Linear Equations in One Variable Ex 9.2 Q16

Answer :

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

or $0.9x-0.72=0.5x+0.8$

or $0.9x-0.5x=0.8+0.72$

or $0.4x=1.52$

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

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 :

$L.H.S.=0.18\left(5\times 3.8-4\right)=0.18\times 15=2.7$

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

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

Linear Equations in One Variable Ex 9.2 Q17

Answer :

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

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

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

or $6x=-60$

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

or $x=-10$

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

Check :

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

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

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

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

Linear Equations in One Variable Ex 9.2 Q18

Answer :

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

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

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

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

or $61x+36=48x+114$

or $61x-48x=114-36$

or $13x=78$

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

or $x=6$

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

Check :

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

$L.H.S.=\frac{4\times6}{9}+\frac{1}{3}+\frac{13}{108}\times6=\frac{24}{9}+\frac{1}{3}+\frac{13}{18}=\frac{48+6+13}{18}=\frac{67}{18}$

$R.H.S.=\frac{8\times6+19}{18}=\frac{67}{18}$

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

Linear Equations in One Variable Ex 9.2 Q19

Answer :

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

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

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

or $45-42x=75-70x$ [After cross multiplication]

or $70x-42x=75-45$

or $28x=30$

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

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 :

$L.H.S.=\frac{45-2\times\frac{15}{14}}{15}-\frac{4\times\frac{15}{14}+10}{5}=\frac{45\times7-15}{105}-\frac{30+70}{35}=\frac{300}{105}-\frac{100}{35}=0$

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

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

Linear Equations in One Variable Ex 9.2 Q20

Answer :

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

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

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

or $39x + 23 = 62$ [Multiplying both sides by 3]

or $39x = 62 - 23$

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

or $x = 1$

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

Check :

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

$L.H.S. = 5\left(\frac{7\times1+5}{3}\right) - \frac{23}{3} = \frac{60}{3} - \frac{23}{3} = \frac{37}{3}$

$R.H.S. = 13 - \frac{4\times1-2}{3} = \frac{39-2}{3} = \frac{37}{3}$

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

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