Algebra 1.5 7.6 **Solving Equations Containing Rational Expressions**

* Solve equations containing rational expressions.

**Example 1:**  Simplify. $\frac{x}{6}=\frac{x}{4}-\frac{3}{8}$

**Example 2:**  Simplify. $\frac{2}{x}=\frac{5}{x}-\frac{1}{4}$

***Extraneous Solution*:** An apparent solution that does **not** solve its equation.

**To solve an equation that contains rational expressions:**

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the rational expressions by multiplying both sides of the equation by their LCD.

2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the equation using the methods we learned in Chapters 2 (linear equations) and 7 (quadratic equations).

3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ your solution(s) in the original equation. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ any extraneous solutions.

**Example 3:**  Simplify. $\frac{x}{x-6}=\frac{2}{6}$

**Example 4:**  Solve. $\frac{2}{3x+1}=\frac{1}{x}-\frac{6x}{3x+1}$

**Example 5:**  Simplify. $\frac{2a}{a+7}-1=\frac{1}{a^{2}+10a+21}+\frac{a}{a+3}$

**Homework:** Pg 542 #16-56 by 4s