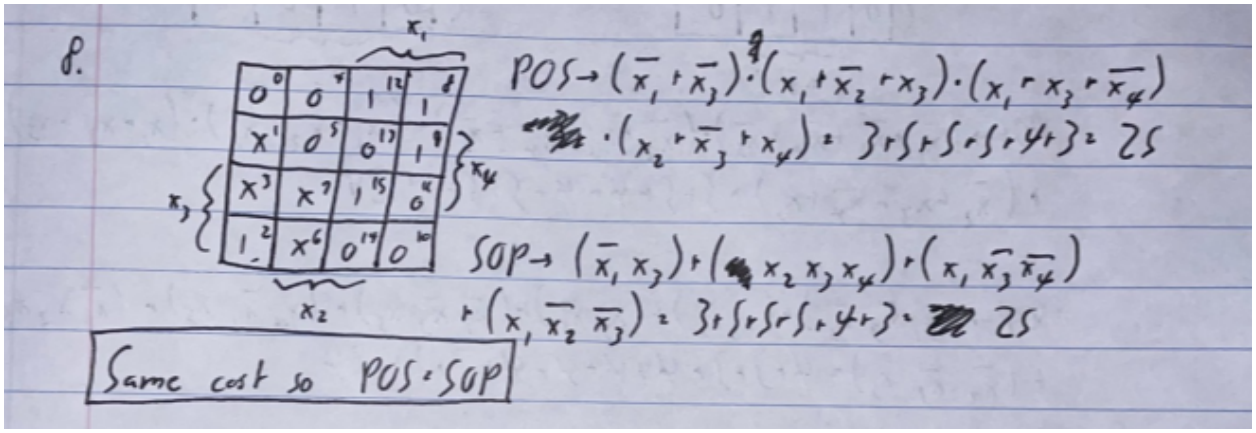
Homework 2&3 mistakes report

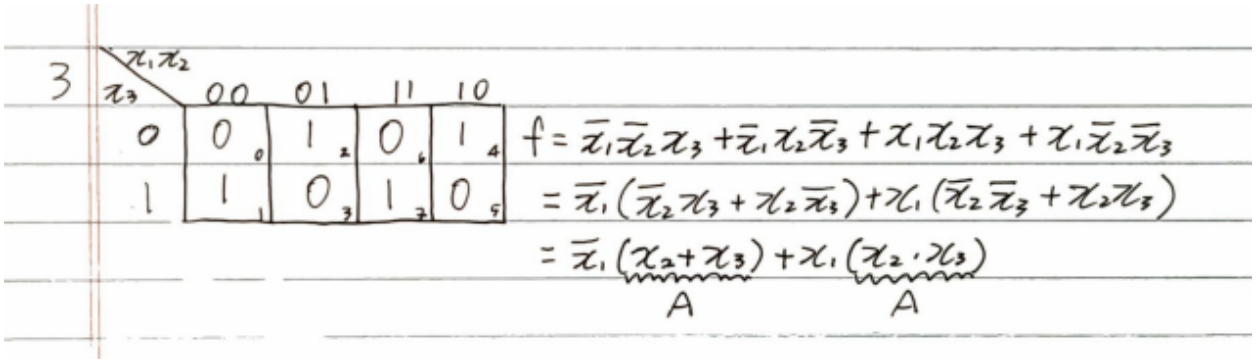
As seen from the below picture the student are not considering the inverse of the term when taking POS. I find this to be a common mistake. The below question is from question 8 from Assignment 3

Problem 8 *Find the minimum-cost SOP and POS forms for the function* $f(x_1, x_2, x_3, x_4) = \sum m(2, 8, 9, 12, 15) + D(1, 3, 6, 7)$. *Chose the minimum-cost expression by comparing POS and SOP forms. [10 marks]*



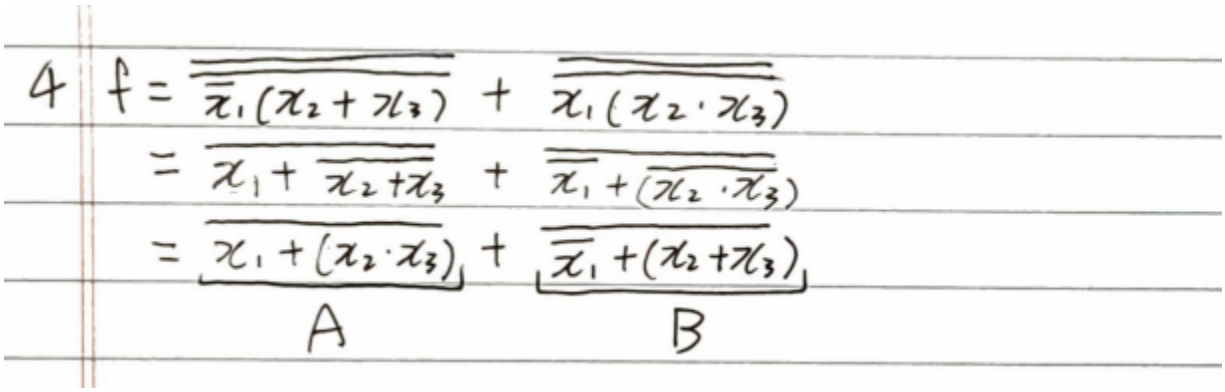
Problem 3 *Implement the function in Table 1 using only NAND gates. [10 marks]*

The students are confused with the notations of SOP and POS as demonstrated below. The below is question 3 from assignment 3

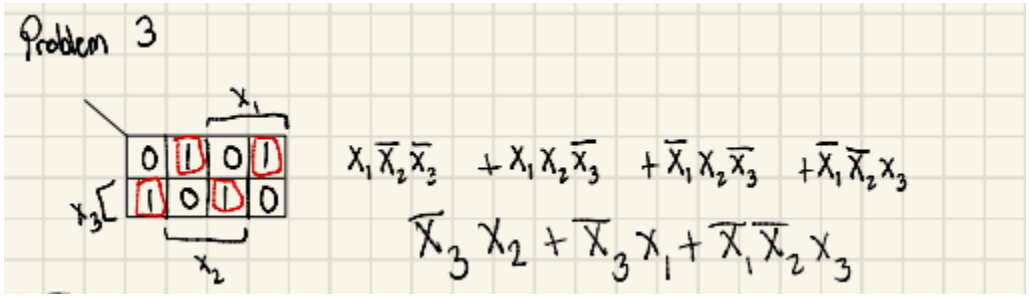


The below picture illustrates the same issue outlined above. Question 4 assignment 3

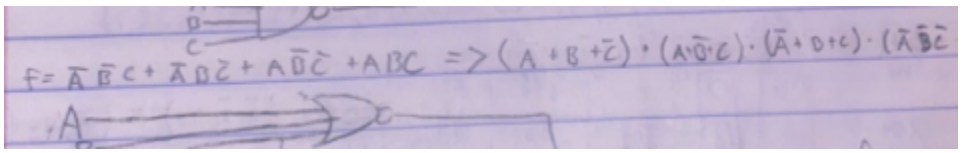
Problem 4 *Implement the function in Table 1 using only NOR gates. [10 marks]*



The students are confused about algebraic simplification and when to apply the simplification laws. The below is from problem 3 from assignment 3

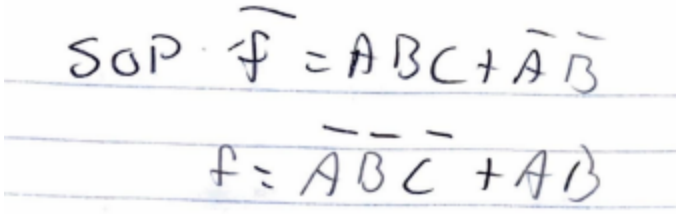


Some students are performing inverse of f to find POS from SOP as shown below which is problems 3,4 from assignment 3

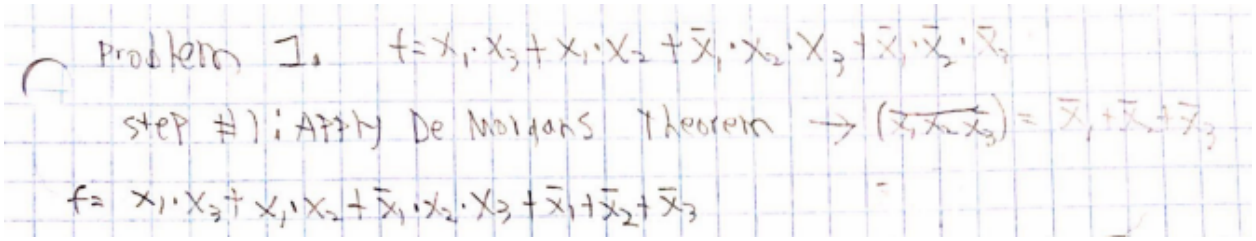


Some students are still confused about D-Morgan's laws as shown below problems from assignment 2 and 3

Problem 1 *If the SOP form for* $\bar{f} = AB\bar{C} + \bar{A}\bar{B}$*, then give the POS form for* f*. [10 marks]*



Problem 1 *Use algebraic manipulation to simplify the function* $f = x_1x_3 + x_1x_2 + \bar{x}_1x_2x_3 + \bar{x}_1\bar{x}_2\bar{x}_3$. *[10 marks]*



They are using the notation of replacing the ones with zeros(Not sure about the validity of such convention). The below is from problem 8 of assignment 3