Linear Equations in One Variable Ex 9.1 Q6

Answer :

$$(x+2)(x+3)+(x-3)(x-2)-2x(x+1)=0$$

or $x^2+5x+6+x^2-5x+6-2x^2-2x=0$

or $12-2x=0$

or $x=\frac{12}{2}=6$

Verification :

$$\text{L.H.S.}=(6+2)(6+3)+(6-3)(6-2)-2\times 6(6+1)$$

$$=72+12-84=0=\text{R.H.S.}$$

Linear Equations in One Variable Ex 9.1 Q7

Answer :

$$\frac{x}{2}-\frac{4}{5}+\frac{x}{5}+\frac{3x}{10}=\frac{1}{5}$$

$$\text{or}\quad \frac{x}{2}+\frac{x}{5}+\frac{3x}{10}=\frac{1}{5}+\frac{4}{5}$$

$$\text{or}\quad \frac{5x+2x+3x}{10}=\frac{5}{5}$$

$$\text{or}\quad \frac{10x}{10}=1$$

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

Verification :

$$\text{L.H.S.}=\frac{1}{2}-\frac{4}{5}+\frac{1}{5}+\frac{3}{10}$$

$$=\frac{5-8+2+3}{10}=\frac{1}{5}=\text{R.H.S.}$$

Linear Equations in One Variable Ex 9.1 Q8

Answer :

$$\frac{7}{x} + 35 = \frac{1}{10}$$

$$\text{or } \frac{7}{x} = \frac{1}{10} - 35$$

$$\text{or } \frac{7}{x} = \frac{1-350}{10}$$

$$\text{or } \frac{x}{7} = \frac{10}{-349}$$

$$\text{or } x = \frac{-10 \times 7}{349} = \frac{-70}{349}$$

Verification :

$$\text{L.H.S.} = \frac{7}{\frac{-70}{349}} + 35$$

$$= 7 \times \frac{349}{-70} + 35$$

$$= \frac{349}{-10} + 35 = \frac{1}{10} = \text{R.H.S.}$$

Linear Equations in One Variable Ex 9.1 Q9

Answer :

$\frac{2x-1}{3} - \frac{6x-2}{5} = \frac{1}{3}$

or $\frac{10x-5-18x+6}{15} = \frac{1}{3}$

or $\frac{-8x+1}{15} = \frac{1}{3}$

or $-24x + 3 = 15$

or $24x = 3 - 15$

or $x = \frac{-12}{24} = \frac{-1}{2}$

Verification :

$\text{L.H.S.} = \frac{2 \times \frac{-1}{2} - 1}{3} - \frac{6 \times \frac{-1}{2} - 2}{5}$

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

$= \frac{-2+3}{3} = \frac{1}{3} = \text{R.H.S.}$

Linear Equations in One Variable Ex 9.1 Q10

Answer :

$$13(y-4)-3(y-9)-5(y+4)=0$$

$$\text{or } 13y-52-3y+27-5y-20=0$$

$$\text{or } 5y=45$$

$$\text{or } y=\frac{45}{5}=9$$

Verification :

$$\text{L.H.S.}=13(9-4)-3(9-9)-5(9+4)$$

$$=13\times5-3\times0-5\times13=0=\text{R.H.S.}$$

Linear Equations in One Variable Ex 9.1 Q11

Answer :

$$\frac{2}{3}(x-5)-\frac{1}{4}(x-2)=\frac{9}{2}$$

$$\text{or } \frac{2x-10}{3}-\frac{x-2}{4}=\frac{9}{2}$$

$$\text{or } \frac{8x-40-3x+6}{12}=\frac{9}{2}$$

$$\text{or } \frac{5x-34}{12}=\frac{9}{2}$$

$$\text{or } 10x-68=108$$

$$\text{or } 10x=108+68$$

$$\text{or } x=\frac{176}{10}=\frac{88}{5}$$

Verification :

$$\text{L.H.S.}=\frac{2}{3}\left(\frac{88}{5}-5\right)-\frac{1}{4}\left(\frac{88}{5}-2\right)$$

$$=\frac{2}{3}\times\frac{63}{5}-\frac{1}{4}\times\frac{78}{5}=\frac{9}{2}=\text{R.H.S.}$$

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