

CoE/EE 460
Spring 2001 : Lockwood

Homework #6: Due Monday, April 9, 2001
at 5:00pm, in EE homework box

Name:	
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1. Consider the Function:

$$f(a, b, c, d) = abcd + a'b + bc'd + acd'$$

(a) Draw the Binary Decision Diagram (BDD) for: $f(a, b, c, d)$

Attach Extra pages, as needed.

(b) Draw the Binary Decision Diagram (BDD) for: $f(b, c, d, a)$

Attach Extra pages, as needed.

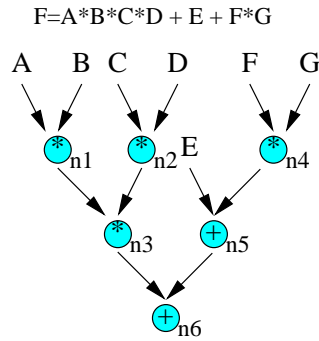
(c) Draw the Binary Decision Diagram (BDD) for: $f(c, d, a, b)$

Attach Extra pages, as needed.

(d) Draw the Binary Decision Diagram (BDD) for: $f(d, c, b, a)$

Attach Extra pages, as needed.

2. Consider the following Expression:



For each of the following values of K , use the Chortle algorithm to find an minimum cost (as measured by the number of K -input LUTs) to implement the function. Show ALL work to receive credit, including all intermediate values of the MinMap() and utilization division ($\mu(L, R)$) functions. Be sure to identify all solutions, even those of equal cost.

(a) $K = 2$: Attach Extra pages, as needed.

(b) $K = 3$: Attach Extra pages, as needed.

(c) $K = 4$: Attach Extra pages, as needed.

(d) $K = 5$: Attach Extra pages, as needed.