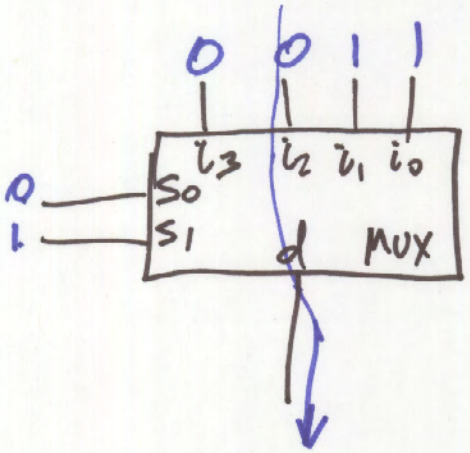
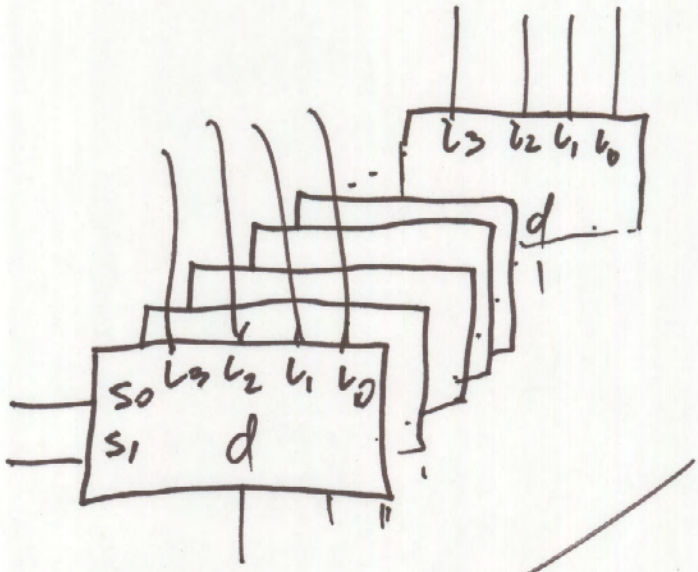
ECGR 2181 - Extra Notes 10/26/09



S_1	S_0	d
0	0	i_0
0	1	i_1
1	0	i_2
1	1	i_3

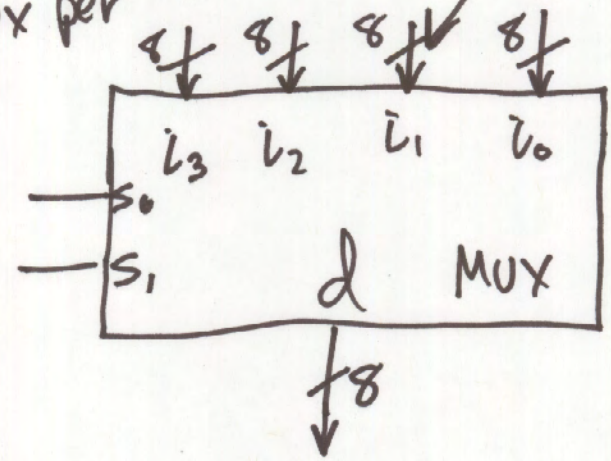
if
$S_1 S_0 = 10$
$d = 0$



8 Muxes

Control - Controls all databits The same way

data - one mux per bit



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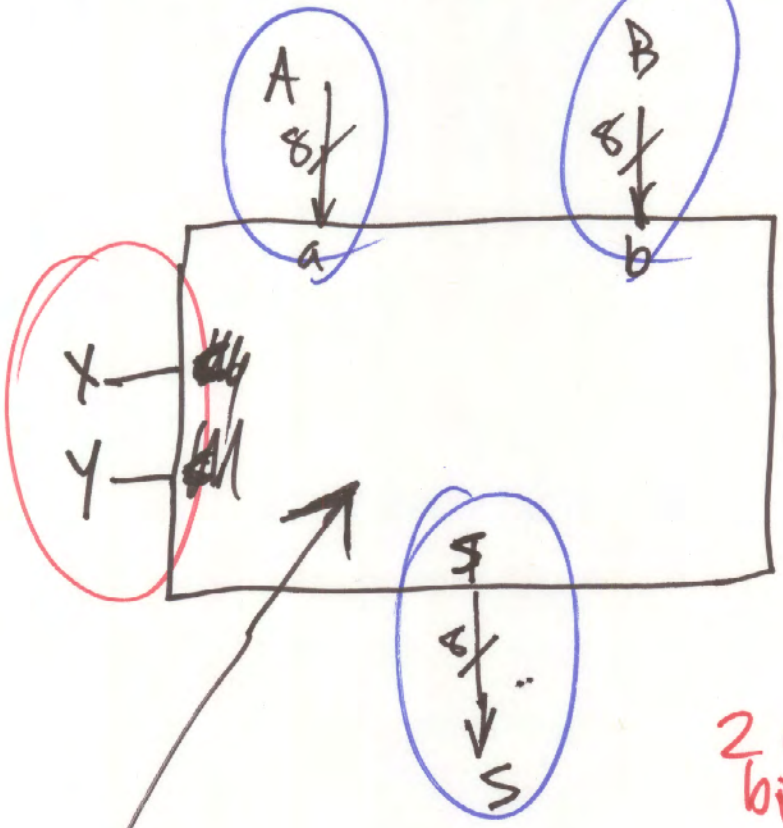


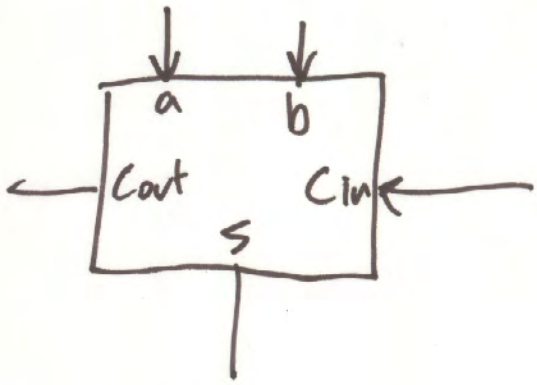
Control		data
Y	X	S
0	0	A+B
0	1	A-B
1	0	A+1
1	1	A-1

2 control bits

24 data bits

Inside

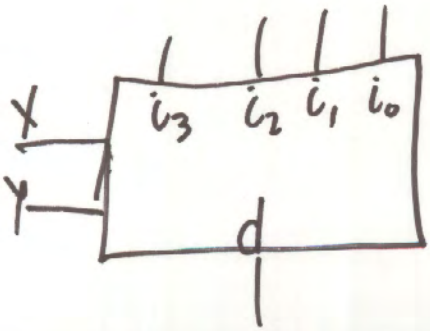
1) Adder (C_{in})



2) Mux

3) Invert

Rows
Truth table
2^n n = input bits



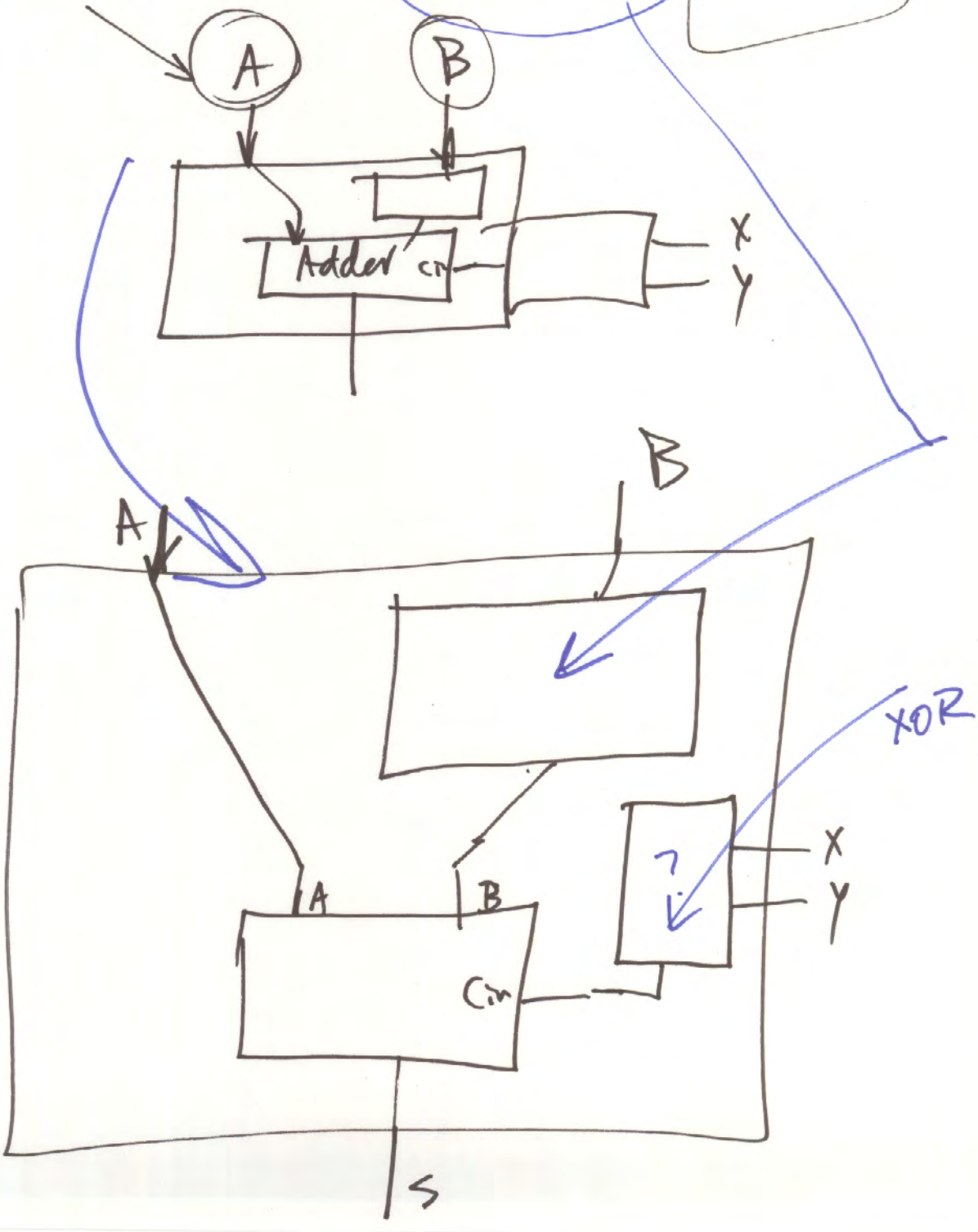
Y	X	d
0	0	i_0
0	1	i_1
1	0	i_2
1	1	i_3

a	b	Cin	S	Cout
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

Y Y	S
0 0	A+B
0 1	A-B
1 0	A+1
1 1	A-1

What goes into the B input of the adder

B	Cin=0
~B	Cin=1
0000 0000	Cin=1
1111 1111	Cin=0



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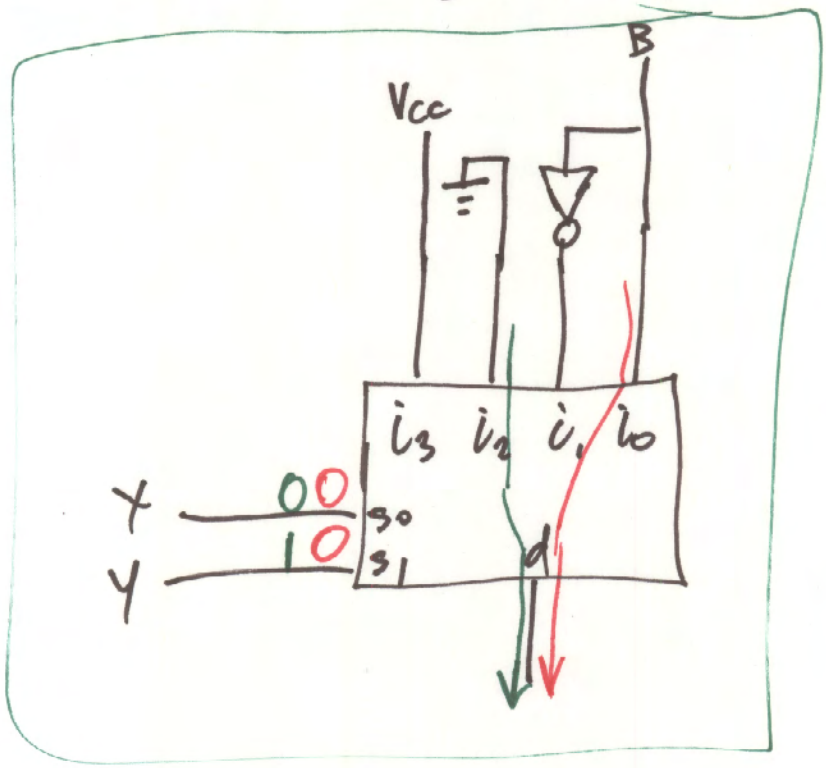

Y X	d_i
0 0	B_i
0 1	B_i'
1 0	0
1 1	1