

April 27th

Due Today: hw 11.2

Due Tomorrow: HW 11.3

Unit 11: Algebraic Fractions

Lesson 11.3: Adding/ Subtracting Algebraic Fraction

**Get Ready:**Answers to HW 11 

1) 5

2) 0

3) -1

4) undefined

5)  $\{-1\}$

6)  $\{0\}$

7)  $\{2, -3\}$

8)  $\{2, -2\}$

9) none

10)  $\{1, -2\}$

11)  $\frac{1}{x-1}$

12)  $x^3$

13)  $\frac{v-5}{5v}$

14)  $\frac{(v-2)(2v-1)}{7v-10}$

## Homework Review

$$\frac{0}{8} = 0 \checkmark \text{ "}$$

$$\frac{8}{0} = \text{und. } \text{ "}$$

$$\textcircled{a} \quad \frac{2r+4}{5} = 0$$

$$5 = 0$$

No ex. Vals

$$(10) \quad \frac{3x^2 + 9x + 6}{3x^2 + 3x - 6}$$

$$3x^2 + 3x - 6 = 0$$

$$3(x^2 + x - 2) = 0$$

$$3(x+2)(x-1) = 0$$

$$x+2=0, x-1=0$$

$$\boxed{\text{ex vals: } -2, 1}$$

(14)

$$\frac{12v^2 - 30v + 12}{42v - 60} \text{ gcf + acgc}$$

$$42v - 60 \text{ gcf}$$

$$6(2v^2 - 5v + 2)$$

$$\begin{array}{r} -5 \\ + \\ -4 \quad -1 \\ \hline 4 \end{array}$$

$$\frac{(2v-4)(2v-1)}{2} \quad \frac{(v-2)(2v-1)}{1}$$

$$6(v-2)(2v-1)$$

$$42v - 60 \text{ gcf}$$

$$6(7v - 10)$$

$$\frac{6(v-2)(2v-1)}{6(7v-10)}$$

$$\frac{(v-2)(2v-1)}{(7v-10)}$$

$$\textcircled{13} \quad \frac{v^2 - 3v - 10}{5v^2 + 10v} \diamond$$

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

$$\boxed{\frac{v-5}{5v}}$$

## algebraic Fractions

1. Evaluate
2. Ex. values
3. Simplify
4. Add + Subtract. ~~X~~
5. mult. + dividing

11.3

## Adding/Subtracting Fractions

$$\frac{\cancel{3}}{\cancel{3}} \frac{3}{2} + \frac{5}{3} \frac{\cancel{2}}{\cancel{2}}$$

$$\frac{9}{6} + \frac{10}{6} = \frac{19}{6}$$

## Adding / Subtracting Algebraic Fractions

Example 1:

$$\frac{2x + 1}{5x} + \frac{3x - 6}{5x}$$

$$\frac{2x+1 + 3x-6}{5x}$$

$$\frac{\boxed{5x - 5} \text{ gcf}}{5x}$$

$$\frac{\cancel{5}(x-1)}{\cancel{5}x}$$

$$\boxed{\frac{x-1}{x}}$$

## Adding / Subtracting Algebraic Fractions

Example 2:

$$\frac{\cancel{(x-2)} 6}{\cancel{(x-2)} 3} - \frac{x-4}{x-2} \left( \frac{3}{3} \right)$$

$$\frac{\cancel{6}(x-2)}{3(x-2)} - \frac{\cancel{3}(x-4)}{3(x-2)}$$

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

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

\* first the  
Numerators  
NOT the  
denominators

1. use fancy versions of one to get a common denominator
2. add/sub across the numerator
3. factor + simplify if you can!



**Example 3:**

$$\frac{2x+8}{2x+8} \cdot \frac{4x}{3x} - \frac{6}{2x+8} \cdot \frac{3x}{3x}$$

$$\frac{4x(2x+8)}{3x(2x+8)} - \frac{6(3x)}{3x(2x+8)}$$

$$\frac{8x^2 + 32x - 18x}{3x(2x+8)} = \frac{8x^2 + 14x}{3x(2x+8)}$$

$$= \frac{2x(4x+7)}{3x(2x+8)}$$

$$= \frac{2(4x+7)}{3(2x+8)}$$

$$1) \frac{3}{4x^2} + \frac{4x}{2x^3} = \frac{6x^3}{8x^5} + \frac{16x^3}{8x^5} = \frac{22x^3}{8x^5} = \frac{11}{4x^2}$$

$$\frac{v+b}{2v}$$

$$2) \frac{6}{2v} + \frac{2v}{4v} = \frac{6}{2v} + \frac{2v}{4v}$$

$$\frac{24v}{8v^2} + \frac{4v^2}{8v^2} = \frac{4v^2 + 24v}{8v^2} = \frac{4v(v+6)}{8v^2}$$

$$3) \frac{v-2}{3v-3} - \frac{3}{4}$$

$$4) \frac{4}{3} + \frac{5b}{3b^2 - 6b}$$

$$5) \frac{6x}{4x+24} + \frac{2}{x+6}$$

$$6) \frac{6}{x+6} - \frac{5}{x+5}$$

$$1) \frac{3}{4x^2} + \frac{4x}{2x^3}$$

$$\frac{11}{4x^2}$$

$$3) \frac{v-2}{3v-3} - \frac{3}{4}$$

$$\frac{-5v+1}{12(v-1)}$$

$$5) \frac{6x}{4x+24} + \frac{2}{x+6}$$

$$\frac{3x+4}{2(x+6)}$$

$$2) \frac{6}{2v} + \frac{2v}{4v}$$

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

$$4) \frac{4}{3} + \frac{5b}{3b^2-6b}$$

$$\frac{4b-3}{3(b-2)}$$

$$6) \frac{6}{x+6} - \frac{5}{x+5}$$

$$\frac{x}{(x+6)(x+5)}$$

RECAP: 1. get a common denominator  
2. add/sub across the numerators  
3. Factor + Simplify!

HOMEWORK:

hw 11.3

\* take your time \*

NEXT TIME:

mult. +  
div.  
alg. fractions

