test is on 2/25

4.13

$\overline{X_1}$ $(X_1=0)$

$X_2 X_3$ / $X_4 X_5$

0	4	12	8
1	5	13	9
3	7	15	11
2	6	14	10

f

X_1 $(X_1=1)$

$X_2 X_3$ / $X_4 X_5$

16	20	28	24
17	21	29	25
19	23	31	27
18	22	30	26

$\overline{X_1}$

$X_2 X_3$ / $X_4 X_5$

g

$X_2 X_3$ X_1

$X_4 X_5$

f

g

chapter ① $\underline{1}$

chapter ② $2.1 - 2.8$
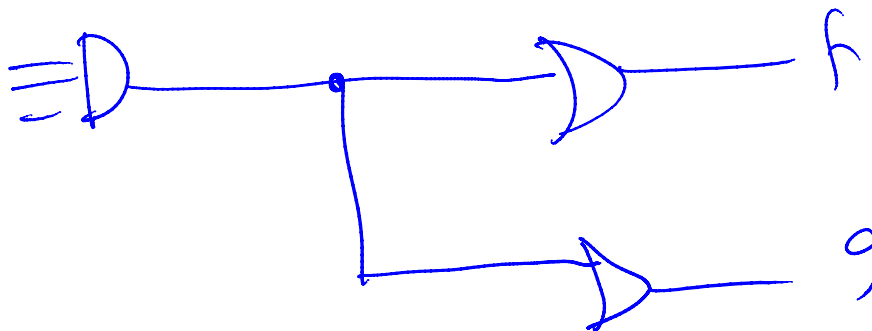
chapter ③ $4.1 - 4.5$, at 4.6

$$x_1, x_2, x_3, x_4, x_5$$

$ms \uparrow$ $LS \uparrow$

$$f(x_1, x_2 \cdots x_7) = X_1 X_3 \bar{X_6} + X_1 X_4 X_5 \bar{X_6} +$$
$$X_2 X_3 X_7 + X_2 X_4 X_5 X_7$$

true and complemented forms are available

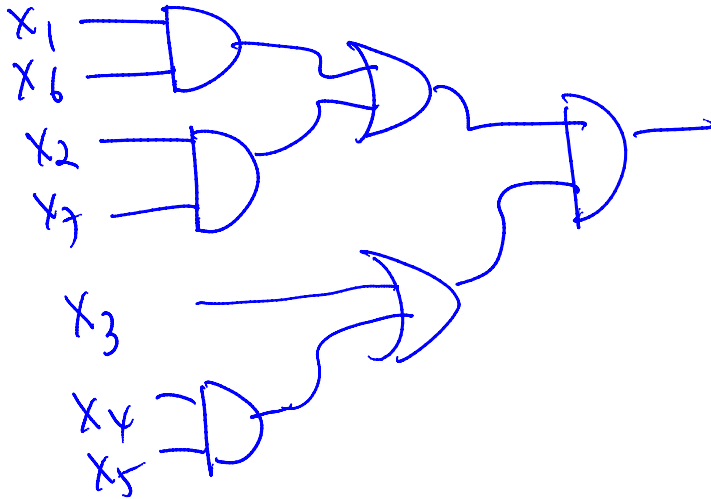$$(x_1, \bar{x_1} \cdots)$$
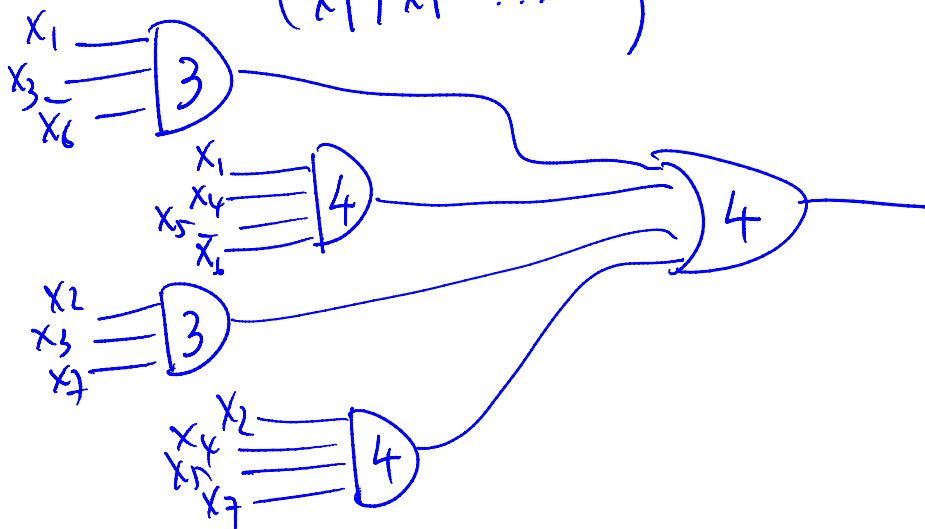
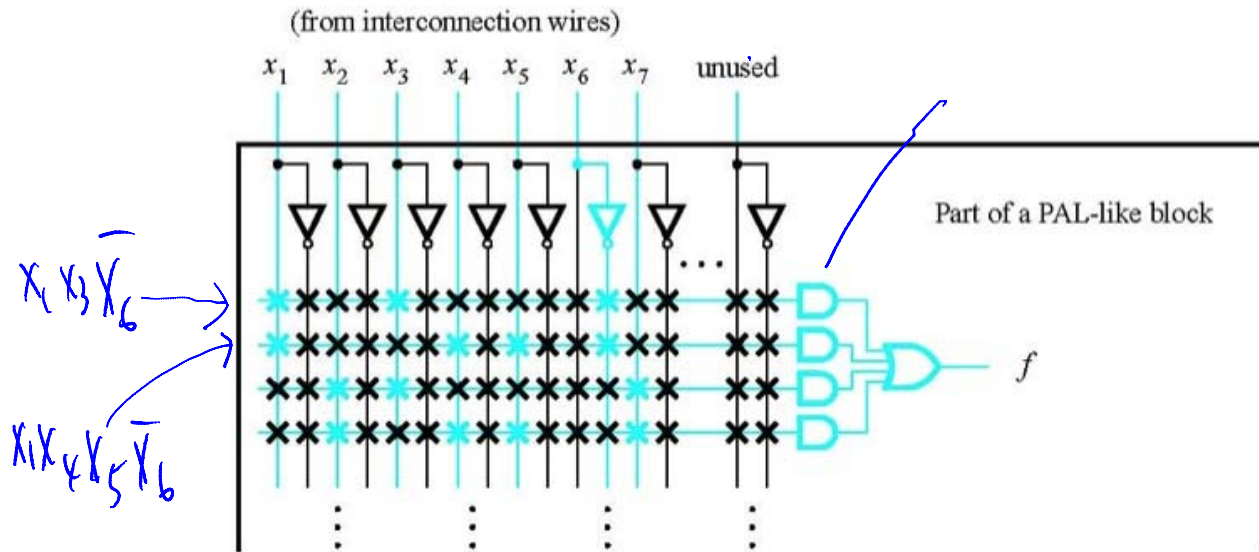in lab, only 2-input gates are available
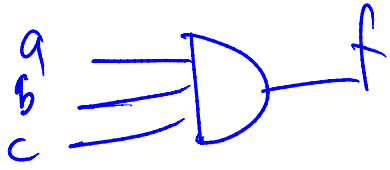
$$f = abc$$

$$= (ab)c$$
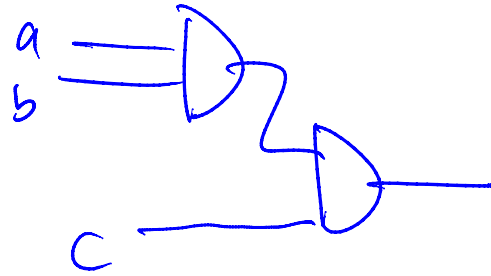
$$f = X_1 \bar{X_6}(X_3 + X_4 X_5) + X_2 X_7 (X_3 + X_4 X_5)$$

$$= (X_1 \bar{X_6} + X_2 X_7)(X_3 + X_4 X_5)$$

$$f = x_1 x_3 \overline{x_6} + x_1 x_4 x_5 \overline{x_6} + x_2 x_3 x_7 + x_2 x_4 x_5 x_7$$

(from interconnection wires)

x_1 x_2 x_3 x_4 x_5 x_6 x_7 unused

Part of a PAL-like block

$x_1 x_3 \overline{x_6}$ →

$x_1 x_4 x_5 \overline{x_6}$

f

PLD

$$f = x_1 x_3 \bar{x}_6 + x_1 x_4 x_5 \bar{x}_6 + x_2 x_3 x_7 + x_2 x_4 x_5 x_7$$

$$\boxed{f = (x_1 \bar{x}_6 \oplus x_2 x_7)(x_3 + x_4 x_5)}$$
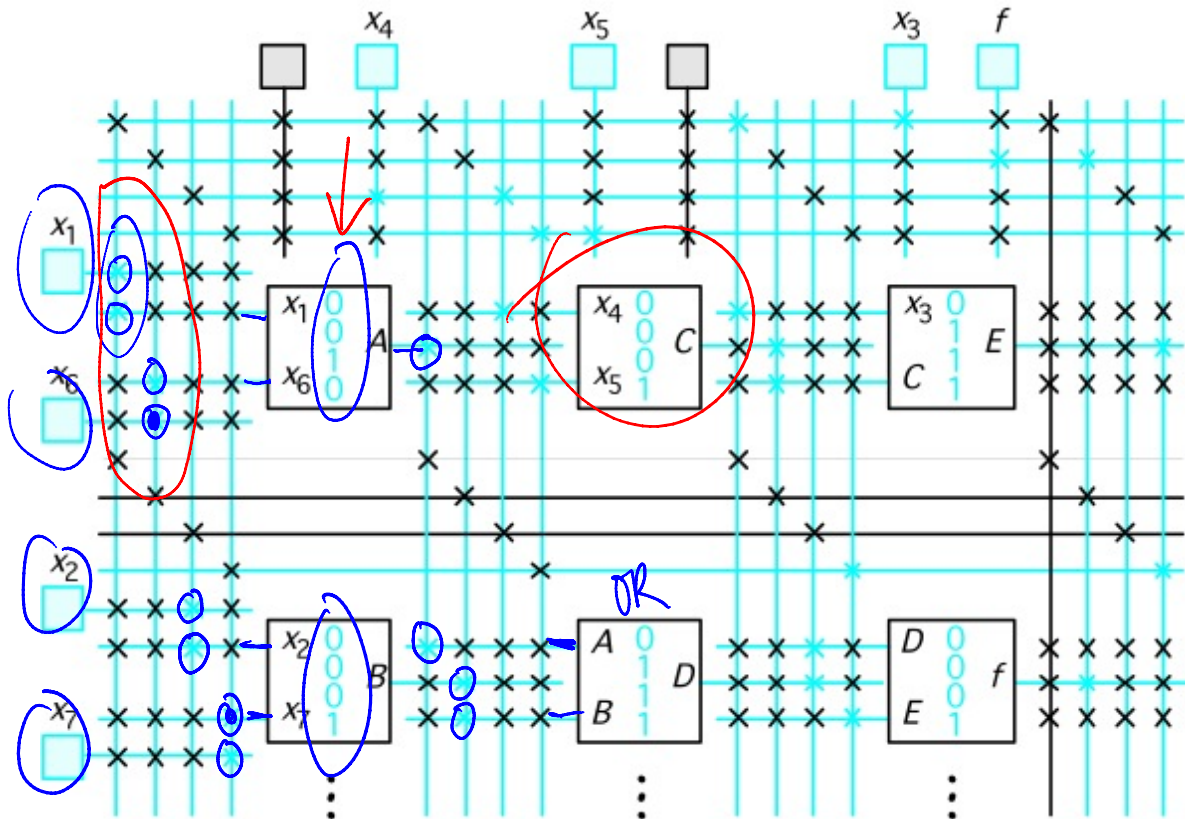
x_1	x_6	$x_1 \bar{x}_6$
0	0	0
0	1	0
1	0	1
1	1	0

x_2	x_7	$x_2 x_7$
0	0	0
0	1	0
1	0	0
1	1	1