

Daily Agenda

Learning Target: I can add and subtract rational expressions.

Homework	Assessments
5.1 Day 2 Worksheet	5.1 to 5.2 Quiz 11/21

He who is not courageous enough to take risks will accomplish nothing  
-Muhammad Ali

Nov 15-8:24 PM

$$14) \frac{x^3+8}{x-2} \cdot \frac{x^2-4x+4}{x^2-2x+4}$$

$$\frac{(x+2)(x^2-2x+4)}{x-2} \cdot \frac{(x-2)(x-2)}{(x^2-2x+4)} = (x+2)(x-2)$$

or  
 $x^2-4$

Nov 16-10:52 AM

5.1 Simplifying Rational Expressions

To simplify complex fractions, clear fractions first

$$\frac{\left(x+3+\frac{2}{x}\right)X^2}{\left(1-\frac{4}{x^2}\right)X^2} = \frac{x^3+3x^2+2x}{x^2-4} = \frac{x(x^2+3x+2)}{(x+2)(x-2)}$$

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

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$$\frac{\left(3-\frac{6}{x+5}\right)(x+5)(x-4)}{\left(1+\frac{7}{x-4}\right)(x+5)(x-4)} =$$

$$\frac{3(x+5)(x-4)-6(x-4)}{(x+5)(x-4)+7(x+5)}$$

$$\frac{3(x^2+x-20)-6x+24}{(x^2+x-20)+7x+35} = \frac{3x^2+3x-60-6x+24}{x^2+8x+15}$$

$$\frac{3x^2-3x-36}{x^2+8x+15} = \frac{3(x^2-x-12)}{(x+3)(x+5)} = \frac{3(x-4)(x+3)}{(x+3)(x+5)} = \frac{3(x-4)}{x+5}$$

Nov 16-11:02 AM

5.1 Sums and Differences of Rational Expressions

To simplify rational expressions, factor first.  
Then find common denominators.

$$\frac{(x-2)}{(x-2)} \cdot \frac{1}{x+2} + \frac{3(x+2)}{(x-2)(x+2)} \cdot \frac{x-2+3x+6}{(x+2)(x-2)} = \frac{4x+4}{(x+2)(x-2)}$$

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

Dec 8-8:04 PM

Simplify

$$\frac{x-2}{x^2-x-2} + \frac{x-4}{x^2-5x+4}$$

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

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

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

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Simplify

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

$$\frac{(x^2+6x+9) - (x^2-6x+9)}{(x+3)(x-3)} = \frac{12x}{(x+3)(x-3)}$$

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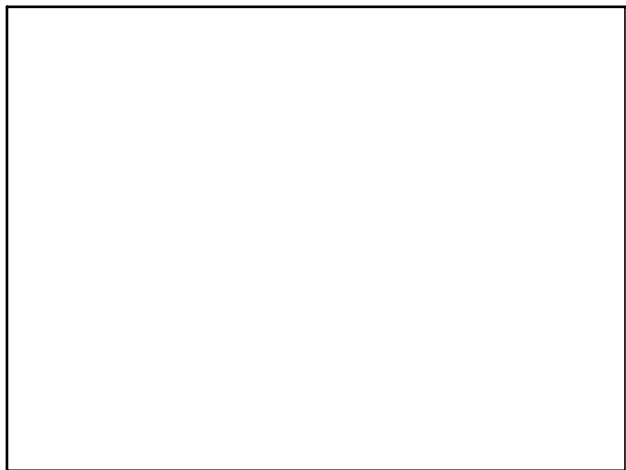
Simplify

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

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

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

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