$$X \cdot 0 = 0 \qquad X + 1 = 1$$

$$X \cdot x' = 0 \qquad X + x' = 1$$

$$(x')' = X \qquad X \cdot X = X$$

$$X \cdot 1 = X \qquad X + 0 = X$$

$$X + X = X$$

POS $\Rightarrow$ Toplamların Çarpımı

SOP $\Rightarrow$ Çarpımların toplamı

$$xy = yx$$

$$x + y = y + x$$

$$(xy)z = x(yz) = xyz$$

$$(x + y) + z = x + (4 + z) = x + y + z$$

$$x(4 + z) = xy + xz$$

$$x + yz = (x + y)(x + z) \rightarrow \text{POS}$$

$$(x + y)(x' + z) = xz + x'y \rightarrow \text{SOP}$$

Minterm (Σ) → SOP

→ Cnenisletilecekse eksik değişkenlerine

($X+X'$) ke eklenerek yapılır.

→ $A=1$ $A'=0$

$$\boxed{AC+BC}$$

Maxterm (π) → POS

→ Cnenisletilecekse eksik değişkenlerine

(XX') eklenerek yapılır.

→ $A=0$ $A'=1$

$$(A+B)\cdot(B+C)$$

CD \ AB

AB \ CD	00	01	11	10
00	0	1	3	2
01	4	5	7	6
11	12	13	15	14
10	8	9	11	10

BC \ A

A \ BC	00	01	11	10
0	0	1	3	2
1	4	5	7	6

Multiplexers

$$2^n \begin{cases} \xrightarrow{\; I_0 \;} \\ \xrightarrow{\; I_1 \;} \\ \xrightarrow{\; I_0 \;} \end{cases} \boxed{\begin{array}{c} 2^n \text{ to } 1 \\ \text{mux} \end{array}} \longrightarrow 2$$

↑ ↑

(n)
almamız
gereken
kontrol
giris bn

OR

A

B

$C = A + B$

AND

A

B

$C = A.B$
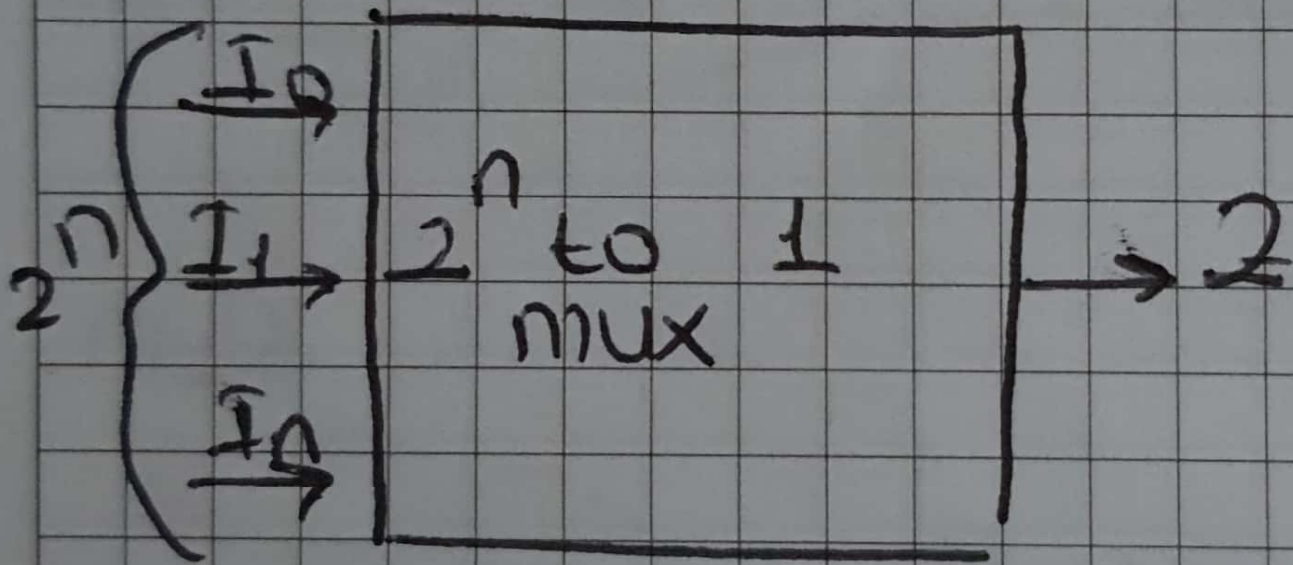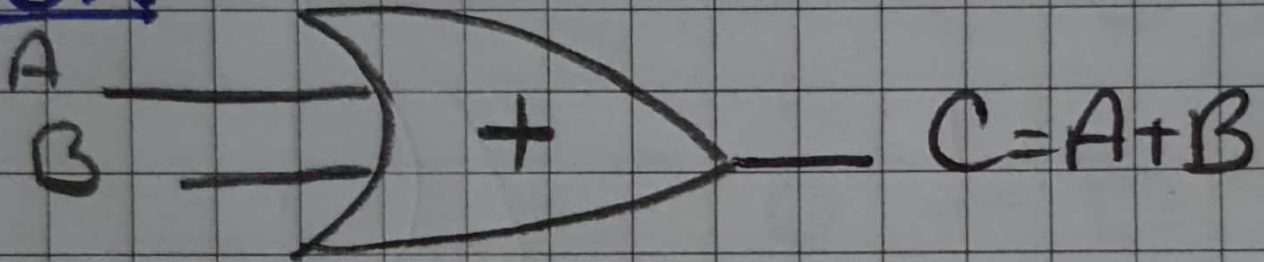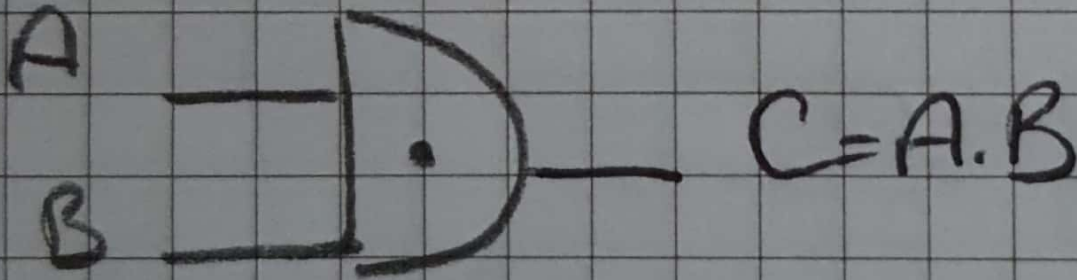
X	Y	And ·	OR +	NAND · +	NOR +
0	0	0	0	1	1
0	1	0	1	1	0
1	0	0	1	1	0
1	1	1	1	0	0

NAND

NOR

$-$ $+$
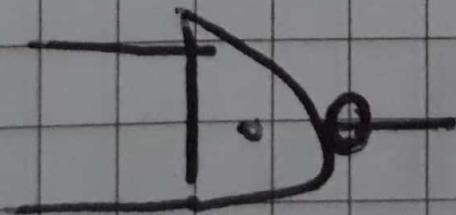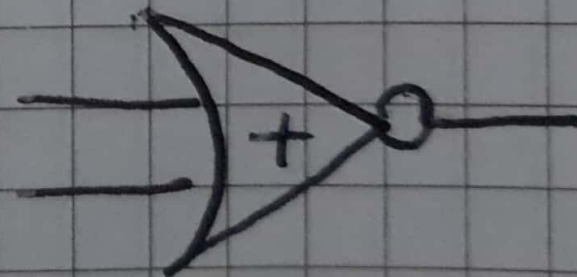
AND$-$OR (SOP)   minterm

$\shortparallel$

NAND $-$ NAND

OR$-$AND (POS) maxterm

$\shortparallel$

NOR $-$NOR

Terslenmemiş Decoder

$\Rightarrow$ Çıktılar minterm olmak zorundadır

$\rightarrow$ Eğer maxterm ise NOR ile çıksın.

Terslenmiş (tümleyenlenmiş) Decoder

$\rightarrow$ Çıktılar maxterm olmak zorundadır.

$\circ$ K - AND

$\rightarrow$ Eğer minterm ise NAND ile çıksın.

Uyarılma Tablosu

q	q$^+$	S	R	J	K	D	T
0	0	0	X	0	X	0	0
0	1	1	0	1	X	1	1
1	0	0	1	X	1	0	1
1	1	X	0	X	0	1	0

J	K	Q+
0	0	Q
0	1	0
1	0	1
1	1	Q̄

S	R	Q+
0	0	Q
0	1	0
1	0	1
1	1	Y

PreN	ClrN	Q+
0	0	Y
0	1	1
1	0	0
1	1	Ff

T	Q+
0	Q+
1	Q̄+