CSE 3100 Daniel Delgado Acosta

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Lab 3

Given $F(A,B,C,D) = A'B'C'D + CD + AC'D$

0 0 0 0 1 1 1 1 0 1

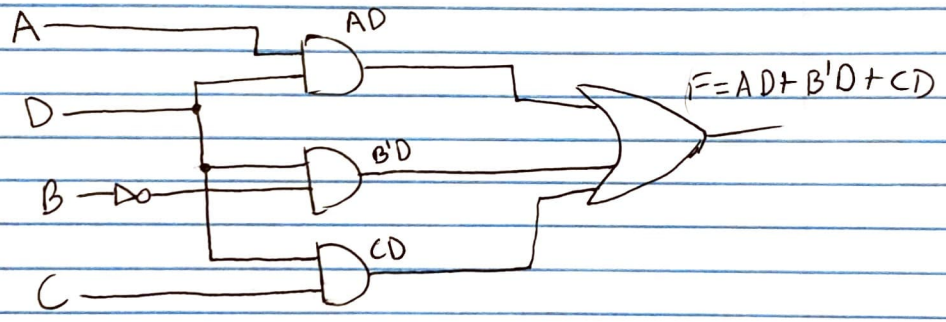
1. AB \ CD

AB \ CD	00	01	11	10
00	m_0	m_1	m_3	m_2
01	m_4	m_5	m_7	m_6
11	m_{12}	m_{13}	m_{15}	m_{14}
10	m_8	m_9	m_{11}	m_{10}

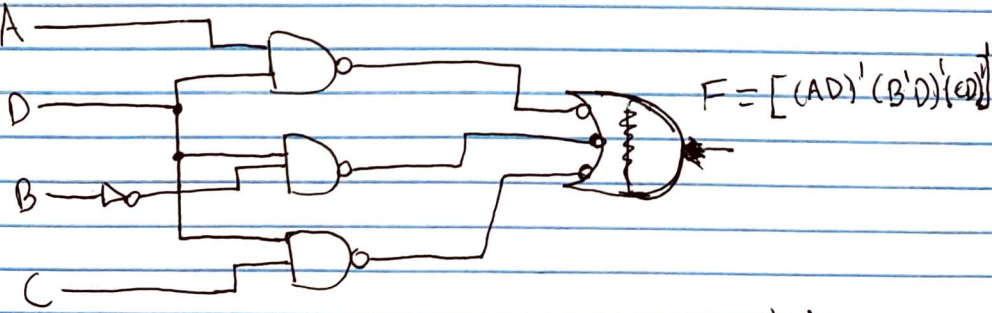
m_1, m_3 → $B'D$; m_3, m_7 → CD; m_{13}, m_{15} → AD; m_9, m_{11} → $B'D$

$= AD + B'D + CD$

2.



3.



4. $F = A'B'C'D + CD + AC'D = C'D((A'B'+A)) + CD = C'D((A'+A)(B'+A)) + CD$

($A'+A$ = 1)

$= (B'C'D + AC'D) + CD = B'C'D + D(AC'+C) = B'C'D + D((A+C)(1))$

$= B'C'D + AD + CD = D(B'C'+C) + AD = D((B'+C)(1)) + AD$

($C'+C$ = 1; $C'+C$ = 1)

$= (B'D + CD) + AD = \boxed{AD + B'D + CD}$