April 20, 2016

* Exam #3 - Friday
  - Factoring: 6.1 — 6.6
  - Rational Expressions: 7.1 & 7.3

Apr 20-9:01 AM

7.3 Addition / Subtraction with Unlike Denominators

$$\frac{a}{b} \pm \frac{c}{d} = \frac{a \cdot d \pm c \cdot b}{bd}$$

$a = 3$, $b = 10x^2$, $c = 7$, $d = 25x$

$$\frac{3}{10x^2} + \frac{7}{25x} = \frac{3 \cdot 5 + 7 \cdot 2x}{50x^2} = \frac{15 + 14x}{50x^2}$$

Least Common Denominator (LCD)

$50x^2$

① $\frac{50x^2}{10x^2} = 5$ or $\frac{3}{10x^2} \cdot \frac{5}{5} = \frac{15}{50x^2}$

② $\frac{50x^2}{25x} = 2x$ or $\frac{7}{25x} \cdot \frac{2x}{2x} = \frac{14x}{50x^2}$

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① $\frac{19}{2x}, \frac{5}{4x^3}$ LCD: $4x^3$

② $\frac{17x}{4y^5}, \frac{2}{8y}$ LCD: $8y^5$

③ $\frac{2}{x+3}, \frac{5}{x+2}$ LCD: $(x+3)(x+2)$

④ $\frac{1}{6y}, \frac{3x}{4y+12}$ (always factor $4(y+3)$)

LCD: $6 \cdot y \cdot 4 \cdot (y+3)$

$24y(y+3)$

Apr 20-9:20 AM

$$\frac{6x}{x^2-4} - \frac{3}{x+2}$$

Steps
① Always factor
② Find LCD
③ Simplify

$$\frac{6x}{(x+2)(x-2)} - \frac{3}{x+2}$$ * what is the LCD? $(x+2)(x-2)$

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

② $\frac{3}{(x+2)} \cdot \frac{(x-2)}{(x-2)} = \frac{3x-6}{(x+2)(x-2)}$

} now we have Common Denominator

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

$$= \frac{3x+6}{(x+2)(x-2)}$$ N.P.?

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

$$= \frac{3}{x-2}$$

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$$\frac{10x}{x^2-9} - \frac{5}{x+3}$$

$(x+3)(x-3)$

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

$$\frac{10x - 5x + 15}{(x+3)(x-3)}$$

$$\frac{5x+15}{(x+3)(x-3)}$$

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

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

Apr 20-9:44 AM