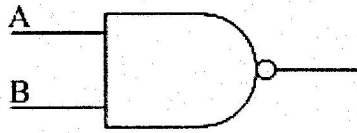


QUIZ

Boolean algebra and logic circuits.

1) Prove that:



is equivalent to



2) Minimize the following expressions algebraically:

a. $(A+C)(AD+\overline{AD})+AC+C$

b. $ABC+\overline{ABC}+\overline{ABC}+\overline{ABC}+ABC$

c. $B(A+C)+\overline{A}\overline{B}+\overline{B}\overline{C}+C$

3) Determine if the following Boolean identities are valid or not, by algebraic means:

a. $A+\overline{A}B=A+B$

b. $\overline{A}\overline{B}C+\overline{A}B\overline{C}+A\overline{B}\overline{C}+ABC=C(\overline{A}B+\overline{A}\overline{B})+\overline{C}(\overline{A}B+\overline{A}\overline{B})$

4) Reduce the following expressions using De Morgan's theorem:

a. $f = \overline{\overline{A}\overline{B}C + \overline{A}BC}$

b. $f = \overline{\overline{(\overline{A}BC + \overline{A}CD)} + BC}$

5) Simplify the following expressions using the Karnaugh map method:

a. $f = \overline{A}D + \overline{A}BC + \overline{A}BD + \overline{A}BC + \overline{A}BCD$

b. $f = ABD + ABCD + \overline{A}BCD + \overline{A}BCD + \overline{A}BD$ dont care $\overline{A}B\overline{D}$

6) Obtain logic functions for the following circuit:

