1) For each logic formula given in the data file, tell its ‘type” (Tautology, unsatisfiable, or satisfiable).

and(x,or(y,z))
 Satisfiable
or(and(P,Q),Q)
 Satisfiable
imp(and(P,Q),or(P,Q))
 Tautology
imp(and(not(P),Q),or(P,and(Q, P)))
 Satisfiable
imp(P, Q)
 Satisfiable
imp(P, P)
 Tautology
imp(and(imp(P, Q), P), Q)
 Satisfiable
and(A, and(B, C))
 Satisfiable
and(not(or(A, and(B, C))), D)
 Satisfiable
and(input1, or(input2, input3))
 Satisfiable

2) For the truth table in slide 26, write its logic formula and the truth table generated by your program.

imp(and(x,y),z)

3) Add the algorithm assignment here.

1.Show that the following logic formulas are valid using the truth table:

◦ P ⇒ P

0 1
1 1

◦ ((P ⇒ Q) ∧ P) ⇒ Q

0 0 1
1 0 1
0 1 1
1 1 1

2.Show that Q is the logic consequence of {P⇒Q, P} (This is the problem 3.3 in the textbook, p. 45).

{P⇒Q, P} = ¬P ∨ Q ∨ P = Q