

## Adding and Subtracting Rational Expressions

Warm-up:

$$1. \frac{2}{7} + \frac{3}{7}$$

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

$$3. \frac{6}{11} - \frac{4}{5}$$

$$4. \frac{2}{3} - \frac{1}{6}$$

Examples: Adding Rational Expressions (like and unlike denominators)

$$1. \frac{x}{x+4} + \frac{5}{x+4}$$

$$2. \frac{2x+1}{x^2+3x} + \frac{3x-8}{x(x+3)}$$

$$3. \frac{10x-5}{2x+3} + \frac{8-4x}{2x+3}$$

$$4. \frac{x-5}{x+5} + \frac{3x-21}{x+5}$$

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

$$6. \frac{x+6}{x^2-4} + \frac{2}{x^2-5x+6}$$

$$7. \frac{2x}{3x+4} + \frac{4x^2-11x-12}{6x^2+5x-4}$$

Examples: Subtracting Rational Expressions (unlike denominators)

$$8. \frac{x+1}{x^2-6x-16} - \frac{x+1}{x^2+6x+8}$$

$$9. \frac{1}{3x} + \frac{1}{6x} - \frac{1}{x^2}$$

$$10. \frac{3x-5}{x^2-25} - \frac{2}{x+5}$$

## Class Work

1.  $\frac{3}{x+1} + \frac{11}{x+1}$

2.  $\frac{3x}{4y^2} - \frac{y}{10x}$

3.  $\frac{9y+2}{3y^2-2y-8} + \frac{7}{3y^2+y-4}$

4.  $\frac{x^2-2x-3}{x^2-9x+18} - \frac{x^2-5x-6}{x^2+9x+8}$