COE 202, Term 052
Fundamentals of Computer Engineering

Quiz# 2

Date: Monday, March 6, 2006

Q.1. Prove the identity of each of the following Boolean functions using algebraic manipulation:

a. ABC + A'B + A'C' = B C + A'C'

= ABC + A'B + BC + A'C'	{Consensus on A of the 1st & 2nd term}
= A'B + BC + A'C'	{First term absorbed by 3rd term}
= BC + A'C'	{Consensus on C of the 2nd and 3rd term}
=RHS	

b. ABC + A'B'C' + A B' + A C' + A' B + A' C = 1

= A [BC + B' + C'] + A' [B'C' + B + C]	{Distributive law}
= A [BC + (B C)'] + A' [(B+C)' + B + C]	{Demorgan's law}
= A [1] + A' [1]	
= A + A'	
= 1 = RHS	