Notation

1. Definifitons
   (a) Axiom: known to be true statements, asserted as True, aren't proven.
   (b) Proposition: statements that can have a truth value of either true or false, should be proven. We use axioms to determine truth values of propositions.
2. Logical Symbols
   (a) not
   (b) and
   (c) or
   (d) implies
3. Propositional Equivalence

Truth Tables

1. Use truth tables to get truth values of complex propositions.
2. We specify functions by specifying their outputs for each possible output.
3. If final columns of two truth tables are the same, then two functions are logical equivalent of each other.

Distributive Laws

1. and and or distribution
   (a) s = {1,-1}
   (b) s = {1,2,3,4,5,6,7,8,9,10,11}
   (c) s = {0,1,4,9,16,25,36,49,64,81}
   (d) $\emptyset$
2. de morgan's
   (a) i
   (b) ii
   (c) iii
   (d) iv
3. double negation
4. quantifier distribution

Implications