Other Types of Equations

To Solve Radical Equations:

- Isolate the radical on one side of the equation
- Raise each side to the power suggested by the index
- Solve
    - CHECK for *extraneous* solutions!!!!

To Solve Radical Equation Involving 2 Radical Expressions or Exponents:

- Isolate one of the radical terms (Pick the more difficult term)
- Eliminate that term
- Simplify
- Eliminate 2nd radical term
    - CHECK for *extraneous* solutions!!!

To Solve Absolute Value

- Isolate the absolute value term
- Set up 2 equations
    - One as it is written
    - One as the negative of what is written

Examples:

- What is the solution of $\sqrt{x+4}+6=7$?

- What is the solution of $(6x+9)^{\frac{1}{3}}-5=-2$?

- A parabolic goblet with a cup that is as wide as it is tall holds $1.74r^3$ oz. of water when it is full, where *r* is the radius in inches of the circular rim. What is the radius, to the nearest hundredth of an inch, of a goblet that holds 9 oz?

- What is the solution of $\sqrt{5x+14}=x$?

- What is the solution of $2 + \sqrt{x - 6} = \sqrt{x + 10}$?

- Solve: $|x^2 + 6x| = 3x + 18$