

Multiply the numerator and denominator by the LCD of all of the terms. Distribute it to all the terms. Then factor the polynomials.

$$\frac{1 + \frac{3}{x} - \frac{10}{x^2}}{1 - \frac{1}{x} - \frac{30}{x^2}} \cdot \frac{x^2}{x^2} = \frac{x^2 + 3x - 10}{x^2 - x - 30} = \frac{(x + 5)(x - 2)}{(x + 5)(x - 6)} = \frac{x - 2}{x - 6}$$