

Name: _____

Date: _____

HW Pre-Calculus 11 Section 6.3 Adding and Subtracting Rational Expressions

1. Unscramble the words to complete the following sentence:

When adding or subtracting two fractions, they must have a "moncmo tmaenodnior"

2. Given the three rational expressions, what is the common denominator?
- $\frac{1}{2x}$
- ,
- $\frac{1}{x+2}$
- ,
- $\frac{1}{x-2}$

3. Add or Subtract each of the following rational expressions:

a) $\frac{x}{2} - \frac{8}{3x}$	b) $\frac{5}{x} - \frac{2}{x+1}$	c) $\frac{3}{x+1} + \frac{2}{x-1}$
d) $\frac{2}{x+5} + \frac{3}{x^2+5x}$	e) $\frac{5x}{2} + \frac{3}{x} - \frac{4x}{3}$	f) $\frac{4}{x+8} - \frac{3}{x} + \frac{2}{3}$
g) $\frac{5x}{3x+9} - \frac{4x}{2x+6}$	h) $\frac{9}{x+2} + \frac{7}{x^2-4}$	i) $\frac{5}{x-1} + \frac{4x}{1-x} + \frac{x+3}{x-1}$

4. Factor and simplify. Then state all the NPV's:

a) $\frac{4x^2 - 20x}{x^2 + 2x - 35} + \frac{3x - 6}{x^2 - 12x + 20}$

NPV's:

b) $\frac{2x - 6}{x^2 - 5x + 6} - \frac{3x - 12}{x^2 - x - 12}$

NPV's:

c) $\frac{2x}{3x^2 - 11x + 6} - \frac{3x - 12}{3x^2 - 14x + 8}$

NPV's:

d) $\frac{2x}{3-x} - \frac{3x}{x+3} + \frac{2}{x^2-9}$

NPV's:

e) $\frac{w-6}{w^2-12w+36} + \frac{7w+56}{w^2+11w+24}$

NPV's:

f) $\frac{-4c-4}{c^2+2c-15} + \frac{6c+42}{c^2+12c+35}$

NPV's:

g) $\frac{a}{a+b} - \frac{b}{b-a} + \frac{2ab}{a^2-b^2}$

h) $\frac{2x}{3-x} - \frac{3x}{x+3} + \frac{2}{x^2-9}$

NPV's:

NPV's:

5. Given each of the following statements, indicate whether if they are true or false: Explain:

i) $\frac{x}{y} - \frac{y}{x} = \frac{x-y}{xy}$ TRUE / FALSE

ii) $\frac{x-y}{y-x} = -1$ TRUE / FALSE

iii) $\frac{wx+wy}{w+v} = \frac{x+y}{v}$ TRUE / FALSE

iv) $\frac{1}{x-y} + \frac{1}{y-x} = 0$ TRUE / FALSE

6. Simplify and find all the NPV's

a) $\frac{x+1}{x+6} + \frac{x^2+4x+3}{x^2+x-6} \times \frac{x^2-2x}{x^2-1}$

b) $\frac{x+8}{x-3} - \frac{6x^2+x-2}{24x^2+7x-6} \div \frac{2x^2-7x+3}{8x^2-3x}$

NPV's:

NPV's:

7. Simplify and state all the NPV's:

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

8. Challenge: if $\frac{1}{a(b+1)} + \frac{1}{b(a+1)} = \frac{1}{(a+1)(b+1)}$, then what is the value of $\frac{1}{a} + \frac{1}{b}$?