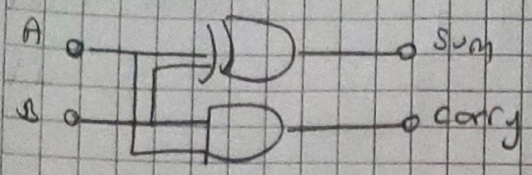
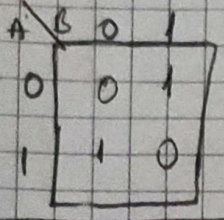
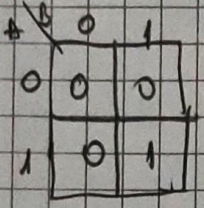
Half Adder



A	B	Sum	Carry
0	0	0	0
0	1	1	0
1	0	1	0
1	1	0	1



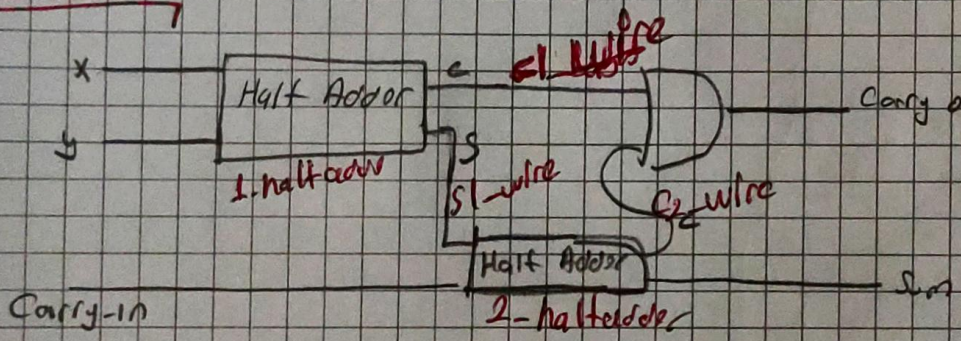
Sum = $AB' + BA'$



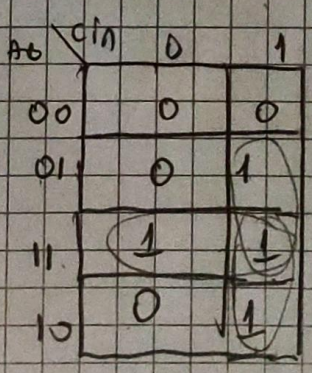
Carry = AB

} Karnaugh map

Full Adder

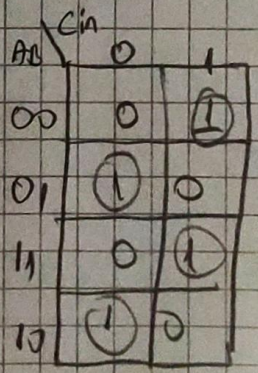


A	B	Cin	Cout	S
0	0	0	0	0
0	0	1	0	1
0	1	0	0	1
0	1	1	1	0
1	0	0	0	1
1	0	1	1	0
1	1	0	1	0
1	1	1	1	1



$Cout = AB + CinB + ACin$

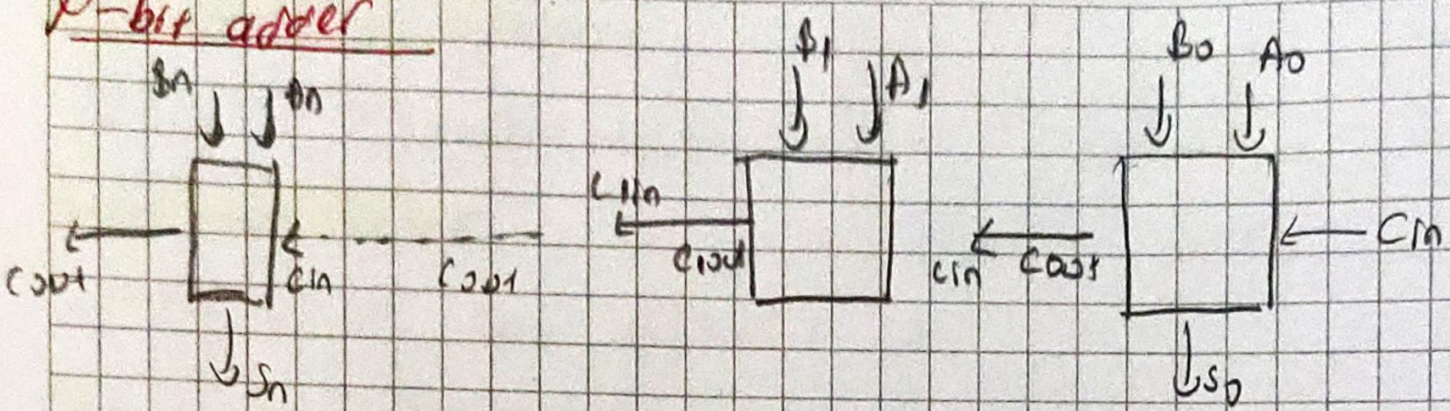
$Cout = AB + Cin(A \oplus B)$



$S = AB'Cin + ABCin$
$A'BCin' + A'B'Cin$

$= A \oplus B \oplus Cin$

N-bit adder



- installation edecken kaç tane full adder kullanacağımızı bilmediğimiz için bir bunu

```
FULL_ADDER_GEN: for k in 0 to N-1 generate

        full adder_k : full_adder
        port map(

                a => a_i(k),
                b => b_i(k),
                carry => temp(k),
                sum_o => sum_o(k),
                carry_o => temp(k+1));

        );
    end generate;
end Behavioral;
```