

Equations with Fractions : Answers

1) $\frac{x}{3} = \frac{1}{3}$

Both over 3

$$x = 1$$

2) $\frac{x}{5} = \frac{2}{3}$

LCM = 15

$$\frac{3x}{15} = \frac{10}{15}$$

$$\therefore 3x = 10$$

$$x = \frac{10}{3} = 3\frac{1}{3}$$

3) $\frac{2x}{3} = \frac{5}{7}$

LCM = 21

$$\frac{14x}{21} = \frac{15}{21}$$

$$14x = 15$$

$$x = \frac{15}{14} = 1\frac{1}{14}$$

4) $\frac{3}{4} = \frac{5x}{6}$

LCM = 12

$$\frac{9}{12} = \frac{10x}{12}$$

$$9 = 10x$$

$$\frac{9}{10} = x$$

5) $\frac{8}{9} = \frac{7x}{10}$

LCM = 90

$$\frac{80}{90} = \frac{63x}{90}$$

$$80 = 63x$$

$$\frac{80}{63} = x$$

6) $\frac{x}{2} + \frac{3}{4} = \frac{3}{8}$

LCM = 8

$$\frac{4x}{8} + \frac{6}{8} = \frac{3}{8}$$

$$4x + 6 = 3$$

$$4x = 3 - 6$$

$$4x = -3$$

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

7) $\frac{x}{3} - \frac{2}{9} = \frac{7}{9}$

LCM = 9

$$\frac{3x}{9} - \frac{2}{9} = \frac{7}{9}$$

$$3x - 2 = 7$$

$$3x = 7 + 2$$

$$3x = 9$$

$$x = \frac{9}{3}$$

$$x = 3$$

8) $\frac{6}{7} + \frac{3x}{14} = \frac{5}{14}$

LCM = 14

$$\frac{12}{14} + \frac{3x}{14} = \frac{5}{14}$$

$$12 + 3x = 5$$

$$3x = 5 - 12$$

$$3x = -7$$

$$x = -\frac{7}{3}$$

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

$$9) \quad \frac{8x}{9} - \frac{3}{1} = \frac{5x}{6}$$

$$\text{LCM} = 18$$

$$\frac{16x}{18} - \frac{54}{18} = \frac{15x}{18}$$

$$16x - 54 = 15x$$

$$16x - 15x = 54$$

$$x = 54$$

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

$$\text{LCM} = 20$$

$$\frac{8x}{20} = \frac{80}{20} + \frac{15x}{20}$$

$$8x = 80 + 15x$$

$$-80 = 15x - 8x$$

$$-80 = 7x$$

$$\frac{-80}{7} = x$$

$$-11\frac{3}{7} = x$$

$$11) \quad \frac{2}{1} - \frac{3x}{7} = \frac{2}{21} + \frac{2x}{1}$$

$$\text{LCM} = 21$$

$$\frac{42}{21} - \frac{9x}{21} = \frac{2}{21} + \frac{42x}{21}$$

$$42 - 9x = 2 + 42x$$

$$42 - 2 = 42x + 9x$$

$$40 = 51x$$

$$\frac{40}{51} = x$$