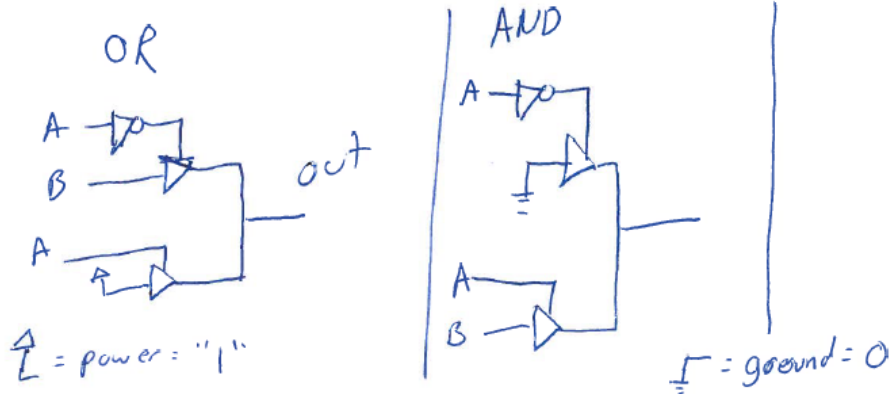


3. Any combinational logic circuit can be represented by a truth table. We know that we can convert any truth table to a logic statement in canonical sum-of-products form. A logic statement in canonical sum-of-products form uses only OR, AND, and NOT gates. Thus any logical statement can be represented using only OR, AND, and NOT gates. All we need to show is that we can build NOT, OR, and AND gates using only tri-state devices and NOT gates. Building a NOT gate with a NOT gate is trivial. Thus we just need to build AND and OR gates. The two figures below show how to build the OR and AND gates. Thus our proof is complete.



Problem 2:

