

6.4 - Rational Equations

Note Title

To Solve a Rational Equation

Multiply both sides of the equation by the LCD. This is called *clearing fractions* and produces an equation similar to those we have already solved.

① Solve

$$a) \frac{1}{2} - \frac{2}{t} = \frac{3}{2t}$$

$$b) \frac{x-2}{x-4} = \frac{2}{x-4}$$

(observe graphs)

$$c) \frac{x}{x+1} + \frac{5}{x} = \frac{1}{x^2+x}$$

$$d) \frac{3-2y}{y+1} - \frac{10}{y^2-1} = \frac{2y+3}{1-y}$$

② Find all values such that $f(a) = g(a)$

$$f(x) = \frac{3x-1}{x^2-7x+10}, \quad g(x) = \frac{x-1}{x^2-4} + \frac{2x+1}{x^2-3x-10}$$