**8.6 Solve Rational Equations**  Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Methods for Solving Rational Equations**

 1) Multiplying through by the LCD

 2) Cross Multiplication

**Example 1**: Solve the rational equation by cross multiplying

 Solve: 

**Example 2**: Write and use a rational model

 An alloy is formed by mixing two or metals. Sterling silver is an alloy composed of 92.5% silver and 7.5% copper by weight. Jewelry silver is composed of 80% silver and 20% copper by weight. How much pure silver should you mix with 15 ounces of jewelry silver to make sterling silver?

**Example 3**: Standardized Test Prep

 What is the solution of 

**Example 4**: Solve the rational equation with two solutions

 Solve: 

**Vocabulary**

**Extraneous Solutions -**

**Example 5**: Check for extraneous solutions

 Solve: 

**Example 6**: Solve a rational equation given a function

 From 1995 through 2003, the annual sales S (in billions of dollars) of entertainment software can be modeled by

 

 where *t* is the number of years since 1995. For which year were the total sales of entertainment software about $5.3 billion?