7 segment display
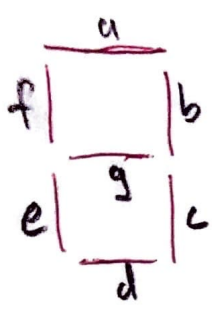
	input			output						
	bit3	bit2	bit1	a	b	c	d	e	f	g
0 →	0	0	0	1	1	1	1	1	1	0
1 →	0	0	1	0	1	1	0	0	0	0
2 →	0	1	0	1	1	0	1	1	0	1
3 →	0	1	1	1	1	1	1	0	0	1
4 →	1	0	0	0	1	1	0	0	1	1
5 →	1	0	1	1	0	1	1	0	1	1
6 →	1	1	0	1	0	1	1	1	1	1
7 →	1	1	1	1	1	1	0	0	0	0

Expressions

$$a = (b_1' \cdot b_3') + (b_1 \cdot b_3) + b_2$$

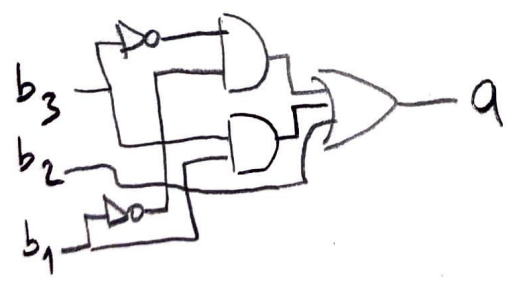$$b = (b_1' \cdot b_2') + (b_1 \cdot b_2) + b_3'$$

$$c = b_1 + b_2' + b_3$$

$$d = (b_1' \cdot b_3') + (b_1 \cdot b_2' \cdot b_3) + (b_2 \cdot b_3')$$
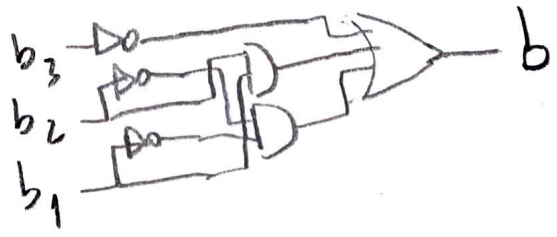
$$e = (b_1' \cdot b_3') + (b_1' \cdot b_2)$$

$$f = (b_1' \cdot b_2') + (b_1' \cdot b_3) + (b_2' \cdot b_3)$$
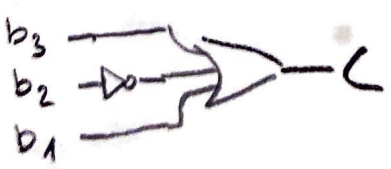
$$g = (b_1' \cdot b_3) + (b_2 \cdot b_3') + (b_2' + b_3) \cdot$$
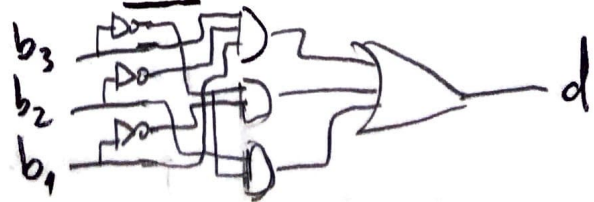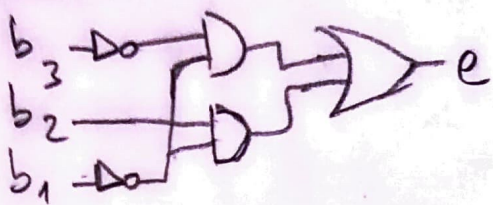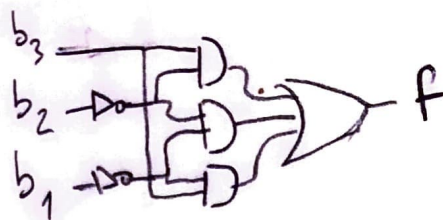
a

b

c

d

e

b_3 b_2 b_1 → e

f

b_3 b_2 b_1 → f

g

b_3 b_2 b_1 → g