

Mar. 5, 2018

Sect. 6-3b

Add/Subt. Rational Expressions

with Unlike Denoms

LCD

Convert

Add/Subt

Simplify

$$\frac{1}{2} + \frac{1}{3} \quad \text{LCD}(2, 3) = 6$$

$$\frac{1}{2} \cdot \frac{3}{3} + \frac{1}{3} \cdot \frac{2}{2}$$

$$\frac{3}{6} + \frac{2}{6}$$

$$\frac{3+2}{6} = \frac{5}{6}$$

$$\frac{2x}{(3x+5)} + \frac{14}{(x+7)} \quad \text{LCD: } (3x+5)(x+7)$$

$$\frac{2x}{(3x+5)} \cdot \frac{(x+7)}{(x+7)} + \frac{14}{(x+7)} \cdot \frac{(3x+5)}{(3x+5)}$$

$$\frac{2x^2 + 14x}{(3x+5)(x+7)} + \frac{42x + 70}{(3x+5)(x+7)} = \frac{2x^2 + 56x + 70}{(3x+5)(x+7)}$$

$$\frac{x}{x^2+5x+6} - \frac{2}{x^2+3x+2}$$

$$\frac{x}{(x+3)(x+2)} - \frac{2}{(x+2)(x+1)} \quad \text{LCD: } (x+3)(x+2)(x+1)$$

$$\frac{x}{(x+3)(x+2)} \cdot \frac{(x+1)}{(x+1)} - \frac{2}{(x+2)(x+1)} \cdot \frac{(x+3)}{(x+3)}$$

$$\frac{x^2+x}{(x+3)(x+2)(x+1)} - \frac{2x+6}{(x+3)(x+2)(x+1)}$$

$$\frac{x^2 + x}{(x+3)(x+2)(x+1)} - \frac{2x+6}{(x+3)(x+2)(x+1)}$$

$$\frac{x^2 - x - 6}{(x+3)(x+2)(x+1)}$$

$$\frac{(x-3)(\cancel{x+2})}{(x+3)(\cancel{x+2})(x+1)} = \frac{x-3}{(x+3)(x+1)}$$

$$\frac{x}{x^2+2x+1} + \frac{2}{x^2-5x-6}$$

$$\frac{x}{(x+1)^2} + \frac{2}{(x-6)(x+1)} \quad \text{LCD: } (x-6)(x+1)^2$$

$$\frac{x(x-6)}{(x+1)^2(x-6)} + \frac{2(x+1)}{(x-6)(x+1)^2}$$

$$\frac{x(x-6)}{(x+1)^2(x-6)} + \frac{2(x+1)}{(x-6)(x+1)^2}$$

$$\frac{x^2-6x}{LCD} + \frac{2x+2}{LCD}$$

$$\frac{x^2-4x+2}{(x+1)^2(x-6)}$$