Rational Equations:

A rational equation is an equation with one or more rational expression in it.

\[ \frac{1}{2}x + \frac{21}{20} = \frac{1}{5}x \]

\[ \frac{3}{y} + \frac{4}{3} = -1 \]

\[ \frac{4}{b+2} + \frac{2}{b-2} = \frac{8}{b^2-4} \]

Steps to solve rational equations:

1. Factor denominators completely. *Notice values for which the equation is undefined.*

2. Identify the LCD

3. Multiply both sides by LCD (clear fractions)

4. Solve the resulting equation

5. Check by substitution and eliminate solutions from step 4 which make a denominator equal zero. (extraneous solutions)