

Algebra II

5-8

Solving Equations with Fractional Coefficients

Notice:

Ignore all inequalities (greater than or less than signs) in this section. Make them equal signs!

Solve.

$$1) \left(\frac{x}{9} + \frac{1}{6} = \frac{2}{3} \right) \times 18$$

$$\begin{aligned} 2x + 3 &= 12 \\ 2x + 3 - 3 &= 12 - 3 \\ 2x &= 9 \\ \frac{2x}{2} &= \frac{9}{2} \\ x &= \frac{9}{2} \\ \left\{ \frac{9}{2} \right\} \end{aligned}$$

$$17) \left(\frac{x(x+1)}{5} - \frac{(x+1)}{6} = \frac{1}{3} \right) \times 30$$

$$\begin{aligned} 6x(x+1) - 5(x+1) &= 10 \\ 6x^2 + 6x - 5x - 5 &= 10 \\ 6x^2 + x - 5 - 10 &= 10 - 10 \\ 6x^2 + x - 15 &= 0 \\ (3x + 5)(2x - 3) &= 0 \\ \begin{array}{l} 3x + 5 = 0 \quad 2x - 3 = 0 \\ 3x = -5 \quad 2x = 3 \\ x = -\frac{5}{3} \quad x = \frac{3}{2} \end{array} \\ \left\{ -\frac{5}{3}, \frac{3}{2} \right\} \end{aligned}$$

$$23) \left(\frac{t^2}{6} + \frac{t-2}{4} = \frac{t+1}{3} \right) \times 12$$

$$\begin{aligned} 2t^2 + 3(t-2) &= 4(t+1) \\ 2t^2 + 3t - 6 &= 4t + 4 \\ 2t^2 + 3t - 4t - 6 - 4 &= 0 \\ 2t^2 - t - 10 &= 0 \\ (2t - 5)(t + 2) &= 0 \\ \begin{array}{l} 2t - 5 = 0 \quad t + 2 = 0 \\ 2t = 5 \quad t = -2 \\ \frac{2t}{2} = \frac{5}{2} \end{array} \\ \left\{ \frac{5}{2}, -2 \right\} \end{aligned}$$

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