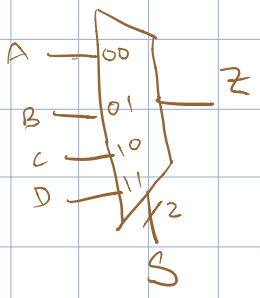
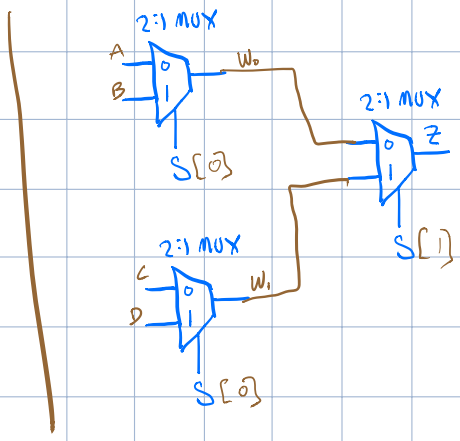
MUX

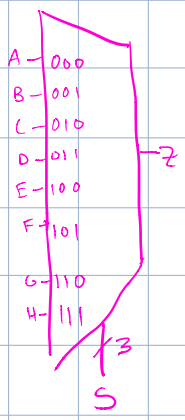
2 to 1

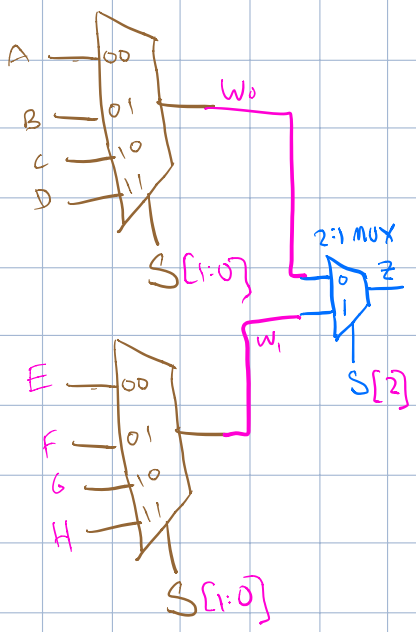
4 to 1

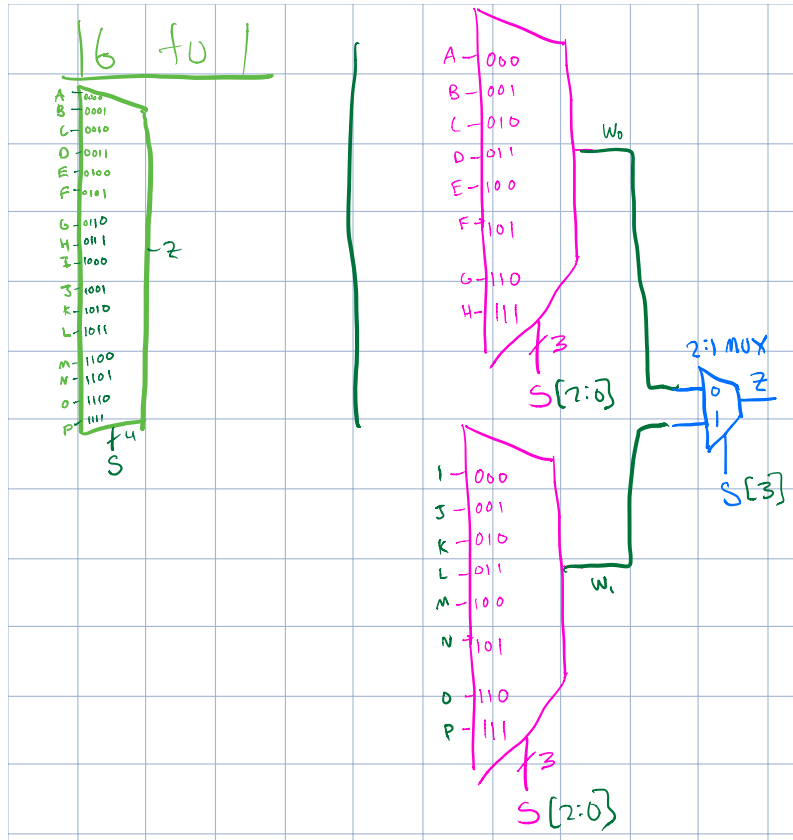




8 to 1







Adder

A	B	C_i	S	C_o
0	0	0	0	0
0	0	1	1	0
0	1	0	1	0
0	1	1	0	1
1	0	0	1	0
1	0	1	0	1
1	1	0	0	1
1	1	1	1	1

- $S = \bar{A}\bar{B}C_i + \bar{A}B\bar{C}_i + A\bar{B}\bar{C} + ABC$

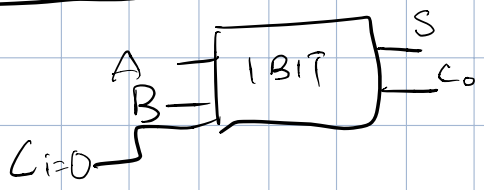
  $S = (A \oplus B) \oplus C_i$

- $C_o = \bar{A}BC_i + A\bar{B}C_i + AB\bar{C} + ABC$

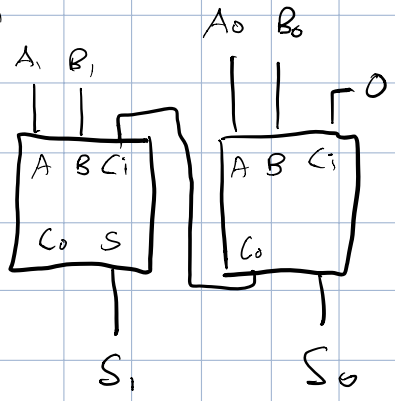
  $= \bar{A}BC_i + A\bar{B}C_i + AB$

  $= AB + AC_i + BC_i$

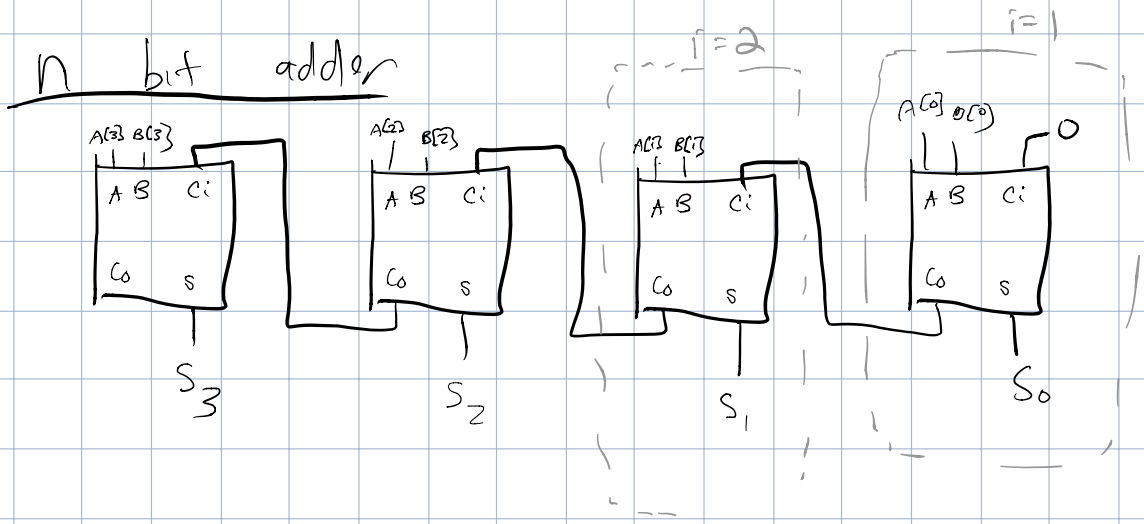
1 bit adder



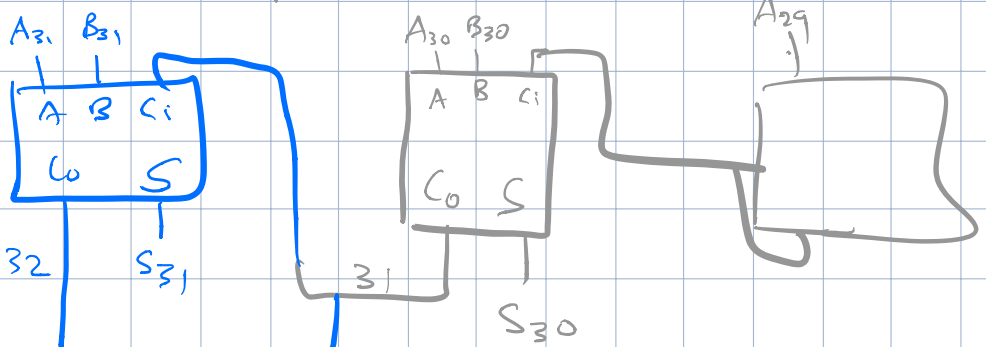
2 bit adder

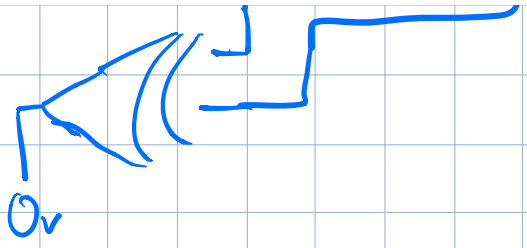


n bit adder



at i=32 at i=31




0v