



Linear Equations in One Variable Ex 9.3 Q6

Answer :

$$\frac{2x+1}{3x-2} = \frac{5}{9}$$

$$\text{or } 18x + 9 = 15x - 10 \quad \left[\text{After cross multiplication} \right]$$

$$\text{or } 18x - 15x = -10 - 9$$

$$\text{or } 3x = -19$$

$$\text{or } x = \frac{-19}{3}$$

Thus, $x = \frac{-19}{3}$ is the solution of the given equation.

Check :

Substituting $x = \frac{-19}{3}$ in the given equation, we get :

$$\text{L. H. S.} = \frac{2\left(\frac{-19}{3}\right) + 1}{3\left(\frac{-19}{3}\right) - 2} = \frac{-38 + 3}{-57 - 6} = \frac{-35}{-63} = \frac{5}{9}$$

$$\text{R. H. S.} = \frac{5}{9}$$

$$\therefore \text{L. H. S.} = \text{R. H. S. for } x = \frac{-19}{3}$$

Linear Equations in One Variable Ex 9.3 Q7

Answer :

$$\frac{1-9y}{19-3y} = \frac{5}{8}$$

$$\text{or } 8 - 72y = 95 - 15y \quad \left[\text{After cross multiplication} \right]$$

$$\text{or } 95 - 15y = 8 - 72y$$

$$\text{or } 72y - 15y = 8 - 95$$

$$\text{or } 57y = -87$$

$$\text{or } y = \frac{-87}{57}$$

$$\text{or } y = \frac{-29}{19}$$

Thus $y = \frac{-29}{19}$ is the solution of the given equation.

Check :

Substituting $y = \frac{-29}{19}$ in the given equation, we get :

$$\text{L. H. S.} = \frac{1 - 9\left(\frac{-29}{19}\right)}{19 - 3\left(\frac{-29}{19}\right)} = \frac{19 + 261}{361 + 87} = \frac{280}{448} = \frac{5}{8}$$

$$\text{R. H. S.} = \frac{5}{8}$$

$$\therefore \text{L. H. S.} = \text{R. H. S. for } y = \frac{-29}{19}$$

Linear

Equations in One Variable Ex 9.3 Q8

Answer :

$$\frac{2x}{3x+1} = -3$$

$$\text{or } 2x = -9x - 3 \quad \left[\text{After cross multiplication} \right]$$

$$\text{or } 2x + 9x = -3$$

$$\text{or } 11x = -3$$

$$\text{or } x = \frac{-3}{11}$$

Thus, $x = \frac{-3}{11}$ is the solution of the given equation.

Check :

Substituting $x = \frac{-3}{11}$ in the given equation, we get :

$$\text{L.H.S.} = \frac{2\left(\frac{-3}{11}\right)}{3\left(\frac{-3}{11}\right)+1} = \frac{-6}{-9+11} = \frac{-6}{2} = -3$$

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

$$\therefore \text{L.H.S.} = \text{R.H.S. for } x = \frac{-3}{11}$$

Linear

Equations in One Variable Ex 9.3 Q9

Answer :

$$\frac{y-(7-8y)}{9y-(3+4y)} = \frac{2}{3}$$

$$\text{or } \frac{9y-7}{5y-3} = \frac{2}{3}$$

$$\text{or } 27y - 21 = 10y - 6 \quad \left[\text{After cross multiplication} \right]$$

$$\text{or } 27y - 10y = -6 + 21$$

$$\text{or } 17y = 15$$

$$\text{or } y = \frac{15}{17}$$

Thus, $y = \frac{15}{17}$ is the solution of the given equation.

Check :

Substituting $y = \frac{15}{17}$ in the given equation, we get :

$$\text{L.H.S.} = \frac{9\left(\frac{15}{17}\right)-7}{5\left(\frac{15}{17}\right)-3} = \frac{135-119}{75-51} = \frac{16}{24} = \frac{2}{3}$$

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

$$\therefore \text{L.H.S.} = \text{R.H.S. for } y = \frac{15}{17}$$

Linear Equations in One Variable Ex 9.3 Q10

Answer :

$$\frac{6}{2x-(3-4x)} = \frac{2}{3}$$

$$\text{or } \frac{6}{6x-3} = \frac{2}{3}$$

$$\text{or } 12x - 6 = 18 \quad \left[\text{After cross multiplication} \right]$$

$$\text{or } 12x = 18 + 6$$

$$\text{or } x = \frac{24}{12}$$

$$\text{or } x = 2$$

Thus, $x = 2$ is the solution of the given equation.

Check :

Substituting $x = 2$ in the given equation, we get :

$$\text{L.H.S.} = \frac{6}{2 \times 2 - (3 - 4 \times 2)} = \frac{6}{9} = \frac{2}{3}$$

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

$$\therefore \text{L.H.S.} = \text{R.H.S. for } x = 2.$$

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