COEN/ELEN 921c Homework Assignment 2

Homework problems from our text.

2.6, 2.7(a & b), 2.13(a & d), 2.16, 2.23, 2.31

Problem (non-text)

Given the canonical minterm expression F(A,B,C,D) = ∑m(1,4,6,9,10,13,15)

a) Rewrite F in terms of its variables in the SOP form. (you do not need to try and reduce the equation)

$F(A,B,C,D) = \bar{A}\bar{B}\bar{C}D + \bar{A}\bar{B}\bar{C}\bar{D} + \bar{A}B\bar{C}D + A\bar{B}\bar{C}D + A\bar{B}C\bar{D} + AB\bar{C}D + ABCD$

$\bar{A}B\bar{C}\bar{D}$

b) Write the POS canonical form of F. You only need to show the maxterm form, ie.

F(A,B,C,D) = ∏M(A,B,C,D)

$F(A,B,C,D) = (A+B+C+\bar{D})(A+\bar{B}+C+D)(A+\bar{B}+\bar{C}+D)(\bar{A}+B+C+\bar{D})$
$(\bar{A}+B+\bar{C}+D)(\bar{A}+\bar{B}+C+\bar{D})(\bar{A}+\bar{B}+\bar{C}+\bar{D})$