

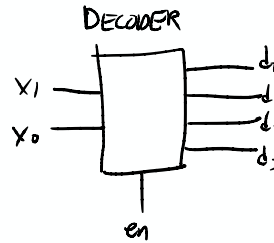
DECODERS

x_0	x_1	d_0	d_1	d_2	d_3
0	0	1	0	0	0
0	1	0	1	0	0
1	0	0	0	1	0

Sum of $x_0 x_1 = 1$
Everything else $= 0$.

what if we want $d_0 \rightarrow 3 = [0]$?

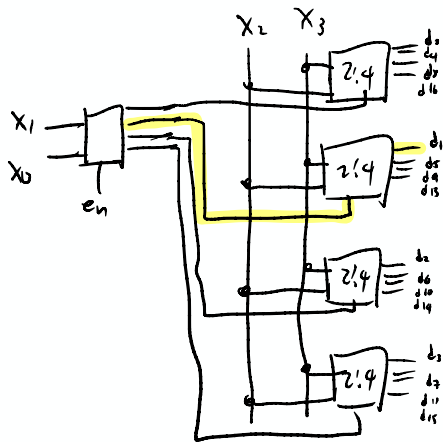
x_0	x_1	en	d_0	d_1	d_2	d_3
0	0	1	1	0	0	0
0	1	1	0	1	0	0
1	0	1	0	0	1	0
x	x	0	0	0	0	0



2:4 decoder
3:8 decoder
4:16 decoder

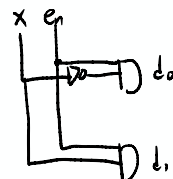
$x_3 x_2 x_1 x_0$ en
0 0 0 1 1

$x_0 x_1$
1 0 + 1

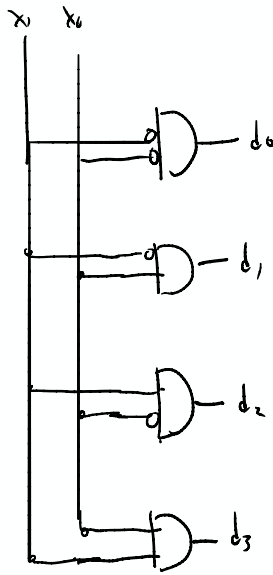


1:2 decoder

en	x	d_0	d_1
0	x	0	0
1	0	1	0
1	1	0	1



1-HOT circuit = only 1 output is one at a time.



3 WAYS TO IMPLEMENT A CIRCUIT

x_1	x_0		
0	0	0	
0	1	1	
1	0	0	
1	1	1	

$$\bar{x}_1 x_0 + x_1 x_0$$

SOP

$$= \sum m(1, 3)$$
