x	y	z	F1	F2	F3	
0	0	0	1	0	0	m_0
0	0	1	0	0	1	m_1
0	1	0	0	1	0	m_2
0	1	1	0	1	0	m_3
1	0	0	0	1	0	m_4
1	0	1	1	0	0	m_5
1	1	0	0	0	1	m_6
1	1	1	1	0	1	m_7

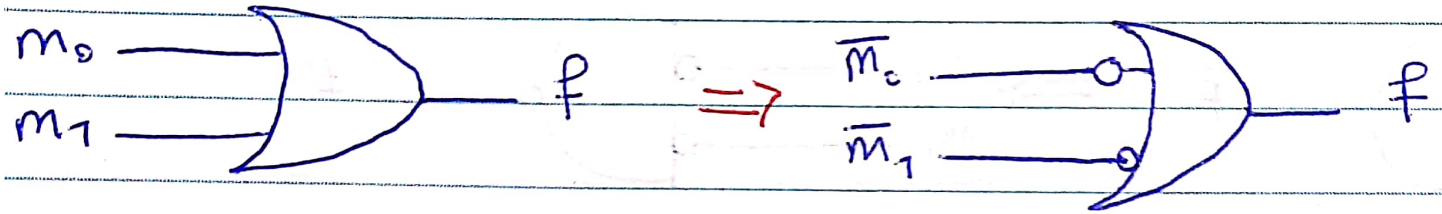
$F1 = \Sigma(0, 5, 7)$

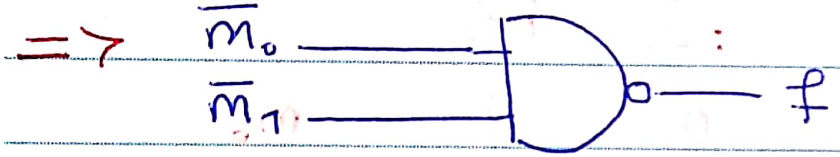
$F2 = \Sigma(2, 3, 4)$

$F3 = \Sigma(1, 6, 7)$

implementation with NAND gates

for example, implement Or(m_0, m_1) with NAND.





=>

$F7 = NAND(\bar{m}_0, \bar{m}_5, \bar{m}_7)$

$F2 = NAND(\bar{m}_2, \bar{m}_3, \bar{m}_4)$

$F3 = NAND(\bar{m}_1, \bar{m}_6, \bar{m}_7)$

Outputs of 74155 decoder are similar to maxterms

therefore, Convert minterm to maxterm.

=>

$F1 = NAND(M_0, M_5, M_7)$

$F2 = NAND(M_2, M_3, M_4)$

$F3 = NAND(M_1, M_6, M_7)$

Inputs				M0	M1	M2	M3	M4	M5	M6	M7
G	*C*	*B*	*A*	2*Y*0	2*Y*1	2*Y*2	2*Y*3	1*Y*0	1*Y*1	1*Y*2	1*Y*3
1	X	X	X	1	1	1	1	1	1	1	1
0	0	0	0	0	1	1	1	1	1	1	1
0	0	0	1	1	0	1	1	1	1	1	1
0	0	1	0	1	1	0	1	1	1	1	1
0	0	1	1	1	1	1	0	1	1	1	1
0	1	0	0	1	1	1	1	0	1	1	1
0	1	0	1	1	1	1	1	1	0	1	1
0	1	1	0	1	1	1	1	1	1	0	1
0	1	1	1	1	1	1	1	1	1	1	0