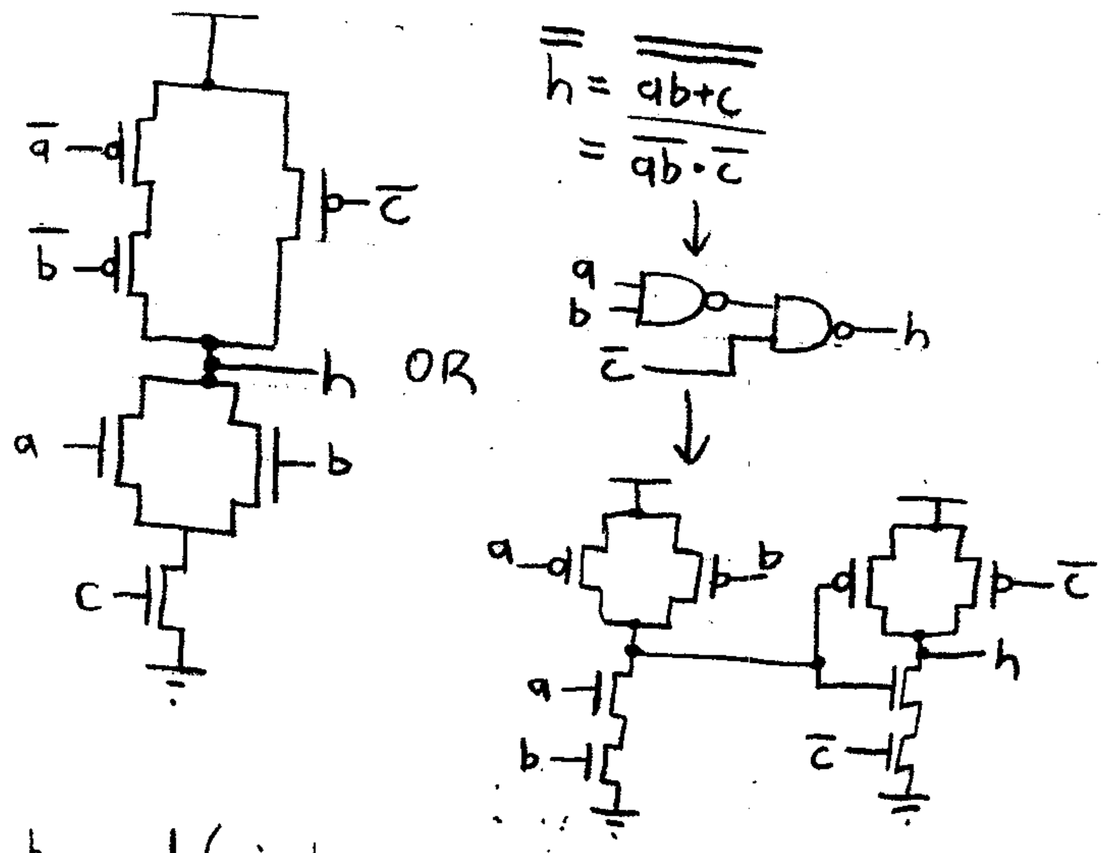
4)



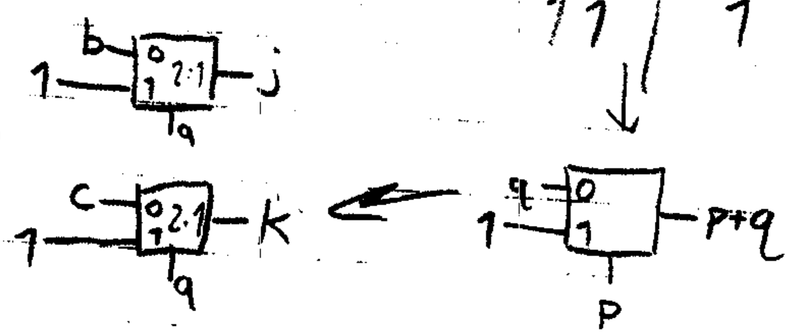
$$\bar{h} = \overline{\overline{ab+c}} = \overline{ab}\cdot\bar{c}$$

5)

a	b	c	d	j	k
0	0	0	1	0	0
0	0	1	0	0	1
0	1	0	0	1	0
1	0	0	0	1	1

$j = a+b$, $k = a+c$

p	q	p+q
0	0	0
0	1	1
1	0	1
1	1	1



6)a)

q \ bc	00	01	11	10
0	2	4	8	16
1	32	64	128	256

256

b) 2^{2^n}

c) $2(3^3-3) = 2(27-3) = 2\cdot 24 = 48$

d) 256

e) 256

f) zero: 1
AND: 000, 001, 00X, ... 3^n
OR: 3^n
AND/OR overlap: $\bar{a}, a, \bar{b}, b, X$.. $2\cdot n+1$

$1+3^n+3^n-(2n+1)$
$2\cdot 3^n-2n-1+1$
$2(3^n-n)$