

Problem 1:

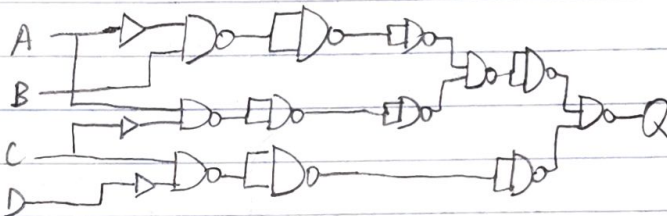
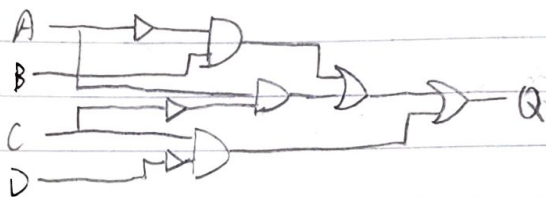
$$1. Q = A'B'C'D' + A'B'C'D + A'B'CD' + A'BC'D' + A'BC'D + A'BCD' + A'BCD + AB'C'D' + AB'C'D + AB'CD' + AB'CD + ABCD'$$

2.

AB \ CD	00	01	11	10
00	1	1	0	1
01	1	1	0	1
11	0	1	0	0
10	1	1	1	1

$$Q = \bar{A}B + CD + AC \text{ or } Q = (\bar{A} + \bar{B} + C)(\bar{A} + \bar{C} + D)(B + \bar{C} + \bar{D})$$

3.



Problem 2: DEF ABC

DEF \ ABC	000	001	011	010	110	111	101	100
000	0	0	X	0	1	X	1	1
001	0	0	X	0	1	1	1	1
011	0	0	0	0	0	0	0	X
010	0	X	0	1	1	0	0	1
110	1	0	0	1	1	0	0	1
111	1	0	0	0	0	0	0	1
101	1	0	1	X	1	1	0	1
100	1	0	1	1	1	1	0	1

$$1. Q = \bar{B}\bar{C}D + B\bar{D}\bar{E} + A\bar{D}\bar{E} + A\bar{B}\bar{C} + B\bar{C}\bar{E}\bar{F}$$

$$2. Q = (\bar{C} + \bar{E})(B + \bar{C} + \bar{D})(\bar{B} + \bar{E} + \bar{F})(A + B + D)(A + D + E)$$