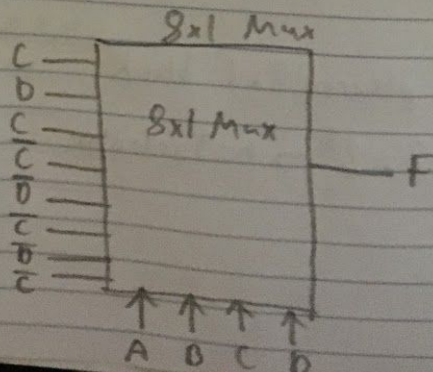


1. $\bar{x}y + (\bar{y}+x) = F$

\downarrow \downarrow
 $T_1 + T_2 = F$

2. $F(A, B, C, D) = \sum m(3, 8, 12)$

	A	B	C	D	F	
0	0	0	0	0	0	} F=C
1	0	0	0	1	0	
2	0	0	1	0	0	} F=D
3	0	0	1	1	1	
4	0	1	0	0	0	} F=C
5	0	1	0	1	0	
6	0	1	1	0	0	} F= \bar{C}
7	0	1	1	1	0	
8	1	0	0	0	1	} F= \bar{D}
9	1	0	0	1	0	
10	1	0	1	0	0	} F= \bar{C}
11	1	0	1	1	0	
12	1	1	0	0	1	} F= \bar{D}
13	1	1	0	1	0	
14	1	1	1	0	0	} F= \bar{C}
15	1	1	1	1	0	



3. Half-adder

A	B	S	C
0	0	0	0
0	1	1	0
1	0	1	0
1	1	0	1

Sum K-map

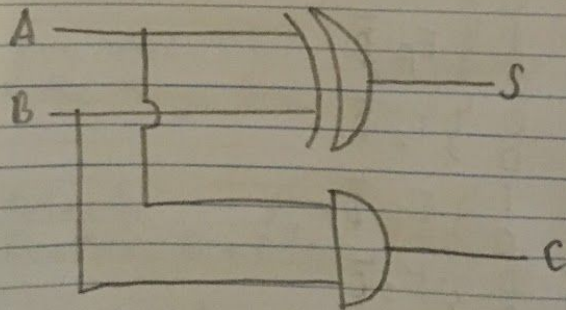
A \ B	0	1
0	0	1
1	1	0

$$S = A \oplus B$$

Carry K-map

A \ B	0	1
0	0	0
1	0	1

$$C = AB$$



Multiplexer 8x1 block

$$2^n = 8 = 2^3 \rightarrow n=3 \text{ selector}$$

