or } 2y + 5 = y + 4$

$\text{or } 2y - y = 4 - 5$

$\text{or } y = -1$

Thus, $y = -1$ is the solution of the given equation.

Check :

Substituting $y = -1$ in the given equation, we get :

$L.H.S. = \frac{2(-1)+5}{-1+4} = \frac{-2+5}{3} = \frac{3}{3} = 1$

$R.H.S. = 1$

$\therefore L.H.S. = R.H.S. \text{ for } y = -1.$

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