Solving Rational Equations

A rational equation is an equation that contains one or more \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

When solving rational equations, follow these steps:

1. Factor the denominator(s) and then find the LCD of all the denominators.
2. Multiply both sides of the equation by the LCD (no more fractions!)
3. Solve for the variable with appropriate method (either linear or quadratic).
4. CHECK YOUR SOLUTION(S) in the original equation. Check if the solution makes the denominator =0. If it does, it is extraneous and is NOT a part of the final answer.

Ex 1: LCD: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

$\frac{1}{4}+\frac{6}{8x}=\frac{1}{2}$

Ex 2: LCD: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

$$\frac{9}{28}+\frac{3}{x+2}=\frac{3}{4}$$

Ex 3: LCD: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

$$\frac{2x+1}{x+1}=\frac{2}{6}$$

Ex 4: LCD: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

$$\frac{5}{x-5}=\frac{x}{x-5}-1$$

Ex 5: LCD: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

$$\frac{x}{x-1}-1=\frac{x}{2}$$

Ex 6: LCD: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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

Ex 7: LCD: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

$$\frac{3}{(x+2)(x+3)}+\frac{x-1}{x+2}=\frac{7}{x+3}$$