**Module 2 Lesson #12: Solving Rational Equations**



Learning Targets:

I can….

* Identify a rational equation by knowing it contains at least one rational (fractional) expression and must contain at least one variable in the denominator.
* Solve a rational equation by first finding a common denominator by factoring the denominators.
* Reject extraneous solutions by looking at restrictions on the domain.
* Verify my algebraic solution graphically.

**Identifying Rational Equations**

A rational equation …

Which of the following are rational equations?

**How do you add fractions?**

**THINK!!**

**Do you need to check for extraneous solutions?**

**Are there any restrictions on the domain for fractional equations?**

Try to solve this equation for x. Check your answer. List the steps you took.

Example 1: List the restrictions on the domain. Then find all possible solutions for the following rational equation.

More examples:

List the restrictions on the domain. Then find all possible solutions for the following rational equations. Check your answers against the restrictions.

2.

3.

4.

5.

Using a graphing Calculator to Solve a Rational Equation

Remember you can solve any equation on a calculator if you look for intersections points!!!!

Try typing this in

Hints

1. Make right side = Y1 and lefts side =Y2
2. Use parenthesis carefully OR use fraction function
3. 2nd – Calc – Intersection
   1. Get little bug dude close to intersection, hit enter 3 times
4. Don’t forget to check your answers in case you typed something wrong.

Extra Examples:

Find the solution to each of the following problems: