HW 4

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HW

- 1. For $f(A,B,C) = \prod M(0,4,6,7)$
  - (a) Express it in algebraic expression of Product of maxterms.
  - (b) Draw a k-map.
  - (c) Express it in minimum POS expressions

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- 2. Find minimum POS for each of the following equations.
  - (a) $f(a,b,c) = \prod M(1,2,3,6)$
  - (b) $f(a,b,c,d) = \Sigma m(4,6,9,10,11,12,13) + \Sigma d(2,15)$
  - (c) $f(a,b,c,d) = \prod M(1,3,5,13) \cdot \prod D(0,7,9)$
    - (D() represents don't care conditions in maxterms.)

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- 3. Ex. 1: Determine minimum SOP expression for the following Boolean expression using the Quine-McClusky algorithm. (15점)
  (각 단계별 풀이 과정을 포함하여야 합니다.)

$$f(a,b,c,d) = \sum m(4,5,6,8,9,10,13) + \sum d(0,7,15)$$

HW

- 4. Design a 4-bit adder ($a_3a_2a_1a_0 + b_3b_2b_1b_0$) using full adders. And verify your circuit using logisim-evolution simulator.
  - (a) 디자인한 회로를 캡쳐하여 제출하여라. (10점)
  - (b) test vector를 이용하여 모든 입력에 대해서 회로가 정상적으로 동작함을 보이는 test 결과를 캡쳐하여 제출하여라. (10점)