EGC220 Problem Set 6 Dr. Izadi

First Name:_____ Last Name: _____

1. Simplify the following Boolean expression as much as possible.
   a. ABC + A'B +ABC'
   b. (X+Y)'(X'+Y')
   c. XY + X(WZ +WZ')

2. Without simplifying, find the dual of
   a. A'C' + ABC + AC'
   b. A'B(D'+C'D) + B(A + A'CD)

3. Without simplifying, find the complement of
   a. A'C' + ABC + AC'
   b. A'B(D'+C'D) + B(A + A'CD)

4. Reduce the following Boolean expression to the indicated number of literals:
   a. A'C' + ABC + AC' to three literals
   b. A'B(D'+C'D) + B(A + A'CD) to one literal

5. Find he complement of F = XY+Z'. Then show that FF' = 0 and F+F' =1

6. For function F = XY + XY' + Y'Z
   a. List the truth table.
   b. If possible, simplify the function further.
   c. Draw an AND OR implementation of the function.

7. For the following Boolean expression F = XY + X'Y'Z' + X'YZ', determine
   a. Truth table
   b. Sum of min terms
   c. Product of max terms
   d. Standard sum of products

8. For G = F' of problem 7, determine
   a. Truth table
   b. Sum of min terms
   c. Product of max terms
   d. Standard sum of products