

## 2.7 Solving Rational Equations

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Rational Equation: an eq. (has an =) made up of 1 or more rational expressions

steps -

- find restrictions (why do I have restrictions?)
- Find the LCD
- Multiply each term in eq. by LCD to clear fractions
- solve the equation
- check for extraneous solutions

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

$$x - \frac{3x}{x+2} = \frac{6}{x+2}$$

$$x - \frac{7}{x} = 6$$

$$\frac{2x}{x-1} + \frac{1}{x-3} = \frac{2}{x^2 - 4x + 3}$$

### Mixture Problems

$$\% = \frac{\text{part}}{\text{whole}} \quad \text{concentration} = \frac{\text{acid}}{\text{total liquid}}$$

How much pure acid must be added to 70 mL of a 30% acid solution to reach mixture of 45% acid?

How much pure juice must be added to 100 mL of a 75% juice drink to reach a drink of 95% juice?

You want to put a rectangular pool in your backyard, you have an area of 200 square meters. To decrease costs, find the least perimeter of a rectangle with this area and the dimensions of the pool.