Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

6.3 – Adding and Subtracting rational expressions

When adding and subtracting fractions you must..

Things to remember before adding and subtracting fractions:

**Ex 1:** Find the common denominators for the following rational expressions

a) $\frac{4}{x^{2}}, \frac{5}{x^{3}}$ b) $\frac{3x+1}{x}, \frac{7}{x+1}$ c) $\frac{x^{2}}{x^{2}+5x+6}, \frac{7x+1}{x^{2}-6x-16}$

YOU TRY

Find a common denominator for the following rational expressions

a) $\frac{x-1}{x+1}, \frac{3}{x^{2}}$ b) $\frac{1}{x^{2}-10+24}, \frac{x^{2}}{x^{2}+3x-54}$ c) $\frac{8x+8}{4x^{2}-9}, \frac{2x}{2x^{2}-x-3}, \frac{5x+11}{x^{2}-4x-5}$

**Ex 2:** Add and subtract the following $\frac{2}{3x^{2}+12x}+\frac{8}{2x}-\frac{5+x}{x-4}$ . State the NPV

**Solution:**

**Ex 3:** Simplify the following. Find the NPV. $\frac{5x}{x+1}-\frac{7x+1}{x-1}$

**Ex 4:** Simplify the following and find the NPV. $\frac{1+\frac{1}{x}}{x-\frac{1}{x}}$

YOU TRY! Add/subtract and simplify. State the NPVs

a) $\frac{u-v}{8v}+\frac{6u-3v}{8v}$ b) $6-\frac{x+5}{(7x-5)(x+4)}$

c) $\frac{3}{b-8}+\frac{7}{b+3}$ d) $\frac{5n+5}{5n^{2}+35n-40}+\frac{7n}{3n}$

e) $\frac{\frac{5}{4}}{\frac{5}{m}-\frac{4}{m^{2}}}$

HW Pg. 336 #3, 6-10, 15 ab, 16, 19a