Introduction:
This program is intended to be used with the oversight of a teacher or some person knowledgeable in <u>ALL</u> the rules and little quirks of algebra. A brief summary of the generally most important rules can be found below. The purpose of the program is to help students to become more familiar with just the rules of algebra by focusing solely on the rules of algebra without any confusion from difficult calculations. Learning to separate calculations from simple rearranging of terms is an important step in understanding algebra concepts.

How To Play:
• The goal of the game is to get just one single X or Y and put it by itself alone on the left or right side of the equals sign, with no letters-- only numbers-- on the opposite side.

• Start by setting up a problem with the "build the left side" and "build the right side" mode selectors.

• Now select the "Play an operation card and number cards" mode. The program is designed for only one operation to be played at a time.

• When you play one operation with a number value, or one turn for the player, the cards played show up on the left and the right.

• Use the build modes and erase mode to edit the left side and then the right side based on the cards you played, or vice versa. Ask the person overseeing the game to confirm you followed the rules, and pay attention to when you need to use parentheses.

• Once the left side and right side are reconciled to the cards you played on your turn, clear out the cards played by clicking on the cards played while erase mode is selected. You are now ready to play your next turn.

Basic Algebra Rules:
• Operations can cancel
       powers and roots (careful with these)
       division and multiplication (careful with these too)
       addition and subtraction (usually straight forward)
•Don't break the Order of Operations (or hierarchy of abbreviation is a good way to think of it)
       1. parentheses
       2. powers and roots (think if it makes sense when figuring out which comes first)
       3. division and multiplication (think if it makes sense and know how fractions break apart)
       4. addition and subtraction
       Note: be aware of hidden parentheses, that is anywhere that parentheses are not written for convenience. Example 4 over 5 over 6   .. verses (4 over 5) over 6
•Multiply by -1 to change sign (innately covers division by -1)
       (ex. -1 times 4 = -4, ex. -1 times -4 = +4)

- Distribution and variations of distribution can be used
  - distribution
  - reverse distribution (factoring)
  - triple distribution
  - the quadratic formula and completing the square