Lab#3

Question # 3

Given the Boolean function F = xy'z + x'y'z + xyz

a) List the truth table of the function.
b) Draw the logic diagram using the original Boolean Expression.
c) Simplify the algebraic expression using Boolean algebra.
d) List the truth table of the function from the simplified expression and show that it is the same as the truth table in part (a).
e) Draw the logic diagram from the simplified expression and compare the total number of gates with the diagram of part (b).

Question # 4

The following is an unsimplified Boolean algebra functions with Boolean variables A, B, C, D

f(A, B, C, D) = (A'BCD')+ (AB'C'D')+ (AB'C'D)+ (AB'CD')+ (AB'CD)+ (ABC'D')+ (ABC'D)+ (ABCD').

a) Draw the truth table of this Boolean function.
b) Draw the K-Map using the truth table.
c) Using K-Map rules of simplification, determine the simplified Boolean expression.

Question # 5

Given a Boolean expression:

F = AB + B'C