

Logic Design - Homework 4

(1) Draw the logic diagram for the following Boolean expressions:

(a) $XYZ' + XY' + X'Z$

(b) $X + X'(X'+Y) + (Y'+Z)$

(2) Using DeMorgan's theorem, express the function $F=A'BC + AC' + A'B$

(a) with only OR and complement operations

(b) with only AND and complement operations

(3) Express the following functions in sum of minterms and product of maxterms forms.

(a) $F(X,Y,Z) = (X+YZ)(Z+YX)$

(b) $F(X,Y,Z) = X' + X(X+Y')(Y'Z')$