



Linear Equations in One Variable Ex 9.2 Q16

**Answer :**

$$0.18(5x - 4) = 0.5x + 0.8$$

$$\text{or } 0.9x - 0.72 = 0.5x + 0.8$$

$$\text{or } 0.9x - 0.5x = 0.8 + 0.72$$

$$\text{or } 0.4x = 1.52$$

$$\text{or } x = \frac{1.52}{0.4}$$

$$\text{or } x = 3.8$$

Thus,  $x = 3.8$  is the solution of the given equation.

**Check :**

Substituting  $x = 3.8$  in the given equation, we get :

$$\text{L.H.S.} = 0.18(5 \times 3.8 - 4) = 0.18 \times 15 = 2.7$$

$$\text{R.H.S.} = 0.5 \times 3.8 + 0.8 = 2.7$$

$\therefore \text{L.H.S.} = \text{R.H.S.}$  for  $x = 3.8$ .

Linear Equations in One Variable Ex 9.2 Q17

**Answer :**

$$\frac{2}{3x} - \frac{3}{2x} = \frac{1}{12}$$

$$\text{or } \frac{4-9}{6x} = \frac{1}{12}$$

$$\text{or } \frac{-5}{6x} = \frac{1}{12}$$

$$\text{or } 6x = -60$$

$$\text{or } x = \frac{-60}{6}$$

$$\text{or } x = -10$$

Thus,  $x = -10$  is the solution of the given equation.

**Check :**

Substituting  $x = -10$  in the given equation, we get :

$$\text{L.H.S.} = \frac{2}{3 \times (-10)} - \frac{3}{2 \times (-10)} = \frac{2}{-30} - \frac{3}{-20} = \frac{-4+9}{60} = \frac{5}{60} = \frac{1}{12}$$

$$\text{R.H.S.} = \frac{1}{12}$$

$\therefore \text{L.H.S.} = \text{R.H.S.}$  for  $x = -10$ .

Linear Equations in One Variable Ex 9.2 Q18

**Answer :**

$$\frac{4x}{9} + \frac{1}{3} + \frac{13}{108}x = \frac{8x+19}{18}$$

$$\text{or } \frac{48x+36+13x}{108} = \frac{8x+19}{18}$$

$$\text{or } \frac{61x+36}{108} = \frac{8x+19}{18}$$

$$\text{or } 61x + 36 = 6(8x + 19) \quad \left[ \text{Multiplying both sides by 108} \right]$$

$$\text{or } 61x + 36 = 48x + 114$$

$$\text{or } 61x - 48x = 114 - 36$$

$$\text{or } 13x = 78$$

$$\text{or } x = \frac{78}{13}$$

$$\text{or } x = 6$$

Thus,  $x = 6$  is the solution of the given equation.

Check :

Substituting  $x = 6$  in the given equation, we get :

$$\text{L.H.S.} = \frac{4 \times 6}{9} + \frac{1}{3} + \frac{13}{108} \times 6 = \frac{24}{9} + \frac{1}{3} + \frac{13}{18} = \frac{48+6+13}{18} = \frac{67}{18}$$

$$\text{R.H.S.} = \frac{8 \times 6 + 19}{18} = \frac{67}{18}$$

$\therefore \text{L.H.S.} = \text{R.H.S. for } x = 6.$

Linear Equations in One Variable Ex 9.2 Q19

**Answer :**

$$\frac{45-2x}{15} - \frac{4x+10}{5} = \frac{15-14x}{9}$$

$$\text{or } \frac{45-2x-12x-30}{15} = \frac{15-14x}{9}$$

$$\text{or } \frac{15-14x}{5} = \frac{15-14x}{3} \quad \left[ \text{Multiplying both sides by 3} \right]$$

$$\text{or } 45 - 42x = 75 - 70x \quad \left[ \text{After cross multiplication} \right]$$

$$\text{or } 70x - 42x = 75 - 45$$

$$\text{or } 28x = 30$$

$$\text{or } x = \frac{30}{28}$$

$$\text{or } x = \frac{15}{14}$$

Thus,  $x = \frac{15}{14}$  is the solution of the given equation.

Check :

Substituting  $x = \frac{15}{14}$  in the given equation, we get :

$$\text{L.H.S.} = \frac{45-2 \times \frac{15}{14}}{15} - \frac{4 \times \frac{15}{14} + 10}{5} = \frac{45 \times 7 - 15}{105} - \frac{30+70}{35} = \frac{300}{105} - \frac{100}{35} = 0$$

$$\text{R.H.S.} = \frac{15-14 \times \frac{15}{14}}{9} = 0$$

$\therefore \text{L.H.S.} = \text{R.H.S. for } x = \frac{15}{14}$

Linear Equations in One Variable Ex 9.2 Q20

**Answer :**

$$5\left(\frac{7x+5}{3}\right) - \frac{23}{3} = 13 - \frac{4x-2}{3}$$

$$\text{or } \frac{35x+25}{3} + \frac{4x-2}{3} = 13 + \frac{23}{3}$$

$$\text{or } \frac{35x+25+4x-2}{3} = \frac{39+23}{3}$$

$$\text{or } 39x + 23 = 62 \quad \left[ \text{Multiplying both sides by 3} \right]$$

$$\text{or } 39x = 62 - 23$$

$$\text{or } x = \frac{39}{39}$$

$$\text{or } x = 1$$

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

**Check :**

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

$$\text{L.H.S.} = 5\left(\frac{7 \times 1 + 5}{3}\right) - \frac{23}{3} = \frac{60}{3} - \frac{23}{3} = \frac{37}{3}$$

$$\text{R.H.S.} = 13 - \frac{4 \times 1 - 2}{3} = \frac{39 - 2}{3} = \frac{37}{3}$$

$\therefore$  L.H.S. = R.H.S. for  $x = 1$ .

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