Name: **Date:**
Algebra 2

Adding and subtracting rational expressions

1. Find the least common denominator for each problem below. You DO NOT have to do the addition.

a. $\frac{7}{100}+\frac{3}{20}$ b. $\frac{8}{15}+\frac{5}{21}$ c. $\frac{4}{9}+\frac{5}{12}$

d. $\frac{5}{x}+\frac{6}{x+1}$ e. $\frac{5}{2x}+\frac{3}{7x^2}$ f. $\frac{5}{x^2+x}+\frac{2x}{x^2-1}$

Add of subtract the following. Your answers should be single fractions, reduced if possible.

2. $\frac{5}{3x}-\frac{2}{3x}$ 3. $\frac{6}{5x}-\frac{3}{x}$

4. $\frac{x+1}{x^2}-\frac{2}{x}$ 5. $\frac{2}{x-3}+\frac{3}{x-2}$

6. $\frac{x+1}{x^2-4}-\frac{3}{x+2}$ 7. $\frac{x-1}{x}-\frac{x}{x-1}$

8. $\dfrac{3x}{x^2-9}+\dfrac{4}{x^2+3x}$

9. $\dfrac{2x-1}{x-3}-\dfrac{4x+2}{x+3}$

10. $\dfrac{x}{x-3}-\dfrac{x-2}{x^2-2x-3}$

11. $\dfrac{x-1}{x^3-4x}-\dfrac{3}{x^3-2x^2}$

Answers:

1a. 100 b. 105 c. 36 d. $x(x+1)$ e. $14x^2$ f. $x(x+1)(x-1)$

2. $\dfrac{1}{x}$ 3. $\dfrac{-9}{5x}$ 4. $\dfrac{-x+1}{x^2}$ 5. $\dfrac{5x-13}{(x-2)(x-3)}$ 6. $\dfrac{-2x+7}{x^2-4}$ 7. $\dfrac{-2x+1}{x(x-1)}$

8. $\dfrac{3x^2+4x-12}{x(x+3)(x-3)}$ 9. $\dfrac{-2x^2+15x+3}{(x-3)(x+3)}$ 10. $\dfrac{x^2+2}{(x-3)(x+1)}$ 11. $\dfrac{x^2-4x-6}{x^2(x+2)(x-2)}$