

# ECE/CS 252

FALL 2006

Professor Ramanathan

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## Homework Assignment #3 SOLUTIONS

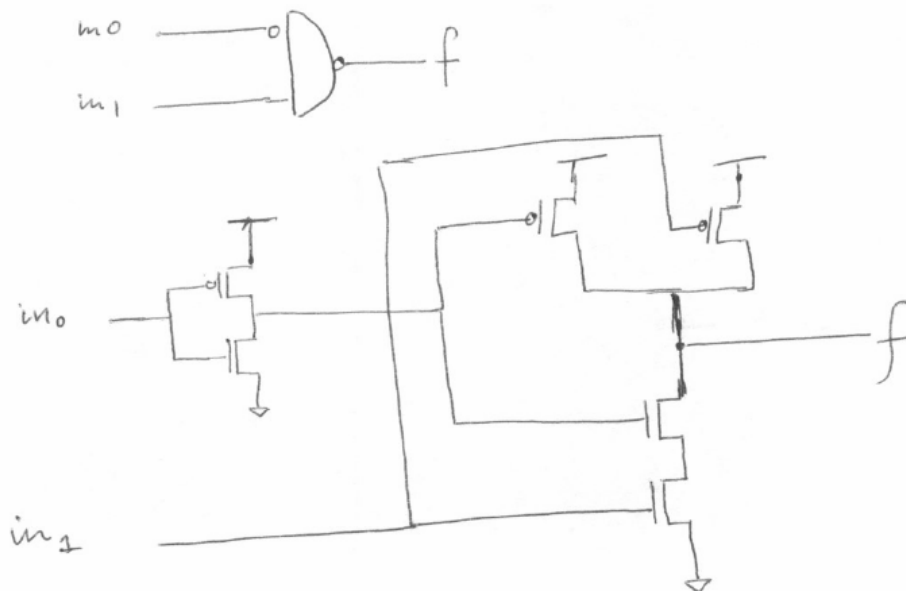
Due: Wed, Oct 18<sup>th</sup> at the beginning of class

1. Problem 3.6

$$C = A'; D = B'; Z = (C+D)' = (A'+B')' = A \cdot B$$

A	B	C	D	Z
0	0	1	1	0
0	1	1	0	0
1	0	0	1	0
1	1	0	0	1

2. Problem 3.20 (hint: Consider looking at  $\bar{f}$ )



3. Problem 3.21

$$2 * 2^{14} = 2^{15} = 32768 \text{ nibbles}$$

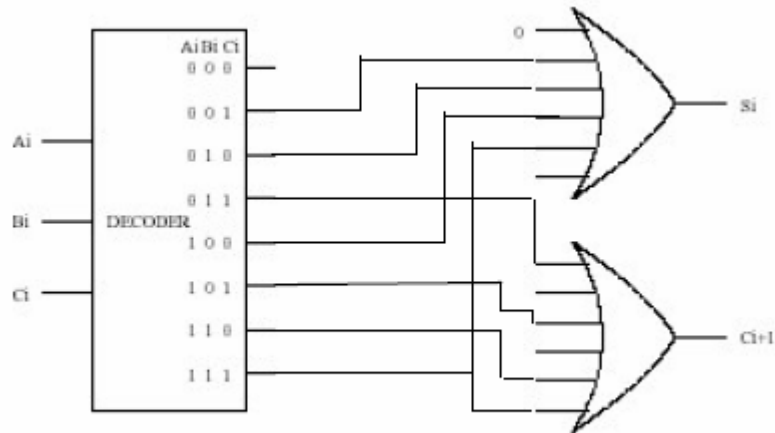
4. Problem 3.23

A	B	C	Z
0	0	0	0
0	0	1	0
0	1	0	0
0	1	1	0
1	0	0	0
1	0	1	0
1	1	0	0
1	1	1	0

5. Problem 3.24, part (a). Look at pg. 60-61 for an understanding of the mux.

(a)  $X=0 \Rightarrow S = A+B$ ,  $X=1 \Rightarrow S = A+C$

6. Problem 3.26. Draw figure 3.27 exactly the same (with the same order decoder output and same size or-gate inputs)

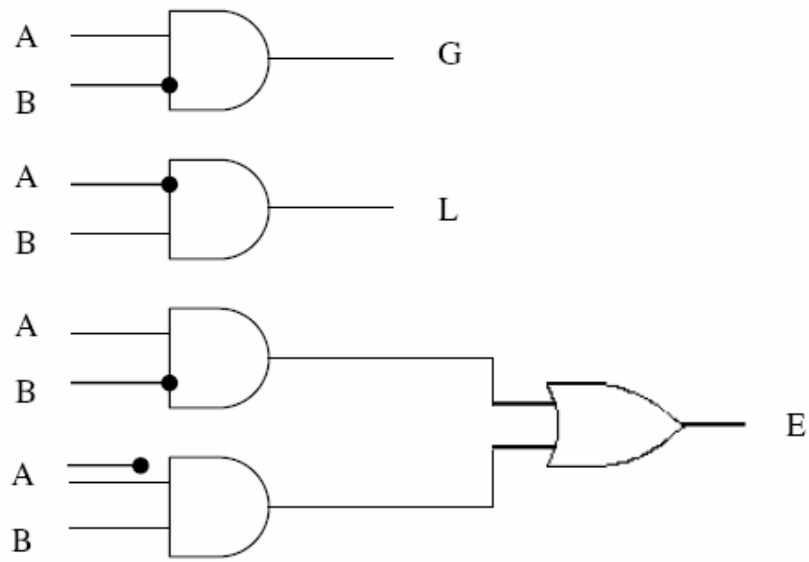


7. Problem 3.30

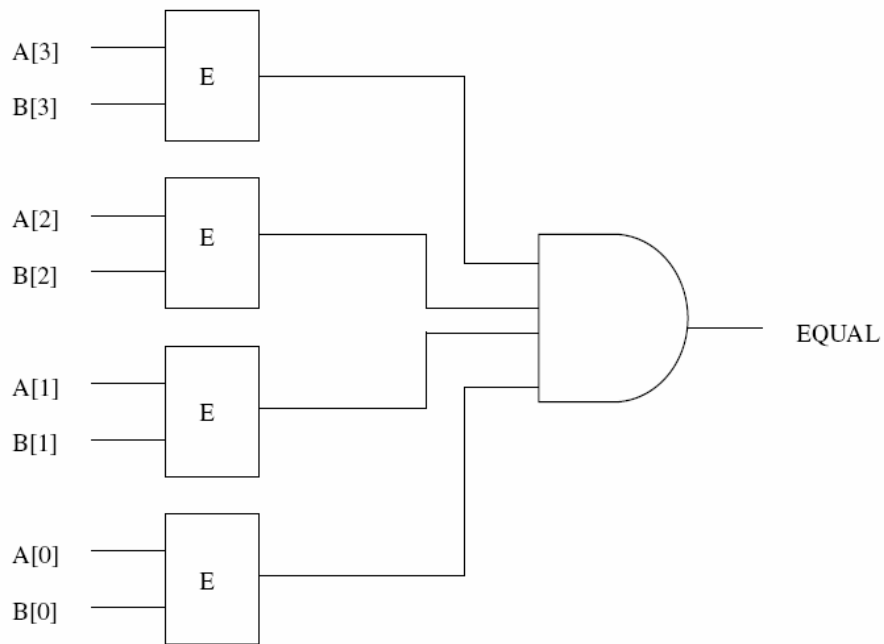
a)

A	B	G	E	L
0	0	0	1	0
0	1	0	0	1
1	0	1	0	0
1	1	0	1	0

b)



c)



8. Problem 3.34

a) 4 locations

b) 4 bits

c) 0001