

## Lesson 9.5 Addition, Subtraction and Complex Fractions

### Part 1: Addition and Subtraction

**Recall:**

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

$$\frac{2}{7} - \frac{4}{7}$$

$$\frac{2}{4} + \frac{1}{3} + \frac{5}{6}$$

\*\* In order to add or subtract fractions they must have a \_\_\_\_\_

**Examples:** Simplify.

a.  $\frac{3}{2x} - \frac{7}{2x}$

b.  $\frac{3x}{x-4} + \frac{6}{x-4}$

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

d.  $\frac{4}{3x^3} + \frac{x}{6x^3+3x^2}$

e.  $\frac{10}{x^2-5x-14} - \frac{2}{x-7}$

## Part 2: Complex Fractions

A **complex fraction** is a fraction that contains a fraction in the numerator or denominator

### **\*\* Remember!**

Dividing a fraction is the same as \_\_\_\_\_ by the \_\_\_\_\_.

**Examples:** Simplify

a. 
$$\frac{\frac{3}{x-4}}{\frac{1}{x-4} + \frac{3}{x+1}}$$

b. 
$$\frac{\frac{2}{x-1}}{\frac{4}{x-1} + \frac{1}{x}}$$

c. 
$$\frac{\frac{4}{x^2-9} + \frac{2}{x-3}}{\frac{1}{x+3} + \frac{1}{x-3}}$$

## Lesson 9.6 Solving Rational Equations

**Recall:** Solve

$$\frac{1}{3}x + \frac{1}{6} = 4$$

\*\* To solve multiply by the \_\_\_\_\_.

**Examples:** Simplify.

a.  $\frac{5}{x} - \frac{1}{2} = \frac{12}{x}$

b.  $\frac{5x}{x+1} = \frac{4}{1} - \frac{5}{x+1}$

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

\*\* When two fractions are equal to each other (\_\_\_\_\_), use  
\_\_\_\_\_ to solve.

d.  $\frac{3}{x^2+4x} = \frac{1}{x+4}$