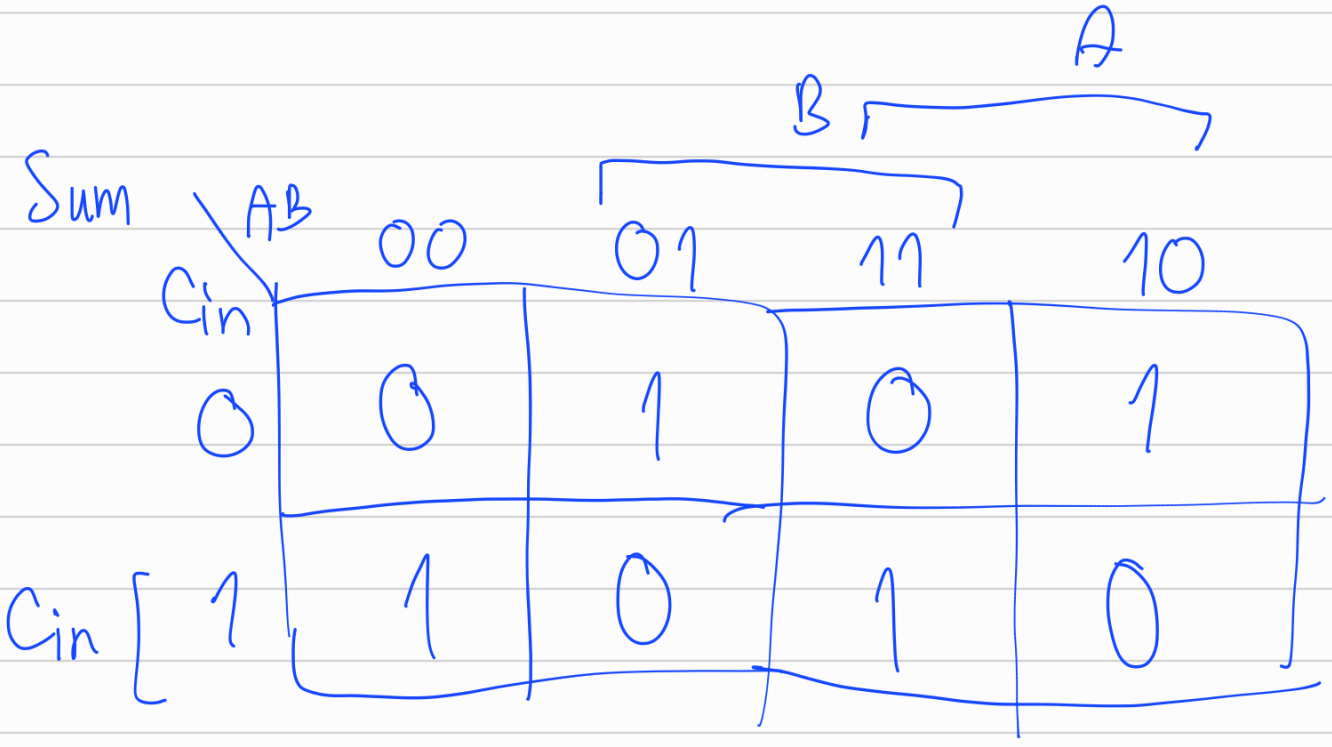
Lab 2

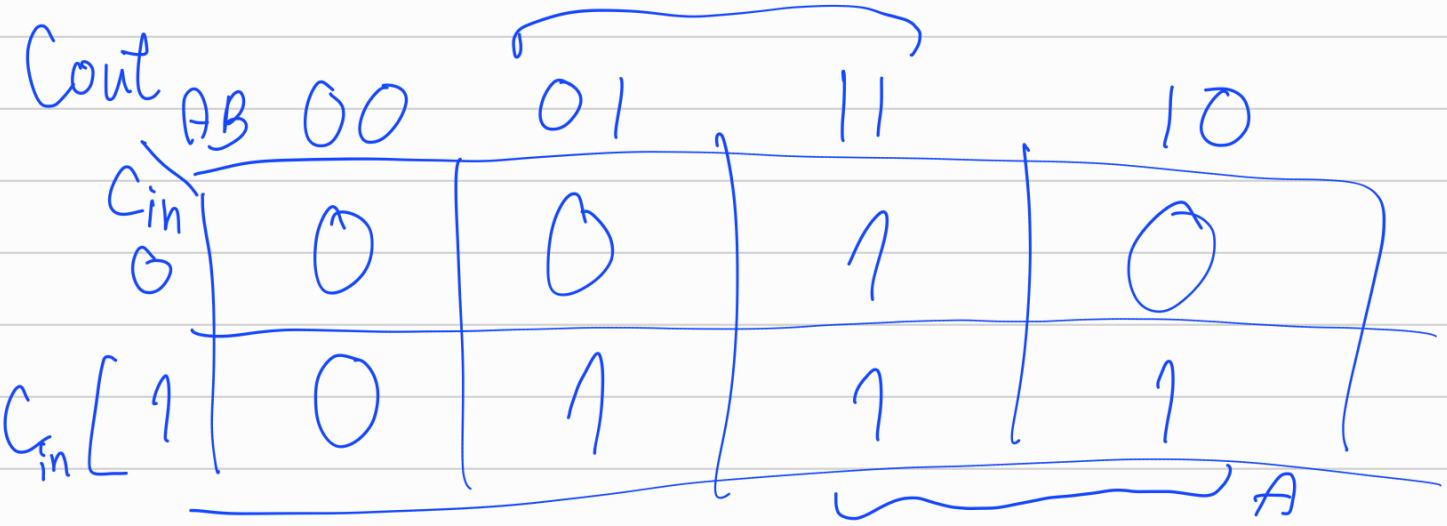
1) $M = AB' + A'B$

2) $M = (A+B) \cdot (A'+B')$



3) $M = A'B'C + A'BC' + ABC + AB'C'$

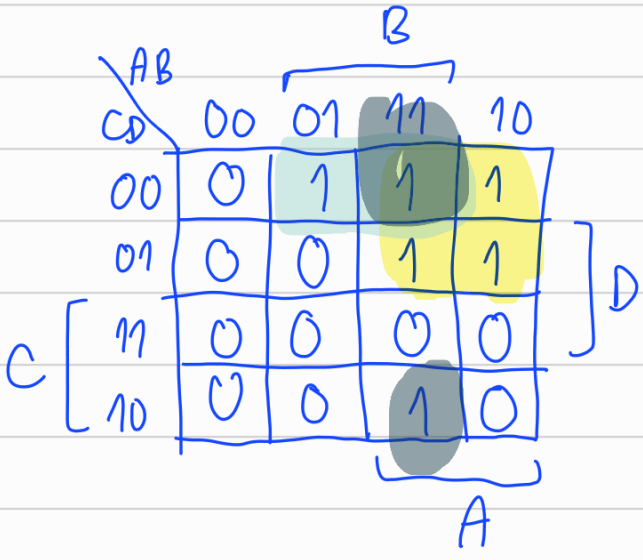
4) $M = (A+B+C)(A+B'+C')(A'+B'+C)(A'+B+C')$

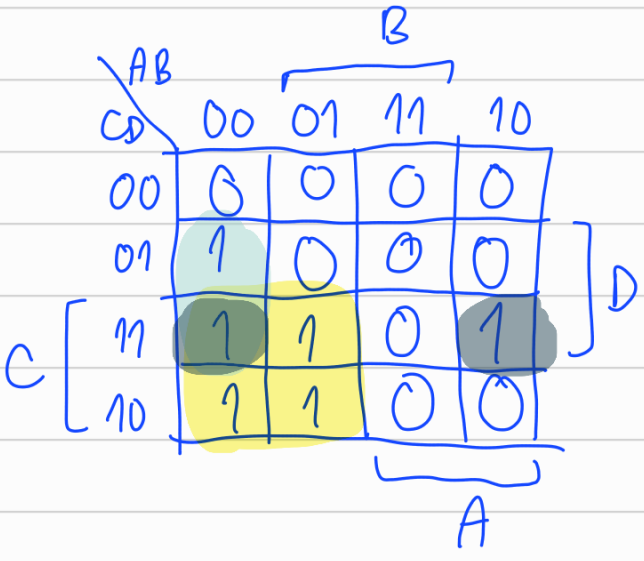


3) $M = AC + AB + BC$

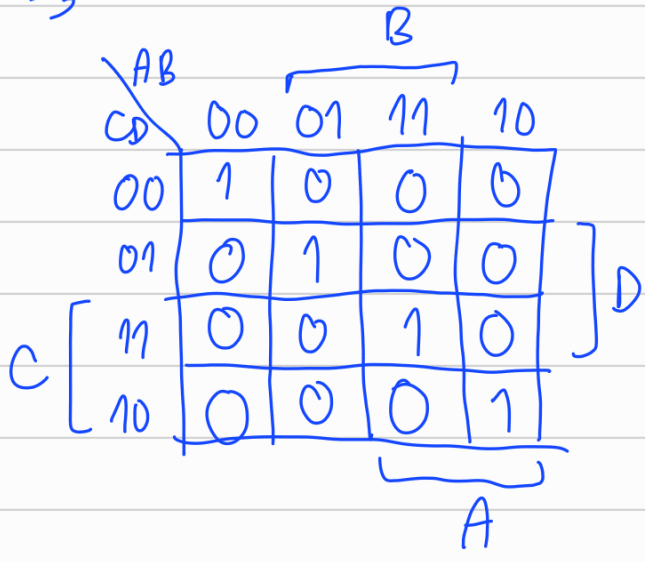
4) $M = (A+B)(A+C)(\cancel{A'+B+C})$
$(B+C)$

5) Σ_1 $m = AC' + BC'D' + ABD'$ Σ_2 $m = A'C + A'B'D + B'CD$



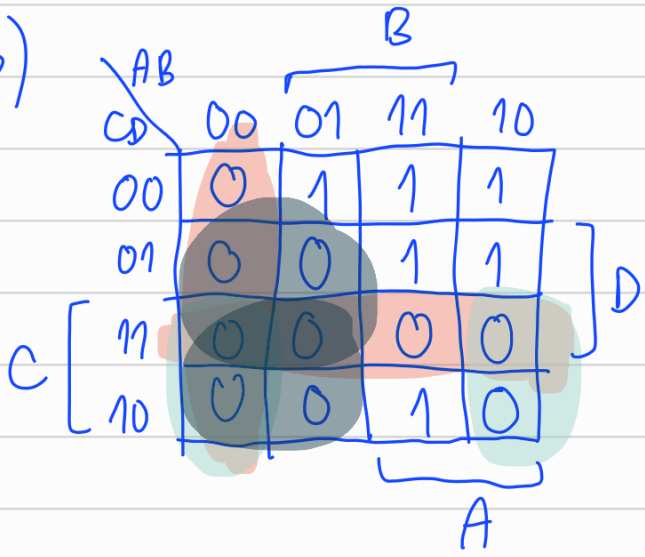


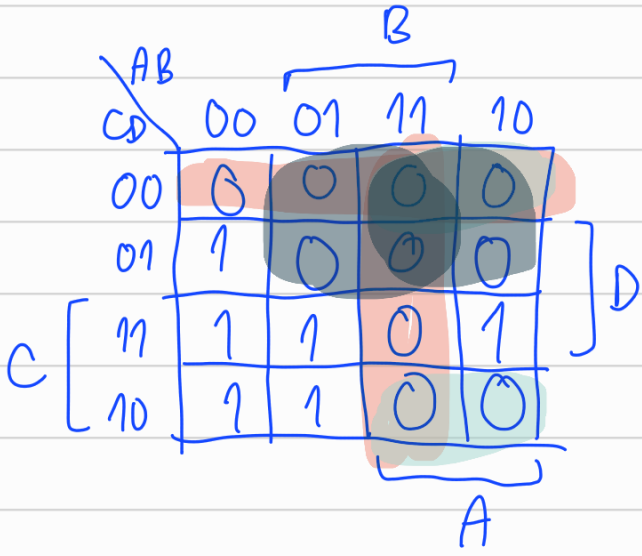
Σ_3



$m = A'B'C'D' + A'BC'D + ABCD + AB'CD'$

b)

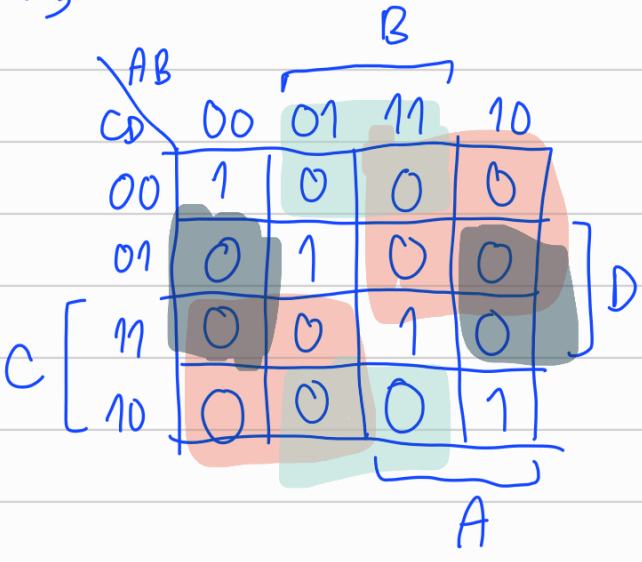




$Z_1, M = (A+B)(C'+D')(B+C')(A+D')(A+C')$

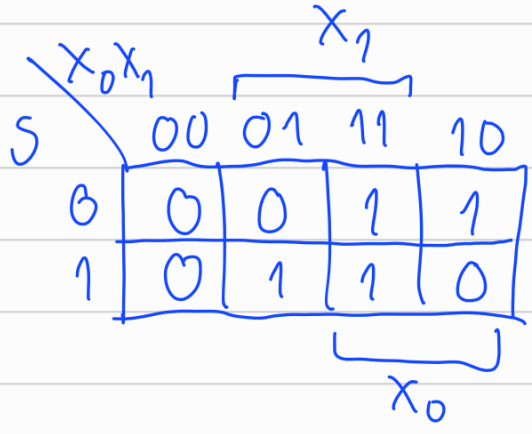
$Z_2, M = (C+D)(A'+B')(A'+D)(B'+C)(A'+C)$

Z_3



$Z_3, M = (A+C')(A'+C)(B'+D)(B+D')$

7,8 Multiplexer



$$m = x_0 s' + x_1 s$$

$$M = (x_0 + s)(x_1 + s')$$

9) Mux 4:1

$$x_0(s_1's_0') + x_1(s_1's_0) + x_2(s_1s_0') + x_3(s_1s_0)$$