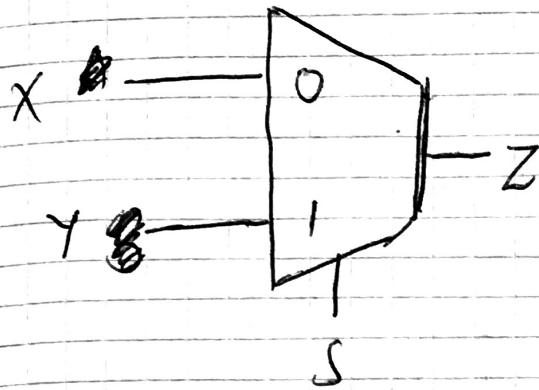
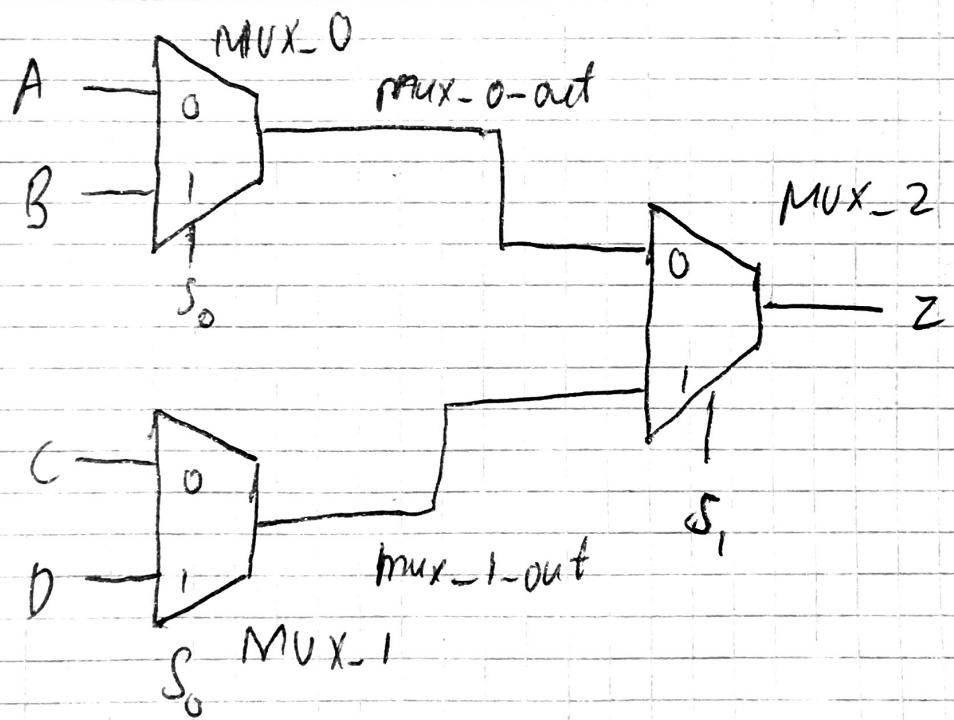


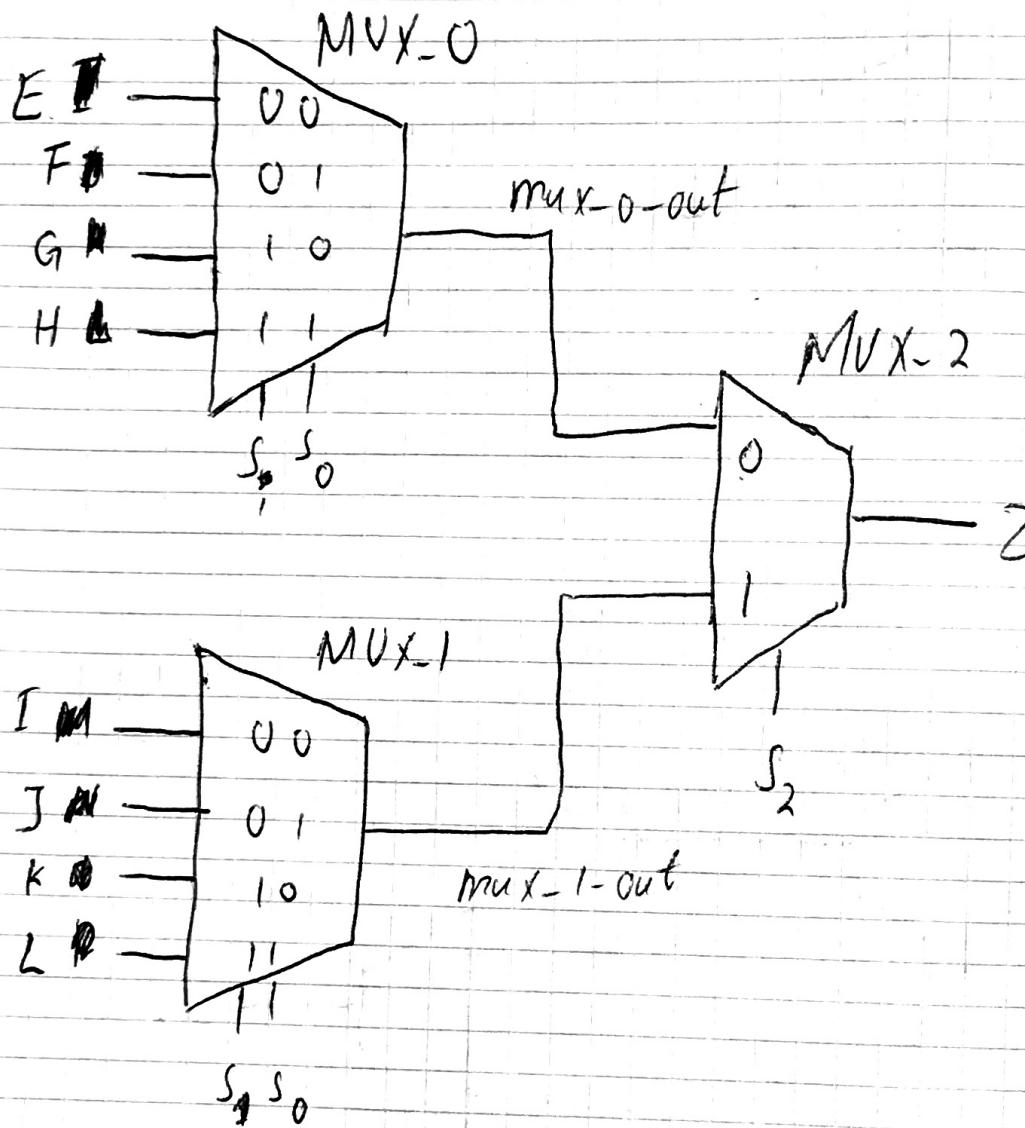
## 2 to 1 multiplexer



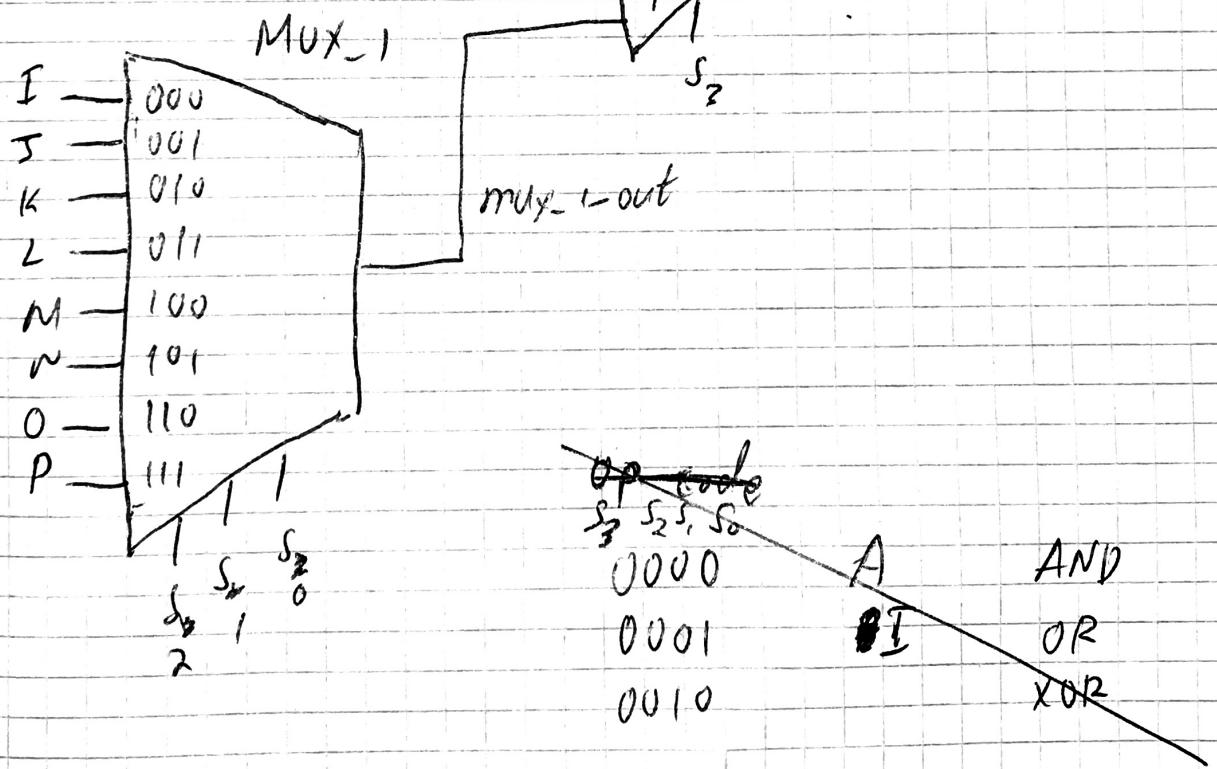
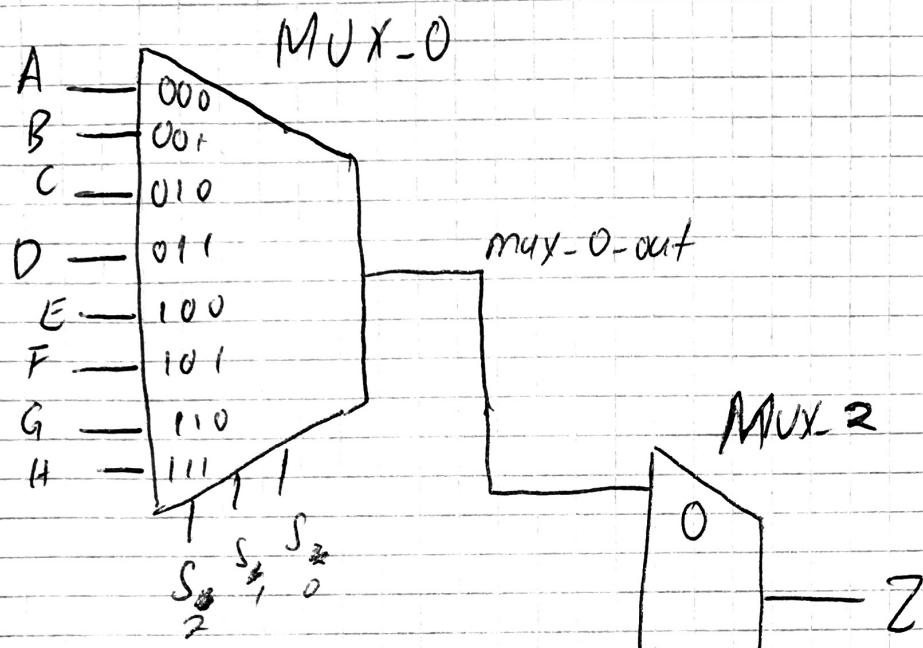
## 4 to 1 multiplexer



## 8 to 1 multiplexer



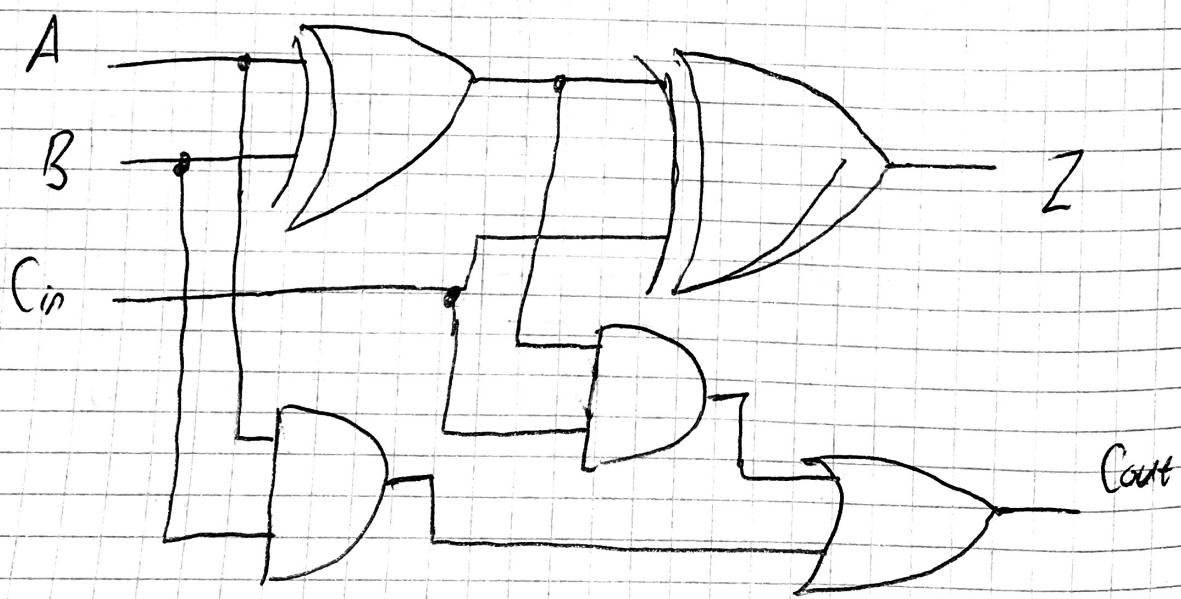
# 16 to 1 multiplexer



# Full Adder

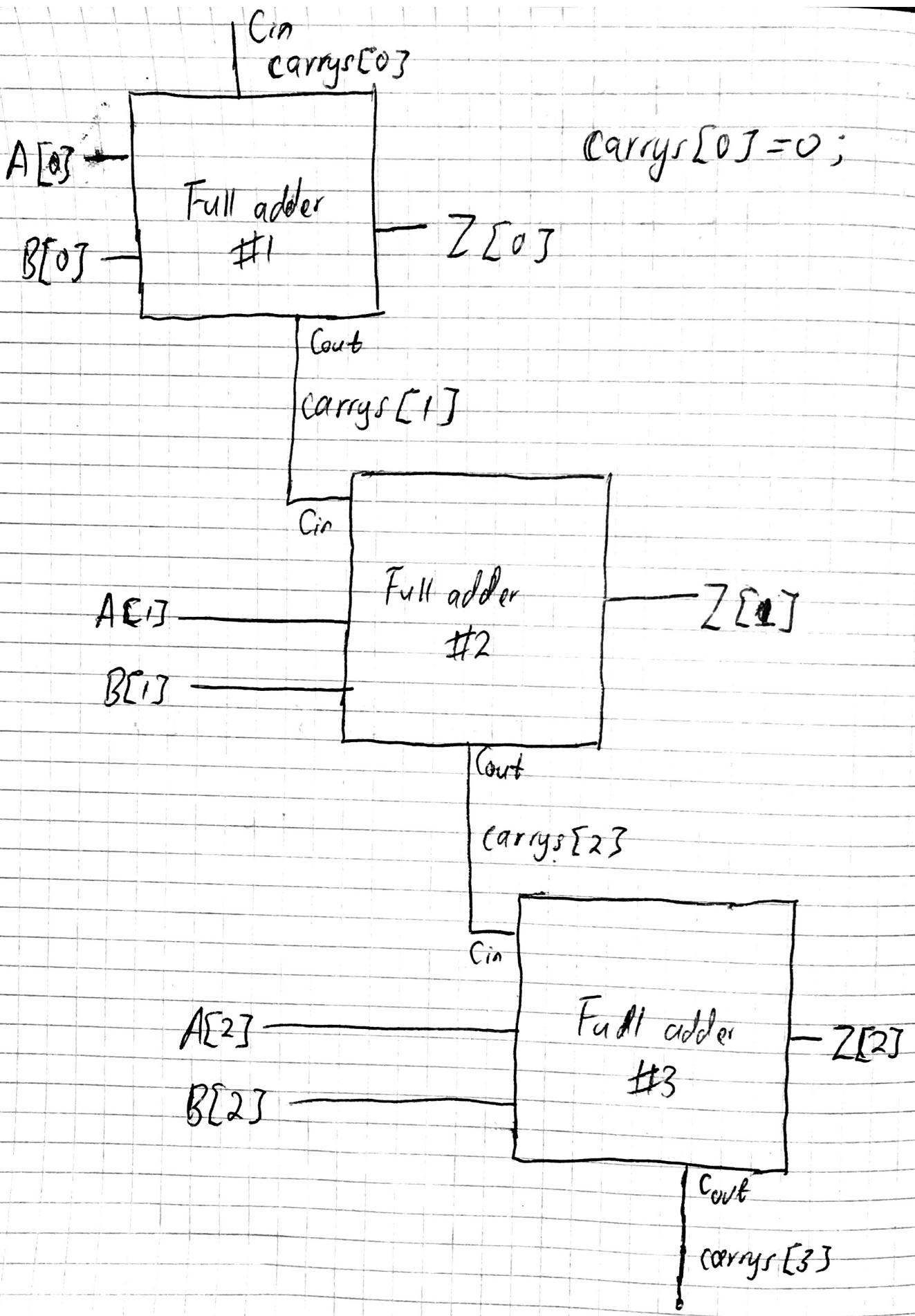
Truth Table

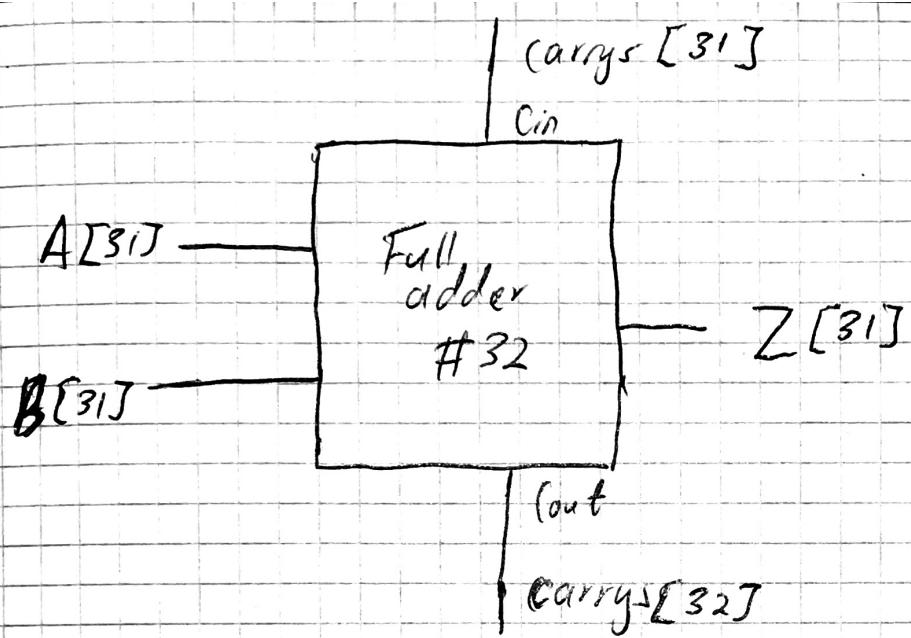
Cin	A	B	Z	Cout
0	0	0	0	0
0	1	0	1	0
0	0	1	1	0
0	1	1	0	1
1	0	0	1	0
1	1	0	0	1
1	0	1	0	1
1	1	1	1	1



$$Z = (A \oplus B) \oplus C_{in}$$

$$C_{out} = AB + C_{in}(A \oplus B)$$





$$\text{overflow} = \text{carry}_{\{32\}}$$