

5-4 Solving Rational Equation Notes

A rational equation is an equation that contains _____

When solving rational equations, you must follow these steps:

1. Factor the denominator(s) (if possible) and then find the LCD of all the denominators.
2. Multiply every term in the equation by the LCD – write this out!!!
3. Solve for the variable with the appropriate method.
4. CHECK YOUR SOLUTION(S) in the original equation for extraneous solutions! Remember you want to make sure the denominator $\neq 0$!

Examples: Solve each rational equation!

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

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

$$3. \frac{2x+1}{x+1} = \frac{2}{6}$$

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

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

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

$$7. \frac{3}{x^2+5x+6} + \frac{x-1}{x+2} = \frac{7}{x+3}$$

$$8. \frac{2}{x+2} - \frac{x}{2-x} = \frac{x^2+4}{x^2-4}$$