

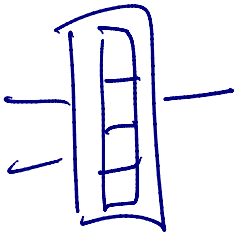
4/6/2009 test II

6,11

$$f = \underbrace{\bar{w}_1}_{=}\bar{w}_2 + \underbrace{\bar{w}_2}_{=}\bar{w}_3 + \underbrace{w_1 w_2 w_3}_{=}$$

$$= \bar{w}_2(\bar{w}_1 + \bar{w}_3) + w_2(w_1 w_3)$$

How many?



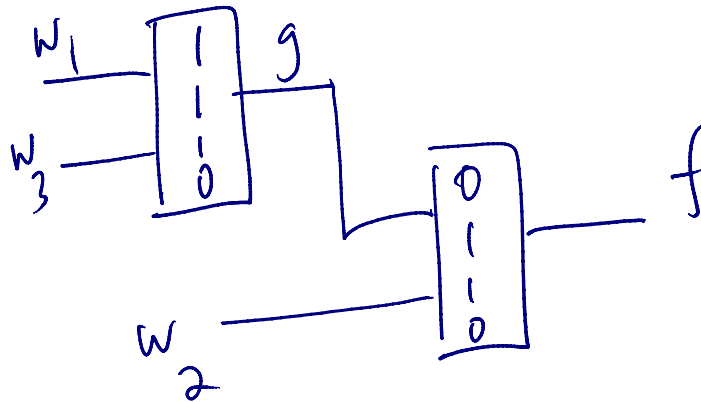
$$g = \bar{w}_1 + \bar{w}_3$$

$$\bar{g} = \overline{\bar{w}_1 + \bar{w}_3} = w_1 w_3$$

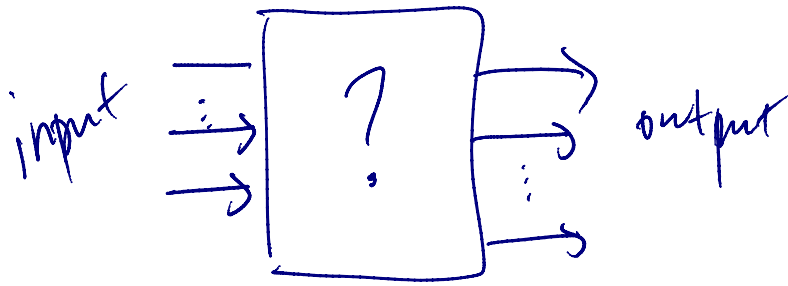
$$= \bar{w}_2 g + w_2 \bar{g}$$

w_1	w_3	$\bar{w}_1 + \bar{w}_3$
0	0	1
0	1	1
1	0	1
1	1	0

w_2	g	$\bar{w}_2 g + w_2 \bar{g}$
0	0	0
0	1	0
1	0	1
1	1	1

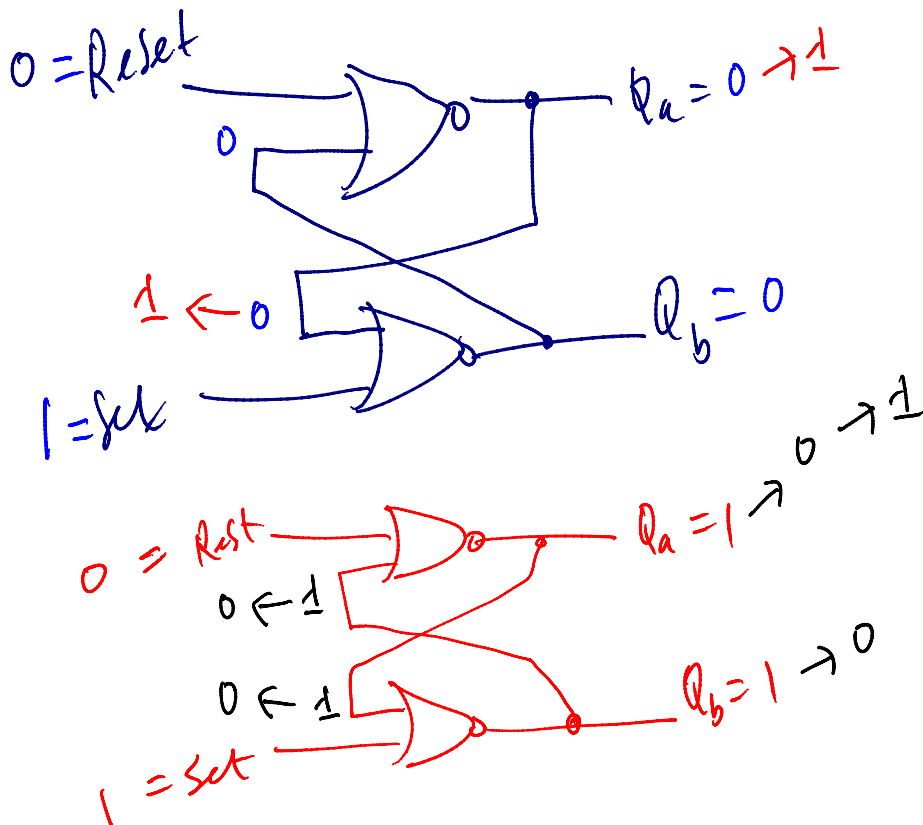


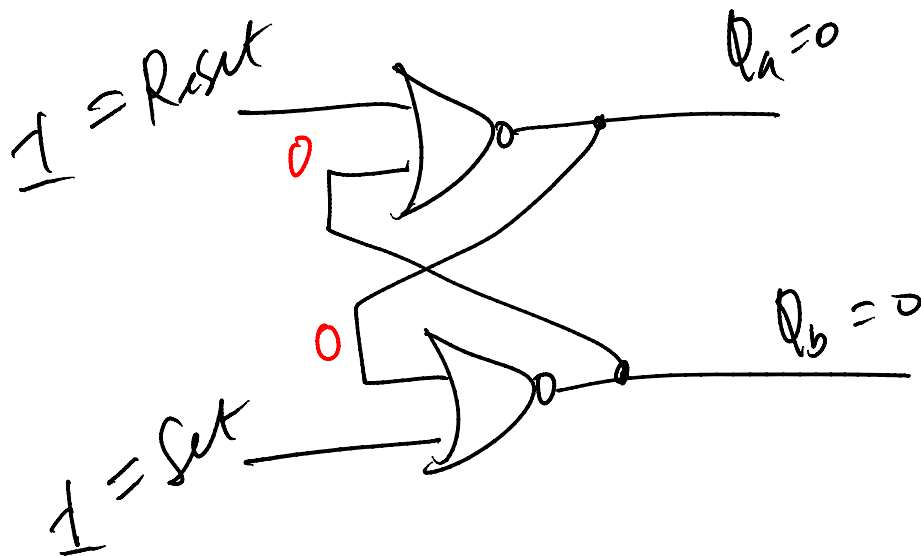
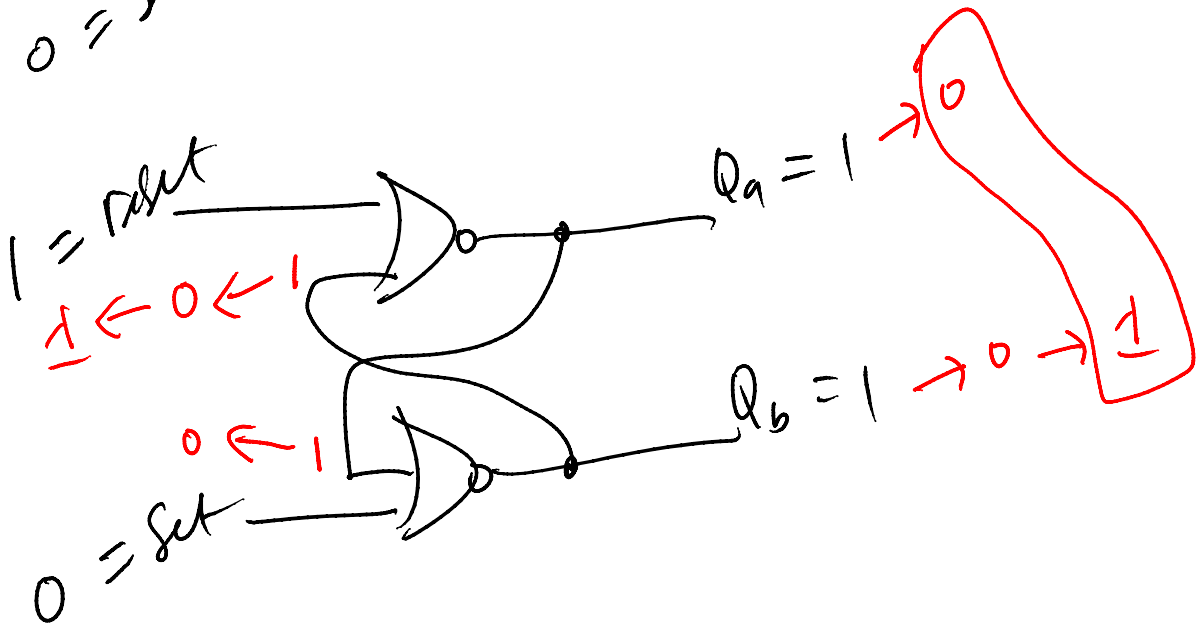
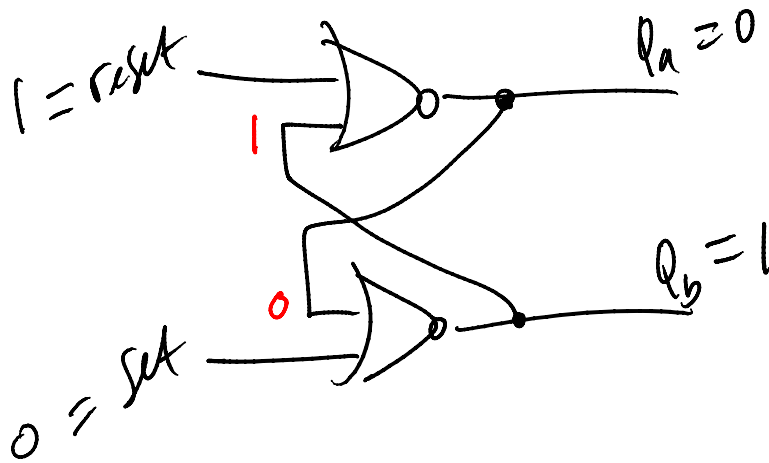
Read 303 - 420



combinational logic

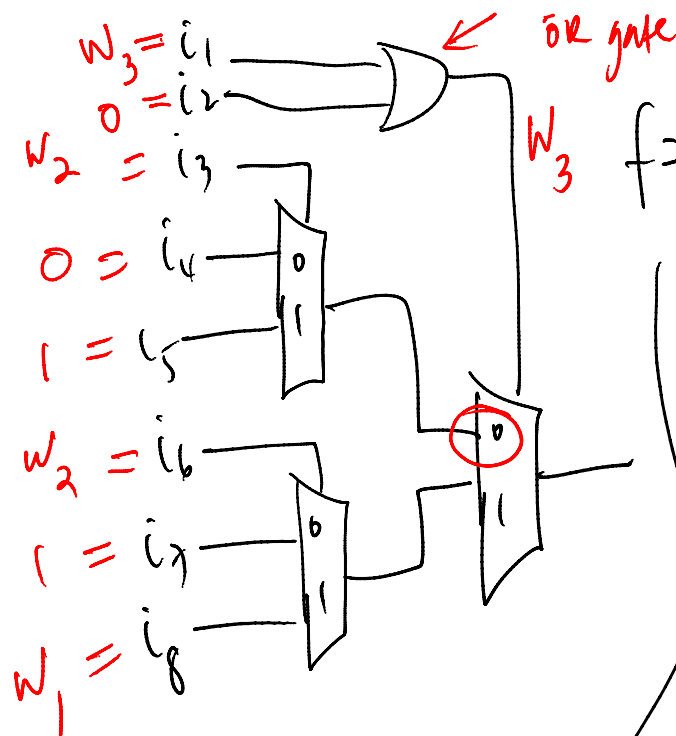
Sequential logic = combinational logic
+ memory elements





problem 6.16 (page 377)

$$f = w_2 \bar{w}_3 + w_1 w_3 + \bar{w}_2 w_3$$



$$f = \bar{w}_3(w_2) + w_3(\underbrace{w_1 + \bar{w}_2})$$

$$\begin{aligned} w_1 + \bar{w}_2 &= w_1(\bar{w}_2 + w_2) + \bar{w}_2 \\ &= w_1\bar{w}_2 + w_1w_2 + \bar{w}_2 \\ &= \bar{w}_2(w_1 + 1) + w_1w_2 \\ &= \bar{w}_2 + w_1w_2 \end{aligned}$$

$$f = \bar{w}_3[\underbrace{\bar{w}_2(0) + w_2(1)}] + w_3[\underbrace{\bar{w}_2(1) + w_2(w_1)}]$$