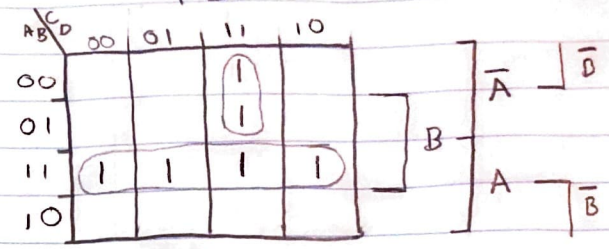
Logic Lab 1

Part 2:

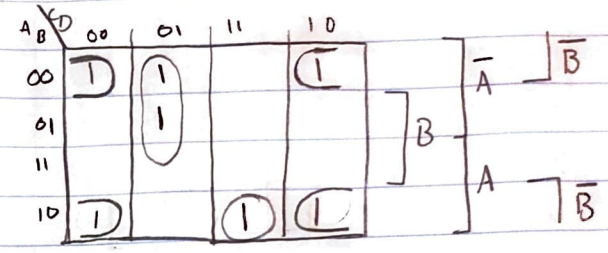
Input:	F_1	F_2	F_3	F_4
0000	0	1	0	1
0001	0	1	0	1
0010	0	1	0	1
0011	1	0	0	0
0100	0	0	0	0
0101	0	1	0	1
0110	0	0	0	0
0111	1	0	0	0
1000	0	1	1	1
1001	0	0	0	1
1010	0	1	1	1
1011	0	1	1	1
1100	1	0	0	1
1101	1	0	0	1
1110	1	0	0	1
1111	1	0	1	1

Part 3a:

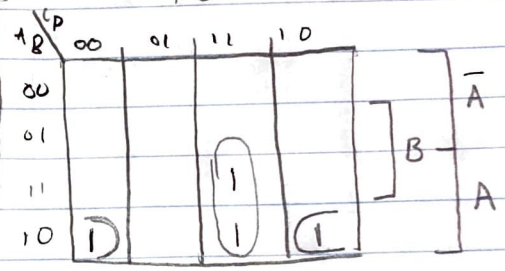
F1



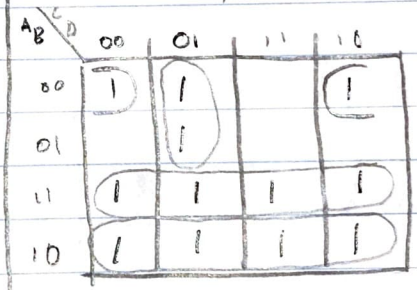
F2



F3



F4



Part 3b:

F1: $AB + \bar{A}CD$

F2: $A\bar{B}\bar{D} + \bar{A}\bar{B}\bar{D} + \bar{A}C\bar{D} + AB\bar{C}D$

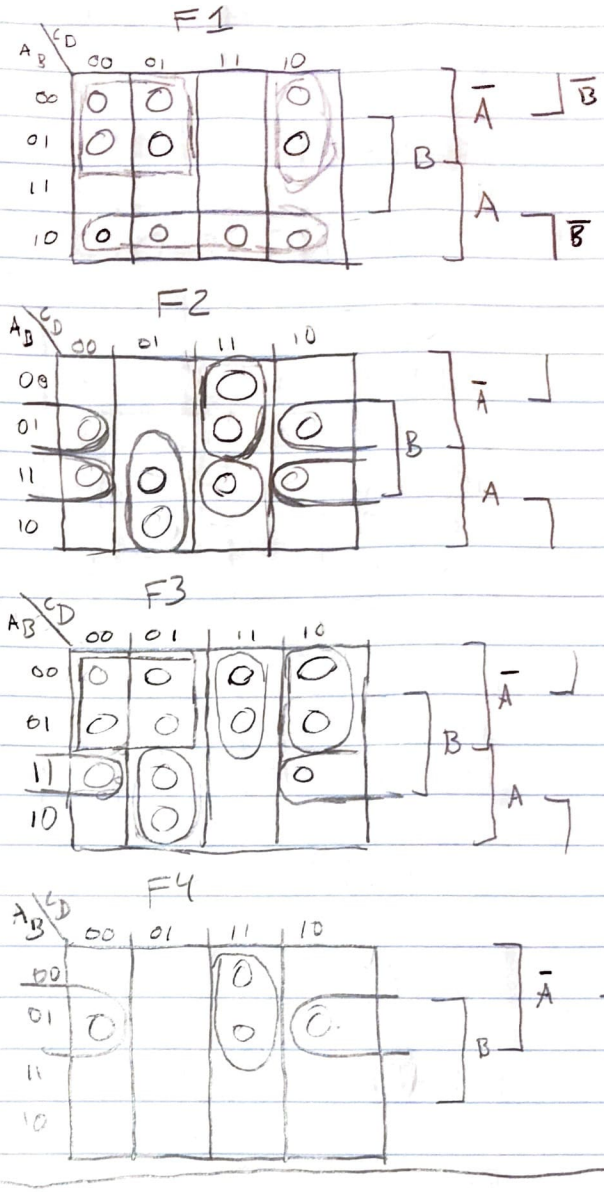
F3: $A\bar{B}\bar{D} + ACD$

F4: $A + \bar{A}\bar{B}\bar{D} + \bar{A}C\bar{D}$

Part 4:

input:	F1	F2	F3	F4
0000	0	1	0	1
0001	0	1	0	1
0010	0	1	0	1
0011	1	0	0	0
0100	0	0	0	0
0101	0	1	0	1
0110	0	0	0	0
0111	1	0	0	0
1000	0	1	1	1
1001	0	0	0	1
1010	0	1	1	1
1011	0	1	1	1
1100	1	0	0	1
1101	1	0	0	1
1110	1	0	0	1
1111	1	0	1	1

Part 5a:



Part 5b:

F1: SOP = $A\bar{B} + \bar{A}\bar{C} + \bar{A}C\bar{D}$

POS = $(\bar{A}+B)(A+C)(A+\bar{C}+D)$

F2: SOP = $\bar{A}B\bar{D} + AB\bar{D} + \bar{A}CD + A\bar{C}D + ABC\bar{D}$

POS = $(\bar{A}+\bar{B}+D)(\bar{A}+\bar{B}+D)(A+\bar{C}+\bar{D})(\bar{A}+C+\bar{D})(\bar{A}+B+\bar{C}+\bar{D})$

F3: SOP = $\bar{A}\bar{C} + \bar{A}CD + \bar{A}C\bar{D} + AB\bar{D} + A\bar{C}D$

POS = $(A+C)(A+\bar{C}+\bar{D})(A+\bar{C}+D)(\bar{A}+\bar{B}+D)(\bar{A}+C+\bar{D})$

F4:

SOP = $\bar{A}B\bar{D} + \bar{A}CD$

POS = $(A+\bar{B}+D)(A+\bar{C}+\bar{D})$