Summary for Solving Linear Equations
(containing one variable)

But first, some vocabulary:

Equivalent Equations are equations that have the same solution.

A term is: a) a lone number, or
                     b) a lone variable, or
                     c) a product of numbers and/or variables, or
                     d) the quotient of numbers and/or variables.

The Coefficient of a variable is the number that multiplies the variable.

       For example: In the term $4x$, the coefficient is 4.
                               In the term x, the coefficient is 1.
                               In the term $-x$, the coefficient is -1.
                               In the term $-10x$, the coefficient is -10.

       Also note that an equation has 2 sides, a right hand side (which is everything to the right of the equals sign) and a left hand side (which is everything to the left of the equals sign).

Steps for Solving Linear Equations

1.   If the equation has fractions (or decimals), multiply both sides of the equation by the LCD of all the fractions. This will get you an equivalent equation that won't have any fractions.

2.   Simplify on each side. (...meaning:)

          1.   Get rid of parenthesis (using the distributive property), and
          2.   Combine like terms.

3.   Make a decision as to what side you want your variable on (left or right). Your numbers will then belong on the other side.

      (Assuming you chose the left hand side for your variable...)

4.   Get all variable terms on the left by getting them off the right. This is done by adding the opposite of that term to both sides.

5.   Get all numerical terms on the right hand side by getting them off the left. This is done by adding the opposite of that term to both sides.

Note: Steps **4** and **5** could be done at the same time.

6.   If you haven't already, combine the like terms on both sides.

7.   Divide both sides by the coefficient of the variable. (If this coefficient is a fraction, instead, multiply both sides by the reciprocal of the fraction.)