

Deliverables

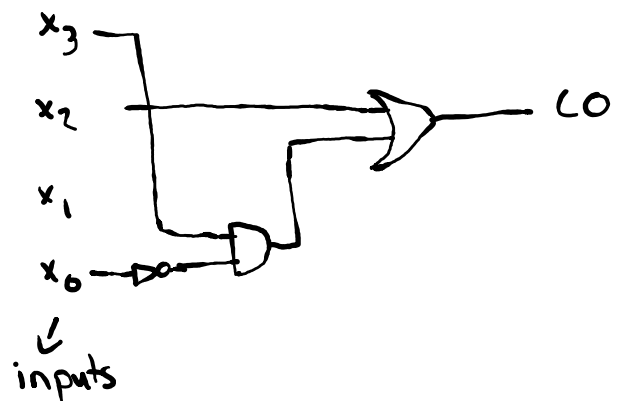
Truth Table

	x_3	x_2	x_1	x_0	$C0$	$C1$	$C2$	$C3$	$C4$
0	0	0	0	0	0	1	1	0	1
1	0	0	0	1	0	1	0	0	1
2	0	0	1	0	0	1	0	1	1
3	0	0	1	1	0	1	0	1	0
4	0	1	0	0	1	1	0	1	0
5	0	1	0	1	1	0	0	1	0
6	0	1	1	0	1	0	1	0	0
7	0	1	1	1	1	0	1	0	1
8	1	0	0	0	1	0	1	0	1
9	1	0	0	1	0	0	1	0	1
10	1	0	1	0	x	x	x	x	x
11	1	0	1	1	x	x	x	x	x
12	1	1	0	0	x	x	x	x	x
13	1	1	0	1	x	x	x	x	x
14	1	1	1	0	x	x	x	x	x
15	1	1	1	1	x	x	x	x	x

$C0$ K-map

$x_3 \backslash x_2$	00	01	11	10
00	0 ⁰	0 ¹	0 ³	0 ²
01	1 ⁴	1 ⁵	1 ⁷	1 ⁶
11	x ¹²	x ¹³	x ¹⁵	x ¹⁴
10	1 ⁸	0 ⁹	x ¹¹	x ¹⁰

$$C0 = x_2 + x_3 \overline{x_0}$$



Deliverables Cont.

K-map for C1

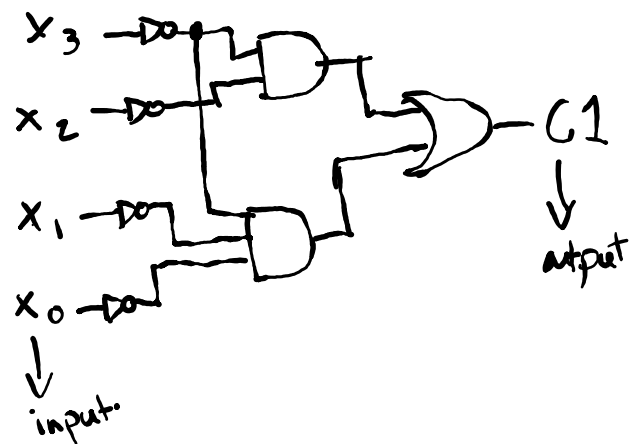
x_1, x_0

x_3, x_2	00	01	11	10
00	1	1	1	1
01	1	0	0	0
11	X	X	X	X
10	0	0	X	X

x_3, x_2

x_1, x_0 are all changing
so you remove these
var

$$C1 = \overline{x_3} \overline{x_2} + \overline{x_3} \overline{x_1} \overline{x_0}$$



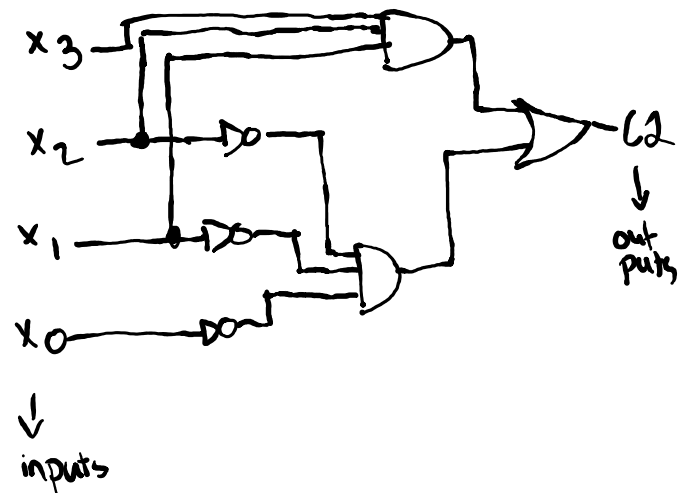
K-map for C2

x_1, x_0

x_3, x_2	00	01	11	10
00	1	0	0	0
01	0	0	1	1
11	X	X	X	X
10	1	1	X	X

x_3, x_2

$$C2 = x_3 + x_2 x_1 + \overline{x_2} \overline{x_1} \overline{x_0}$$

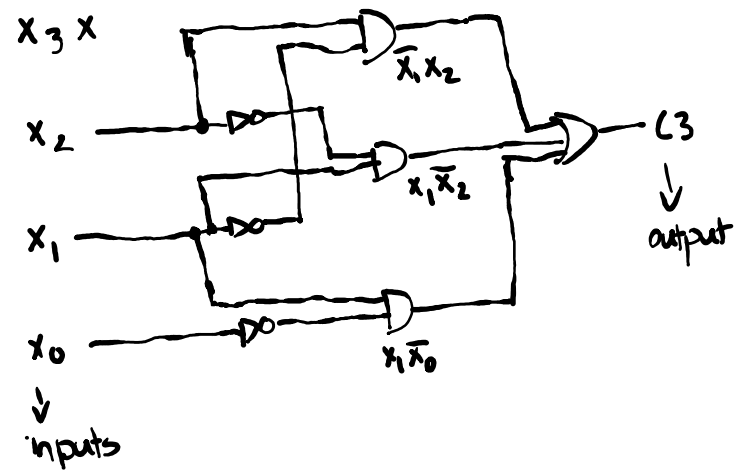


Deliverables Cont.

K-map for C3

$x_3 x_2$ \ $x_1 x_0$	00	01	11	10
00	0	0	1	1
01	1	1	0	1
11	x	x	x	x
10	0	0	x	x

$$C3 = x_1 \bar{x}_0 + x_1 \bar{x}_2 + \bar{x}_1 x_2$$

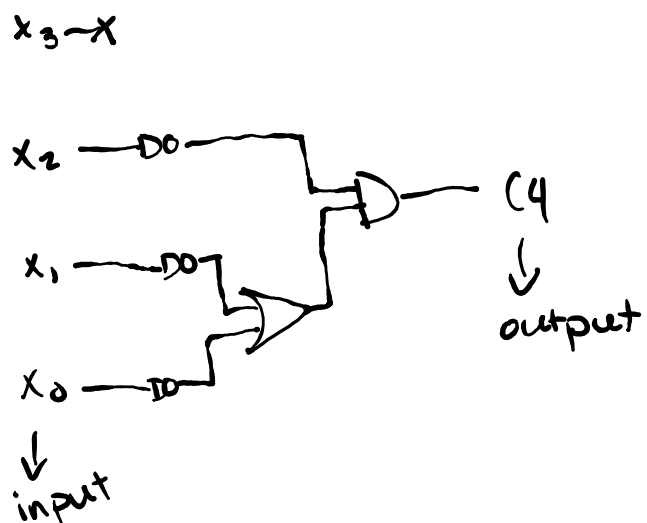


K-map for C4

$x_3 x_2$ \ $x_1 x_0$	00	01	11	10
00	1	1	0	1
01	0	0	0	0
11	x	x	x	x
10	0	1	x	x

$$C4 = \bar{x}_0 \bar{x}_2 + \bar{x}_1 \bar{x}_2$$

$$= \bar{x}_2 (\bar{x}_0 + \bar{x}_1)$$



↓
input