

Section 6.3: Addition and Subtraction

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10:06 AM

adding and subtracting rational expressions

$$\left(\frac{5}{5}\right) \frac{1}{12} - \frac{1}{60} = \frac{5}{60} - \frac{1}{60} = \frac{4}{60} = \frac{2}{30} = \frac{1}{15}$$

$$\left(\frac{b}{b}\right) \frac{2}{a^2b} + \frac{3}{ab^2} \left(\frac{a}{a}\right) = \frac{2b}{a^2b^2} + \frac{3a}{a^2b^2} = \frac{3a+2b}{a^2b^2}$$

combine into a single fraction:

$$\frac{5}{x+2} + \frac{3}{x-2}$$

$$\text{LCD: } (x+2)(x-2)$$

$$\left(\frac{x-2}{x-2}\right) \frac{5}{x+2} + \frac{3}{x-2} \left(\frac{x+2}{x+2}\right)$$

$$\frac{5x-10 + 3x+6}{(x+2)(x-2)}$$

$$\frac{8x-4}{(x+2)(x-2)} \quad \text{or} \quad \frac{4(2x-1)}{(x+2)(x-2)} \quad \text{or} \quad \frac{8x-4}{x^2-4}$$

$$\frac{2}{x^2-4} - \frac{5}{x^2-3x-10}$$

$$\left(\frac{x-5}{x-5}\right) \frac{2}{(x+2)(x-2)} - \frac{5}{(x-5)(x+2)} \left(\frac{x-2}{x-2}\right) \quad \text{LCD: } (x+2)(x-2)(x-5)$$

$$\frac{2(x-5) - 5(x-2)}{(x+2)(x-2)(x-5)}$$

$$\frac{2x-10 - 5x + 10}{(x+2)(x-2)(x-5)}$$

$$\frac{-3x}{(x+2)(x-2)(x-5)}$$