Assignment 2 CS3853

	Input					Output			
	A	B	C	D	Decimal	W	X	N	Z
0	0	0	0	0	1	0	0	0	1
1	0	0	0	1	2	0	0	1	0
2	0	0	1	0	3	0	0	1	1
3	0	0	1	1	4	0	1	0	0
4	0	1	0	0	5	0	1	0	1
5	0	1	0	1	6	0	1	1	0
6	0	1	1	0	7	0	1	1	1
7	0	1	1	1	8	1	0	0	0
8	1	0	0	0	9	1	0	0	1
9	1	0	0	1	10	1	0	1	0
10	1	0	1	0	11	1	0	1	1
11	1	0	1	1	12	1	1	0	0
12	1	1	0	0	13	1	1	0	1
13	1	1	0	1	14	1	1	1	0
14	1	1	1	0	15	1	1	1	1
15	1	1	1	1	0	0	0	0	0

Sum of min terms

$W = \text{Sum}(7, 8, 9, 10, 11, 12, 13, 14)$

$= A'BCD + AB'C'D' + AB'C'D + \dots$

Sum of Min terms & Product of Max terms

$W = SUM(7,8,9,10,11,12,13,14)$

$= M7 + M8 + M9 + M10 + M11 + M12 + M13 + M14$

$W = A'BCD + AB'C'D' + AB'C'D + AB'CD' + AB'CD$

$+ ABC'D' + ABC'D + ABCD'$

$W = Product(0,1,2,3,4,5,6,15)$

$= M0 * M1 * M2 * M3 * M4 * M5 * M6 * M15$

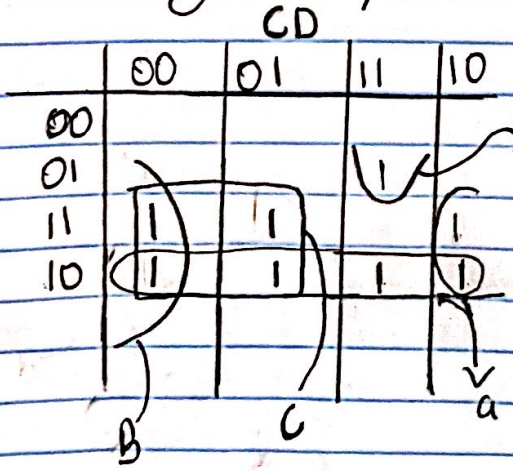
$= ABCD *$

$W = (A+B+C+D) * (A+B+C+D') * (A+B+C'+D) *$

$(A+B+C'+D') * (A+B'+C+D) * (A+B'+C+D') *$

$(A+B'+C'+D) * (A'+B'+C'+D')$

Karnaugh Map



(a) $= AB'C'D' + AB'C'D + AB'CD + AB'CD'$

$= AB'$

(b) $ABC'D' + AB'C'D' + ABCD' + AB'CD'$

$= AD'$