Things You Need to Know for Lab.1 & LogicWorks

1. In finding the minterms and maxterm lists in the last step with inputs that never occur, read p.57 of the text.

2. Use decimal numbers for minterm and maxterm numbers. Do not use binary or hexadecimal.

3. Replace the gate with fan-out (in the schematic diagram) as shown on the left by the circuit on the right before you try to remove internal bubbles.
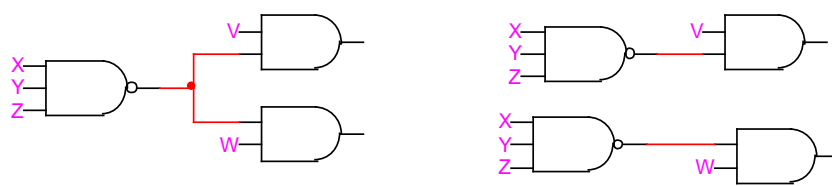

4. The only minimization you need in Lab. 1 is to combine duplicate gates. See the example below.
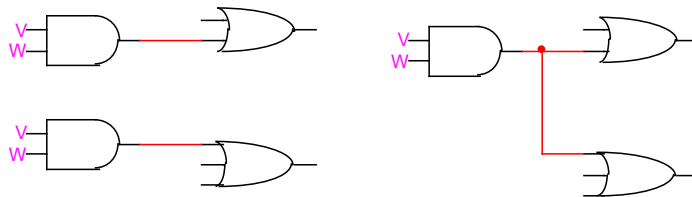
5. You don't need to use all the 16 AND/OR gates given to you. Move all unused gates to the right side of the schematic diagram.

6. If you need a logic 0 or logic 1 for a gate input, type "0" or "1" for LogicWorks 4.
   For LogicWorks 5, you have to use a 5-v DC power supply and a resistor to get logic 1 and the "ground" to get logic 0. See the example below. +5v, resistor, and ground are available in the LogicWork library.
   Never use a binary switch to generate 0 or 1. You have to pay for the switch and increase the cost of the product.
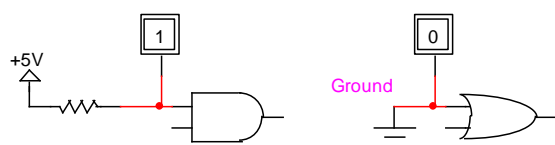
7. If a value of "Z" shows up in a binary probe, it means LogicWork cannot recognize the

value of the signal. For example, in the schematic template, G1 does not appear as an input from the hex keyboard, a binary swith that generates a signal of 0 or 1, or as an output of a gate/circuit. Therefore a value of "Z" shows up in the binary probe for G1. A binary probe value of "x" means that an output signal is generated from one or more unrecognizable inputs.

8. To type the name of a signal, left-click the mouse at "A" in the menu bar, the cursor will change to a pen. Left-click the mouse with the pen at the input or output of a gate, a rectangle will show up. Type inside the rectangle. The color of the signal name must be pink. If it is blue and the font size is smaller, it is not correct.

9. The following is an example of your schematic diagram. If a gate input is a literal (A, B, C, D, /A, /B, /C, /D), type it. If an input is not a literal, use lines to make connections. A diagram as the following is easy to draw and read.