Galala University, Faculty of Computer Science and Engineering

CSE 131 Logic Design

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Homework 4

## Problem: 2-1
Demonstrate by means of truth tables the validity of the following identities:
  (a) DeMorgan's theorem for three variables: (x+y+z)' = x'y'z' and
      (xyz)'=x'+y'+z'
  (b) The distributive law: x+yz = (x+y)(x+z)

## Problem: 2-4
Reduce the following Boolean expressions to the indicated number of literals:
  (a) A'C' + ABC + AC'          to three literals
  (b) (x'y'+z)' + z + xy + wz    to three literals
  (c) A'B(D'+C'D) + B(A+A'CD)    to one literal
  (d) (A'+C)(A'+C')(A+B+C'D)     to four literals

## Problem 2-5:
Find the complement of $F = x + yz$ ; then show that $FF' = 0$ and $F + F' = 1$

## Problem 2-8:

List the truth table of the function:
$$F = xy + xy' + y'z$$