

Linear Equations in One Variable Ex 9.2 Q11

### Answer:

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

or 
$$\frac{3x-2x+2}{4} = \frac{x-2}{3}$$

or 
$$4x - 8 = 3x + 6$$

or 
$$x = 14$$

# Check:

L.H.S. = 
$$\frac{3\times14}{4} - \frac{14-1}{2} = \frac{21}{2} - \frac{13}{2} = \frac{8}{2} = 4$$

R. H. S. 
$$=$$
  $\frac{14-2}{3} = \frac{12}{3} = 4$ 

$$\therefore$$
 L.H.S. = R.H.S. for  $x = 14$ 

Linear Equations in One Variable Ex 9.2 Q12

### Answer:

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

or 
$$\frac{20x-3x+3}{12} = \frac{x-3}{5}$$

or 
$$\frac{17x+3}{12} = \frac{x-3}{5}$$

or 
$$85x + 15 = 12x - 36$$

or 
$$73x = -51$$

or 
$$x = \frac{-51}{73}$$

# Check:

L. H. S. = 
$$\frac{5 \times \frac{-51}{73}}{3} - \frac{\frac{-51}{73} - 1}{4} = \frac{-255}{219} - \frac{-124}{292} = \frac{-54}{73}$$

R. H. S. = 
$$\frac{\frac{-51}{73} - 3}{5} = \frac{-54}{73}$$

: L.H.S. = R.H.S. for 
$$x = \frac{-51}{73}$$

Linear Equations in One Variable Ex 9.2 Q13

# Answer:

$$\frac{3x+1}{16} + \frac{2x-3}{7} = \frac{x+3}{8} + \frac{3x-1}{14}$$
or 
$$\frac{3x+1}{16} - \frac{x+3}{8} = \frac{3x-1}{14} - \frac{2x-3}{7}$$
or 
$$\frac{3x+1-2x-6}{16} = \frac{3x-1-4x+6}{14}$$
or 
$$\frac{x-5}{8} = \frac{-x+5}{7}$$
or 
$$7x - 35 = -8x + 40$$
or 
$$15x = 75$$
or 
$$x = \frac{75}{15} = 5$$

# Check:

L. H. S. = 
$$\frac{3 \times 5 + 1}{16} + \frac{2 \times 5 - 3}{7} = \frac{16}{16} + \frac{7}{7} = 2$$
  
R. H. S. =  $\frac{5+3}{8} + \frac{3 \times 5 - 1}{14} = \frac{8}{8} + \frac{14}{14} = 2$ 

$$\therefore$$
 L.H.S. = R.H.S. for  $x = 5$ 

Linear Equations in One Variable Ex 9.2 Q14

#### Answer:

$$\begin{array}{l} \frac{1-2x}{7}-\frac{2-3x}{8}=\frac{3}{2}+\frac{x}{4}\\ \text{or } \frac{1-2x}{7}=\frac{3}{2}+\frac{x}{4}+\frac{2-3x}{8}\\ \text{or } \frac{1-2x}{7}=\frac{12+2x+2-3x}{8}\\ \text{or } \frac{1-2x}{7}=\frac{14-x}{8}\\ \text{or } 8-16x=98-7x\\ \text{or } -16x+7x=98-8\\ \text{or } x=\frac{-90}{9}\\ =-10\\ \text{Check:}\\ \text{L. H. S.}=\frac{1-2\times\left(-10\right)}{7}-\frac{2-3\times\left(-10\right)}{8}=\frac{1+20}{7}-\frac{2+30}{8}=3-4=-1\\ \text{R. H. S.}=\frac{3}{2}+\frac{-10}{4}=\frac{3}{2}+\frac{-5}{2}=\frac{3-5}{2}=-1 \end{array}$$

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

Linear Equations in One Variable Ex 9.2 Q15

# Answer:

$$\frac{9\mathbf{x}+7}{2} - \left(\mathbf{x} - \frac{\mathbf{x}-2}{7}\right) = 36$$

or 
$$\frac{63x+49-14x+2x-4}{14} = 36$$

or 
$$\frac{51x+45}{14} = 36$$

or 
$$51x + 45 = 504$$

or 
$$51x = 504 - 45$$

or 
$$x = \frac{459}{51} = 9$$

Thus, x = 9 is the solution of the given equation.

# Check:

Substituting x = 9 in the given equation, we get:

L.H.S. = 
$$\frac{9 \times 9 + 7}{2} - \left(9 - \frac{9 - 2}{7}\right) = \frac{88}{2} - 9 + \frac{7}{7} = 44 - 9 + 1 = 36$$

R.H.S. = 36

 $\therefore$  L.H.S. = R.H.S. for x = 9.

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