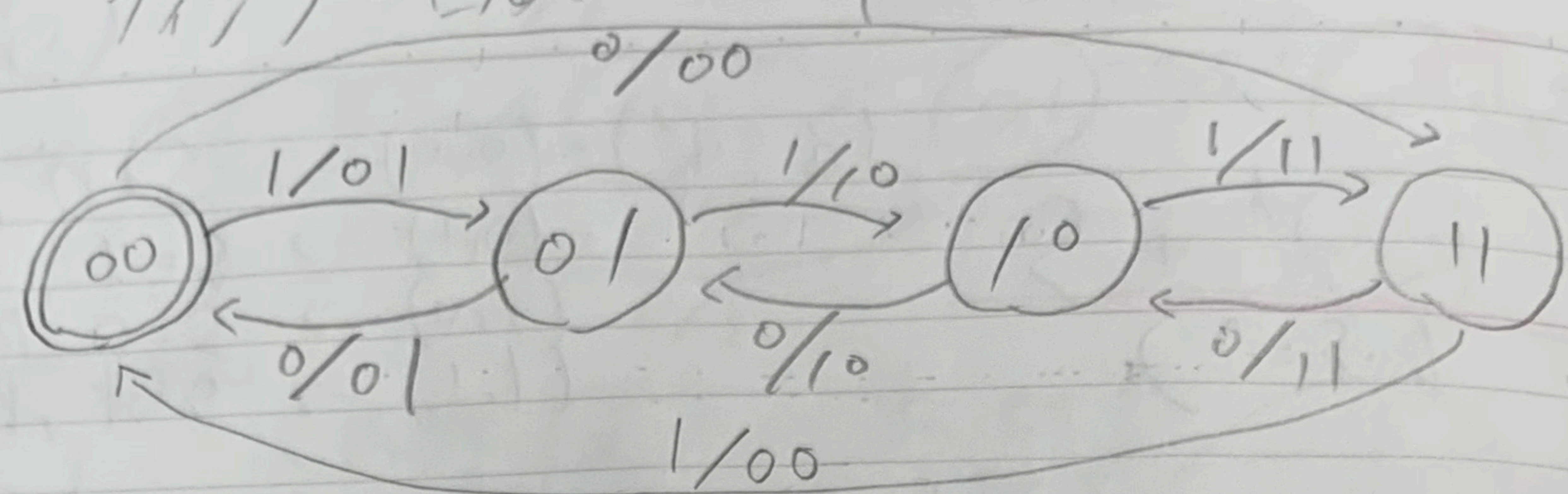
Date 7.27. 205713B 朝比奈 大翔

ディジタル回路 rep14



状態遷移表と出力図

現状態 Q		次状態 入力 X = 0		次状態 入力 X = 1		出力Y 入力 X = 0		出力Y 入力 X = 1	
d_1	d_0	d_1'	d_0'	d_1'	d_0'	y_1	y_0	y_1	y_0
0	0	1	1	0	1	0	0	0	1
0	1	0	0	1	0	0	1	1	0
1	0	0	1	1	1	1	0	1	1
1	1	1	0	0	0	1	1	0	0

状態遷移関数

X \ $d_1 d_0$	00	01	11	10
0	1		1	
1		1		1

$$d_1' = \bar{X}\bar{d_1}\bar{d_0} + X\bar{d_1}d_0 + \bar{X}d_1d_0 + Xd_1\bar{d_0}$$
$$= \bar{X}(\overline{d_1 \oplus d_0}) + X(d_1 \oplus d_0)$$
$$= \overline{X \oplus d_1 \oplus d_0}$$

X \ $d_1 d_0$	00	01	11	10
0	1			1
1	1			1

$$d_0' = \bar{d_0}$$ （X, d_1 のとき 0,1 を…

X \ $d_1 d_0$	00	01	11	10
0			1	1
1		1		1

$$y_1 = \bar{X}d_1 + d_1d_0 + X\bar{d_1}d_0$$
$$= d_1(\overline{Xd_0}) + \bar{d_1}(Xd_0)$$
$$= d_1 \oplus Xd_0$$

X \ $d_1 d_0$	00	01	11	10
0		1	1	
1	1			1

$$y_0 = \bar{X}d_0 + X\bar{d_0}$$
$$= X \oplus d_0$$

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練習① RS-FF

$S_0 = \overline{q_1}\,\overline{q_0}$, $S_1 = \overline{x}\,\overline{q_1}\,\overline{q_0} + x\,\overline{q_1}\,q_0$

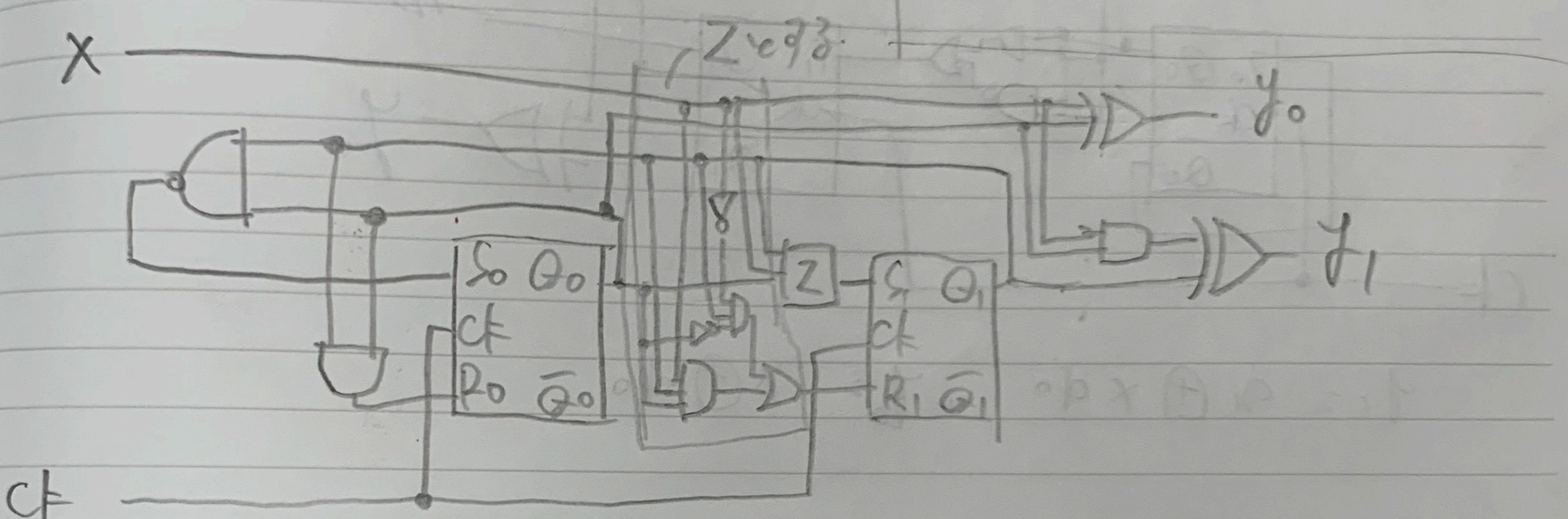
$R_0 = q_1 q_0$, $R_1 = x q_1 q_0 + \overline{x}\,\overline{q_1}\,q_0$

$q_1 q_0$ \ X	0	1
00	1	1
01		
11		
10	1	1

q_0'

$q_1 q_0$ \ X	0	1
00	1	
01		1
11	1	
10		1

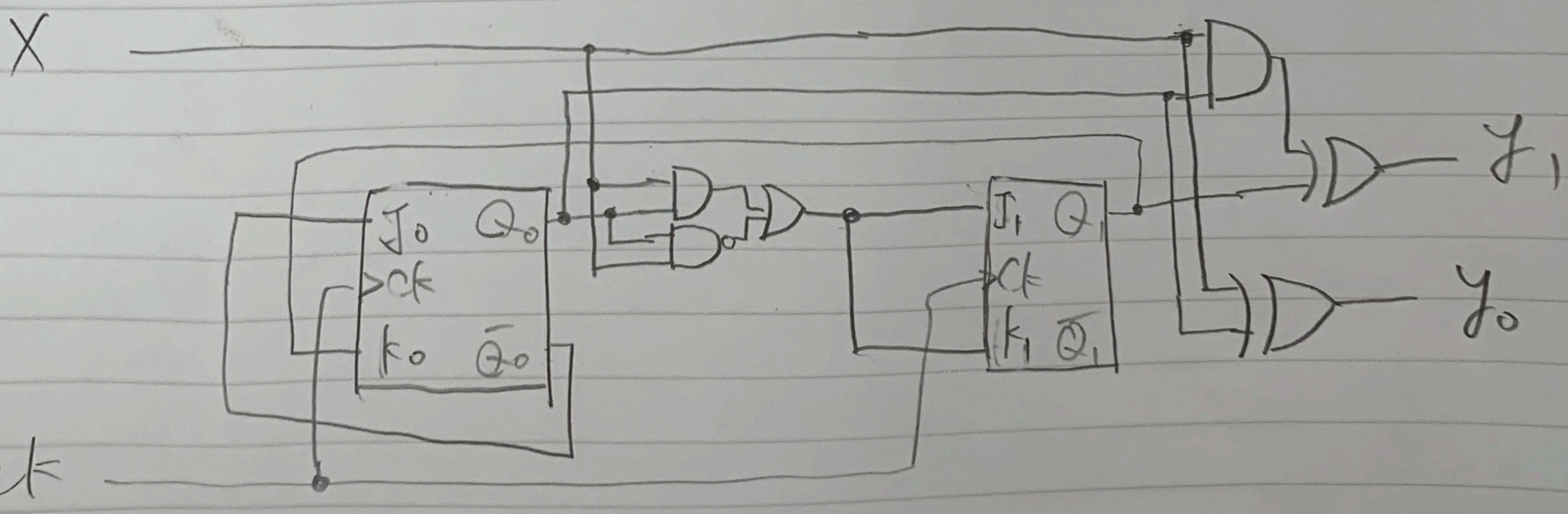
q_1'



練習② JK-FF

$J_0 = \overline{q_0}$, $J_1 = \overline{x} \cdot \overline{q_0} + x \cdot q_0$

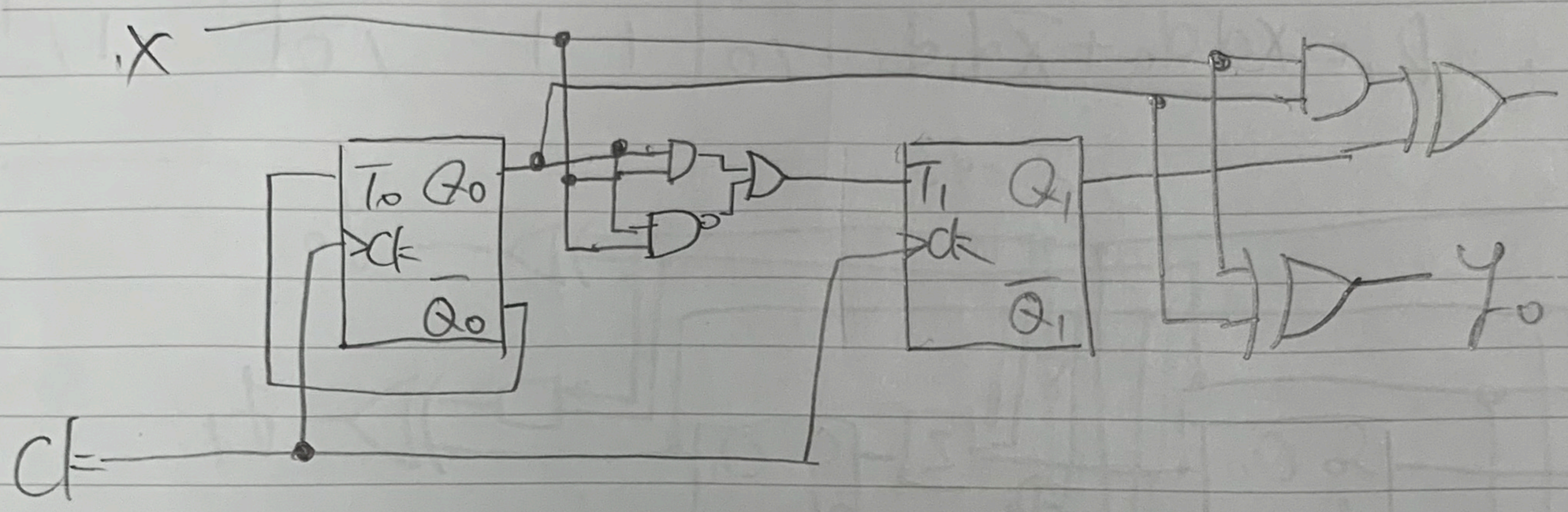
$K_0 = q_1$, $K_1 = \overline{x} \cdot \overline{q_0} + x \cdot q_0$



Date 1.27 rep14 朝吹次郎

演習③ T-FF

$T_0 = \overline{q_0}$, $T_1 = \overline{X} \cdot \overline{q_0} + X \cdot q_0$



$y_1 = q_1 \oplus X \cdot q_0$, $y_0 = X \oplus q_0$