



Name \_\_\_\_\_ Date \_\_\_\_\_ Period \_\_\_\_\_

## ADDING AND SUBTRACTING RATIONAL EXPRESSIONS WORKSHEET

- Steps:
- 1) Factor the denominator of each fraction and find the LCD.
  - 2) Multiply the numerator AND denominator of each rational expression by whatever factors are missing *compared to the common denominator*.
  - 3) Combine the fractions by adding or subtracting the numerators and keeping the LCD.
  - 4) Simplify the numerator by distributing and combining like terms.
  - 5) Factor the numerator if possible to simplify or reduce the rational expression if you can.

**Add or subtract the rational expressions.**

1)  $\frac{m-3n}{6m^3n} - \frac{m+3n}{6m^3n}$

2)  $\frac{5}{5n^2+n-6} + \frac{n-6}{5n^2+n-6}$

3)  $\frac{3}{x+7} + \frac{4}{x-8}$

4)  $\frac{7}{3} - \frac{8}{12x-8}$

5)  $\frac{2}{3x^2+12x} + \frac{8}{2x}$

6)  $\frac{6}{z-5} - \frac{z+5}{z^2-25}$

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

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

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

$$10) \frac{2}{3x^2+12x} + \frac{8}{2x}$$

$$11) \frac{2}{x+3} - \frac{6x}{2x+1}$$

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

$$13) \frac{x}{x+3} - \frac{3}{x+2} - \frac{1}{x^2+5x+6}$$

$$14) \frac{2x}{x^2-4} \div \frac{4}{x^2-4x+4} + \frac{12}{x^2-4} \cdot \frac{2-x}{3}$$