CSC238S **Problem Set 2** **Due: Feb 26/96**

1. Problem 3.8.3 on page 119 of text.

2. Problem 3.11.4 on page 140 of text.

3. Problem 3.11.6 on page 140 of text.

4. Consider the Boolean function f defined by $f(x_1, \ldots, x_n) = (\sum_{i=1}^{n} x_i) \bmod 2$

   (a) Show that f can be represented by a propositional formula of length $O(n^2)$ over the basis {AND,OR,NOT}.

   (b) Show that any DNF formula F representing f has at least 2^{n-1} terms.