

MB Ch 2 Problems  
Kurt Medley

6. { 0 = 0000, 1 = 0001, 2 = 0010, 3 = 0011, ... F = 1111 }

9.  $2^7 = 128$  Input words; 1111 1111 is the only word that produces a 1 output.

10. a)  $A(7)A(6)A(5) \dots A(0) = 0000\ 0000$ ; b)  $A(7)A(6)A(5) \dots A(0) = 0101\ 1101$ ; c)  $A(7)A(6)A(5) \dots A(0) = 1111\ 0000$ ; d)  $A(7)A(6)A(5) \dots A(0) = 0000\ 0000$

13.  $Y = -(A+B)$ ; output = low

16.  $Y = (-A)+(-B)$ ; output = low

20. Output is low;  $-AB + -BA = Y$

A	B	-A	-B	-AB	-BA	-AB + (-BA)
0	0	1	1	0	0	0
0	1	1	0	1	0	1
1	0	0	1	0	1	1
1	1	0	0	0	0	0

The truth table shows the possibility of a high input give the values of each element.

23.  $A = 0000$ ;  $B = 0001$ ;  $C = JIM$ ;  $D = OPR$

27. 8 Output lines

MB Ch 3 Problems

5. Q: 1, -Q: 0

6. Q: 0, -Q: 1

14.  $A+B + C+D$ ; All that produce high for A or B and C or D.

15.  $A = 0$ ,  $Y = 1$ ;  $A = 1$ ,  $Y = 0$ ; Inverter

22. Replacing the last NAND gate with a NOR gate will show that figures 3-32(a) and 3-32(b) are equivalent

24. 64 words in the truth table

a) ABCDE = 00111 = low

b) ABCDE = 10110 = low

c) ABCDE = 11010 = low

d) ABCDE = 10101 = low

A	B	A+B	-(A+B)
0	0	0	1
0	1	1	0
1	0	1	0
1	1	1	0

26. a) E(p), L(m)

b) E(r), L(i)

c) C(p)

d) L(m), E(r), E(i)

e) E(r), L(a)

f) L(m), E(i)

g) E(r)

h) L(a), E(u)

i) L(m), E(i)

j) E(r), L(b)

k) L(a), S(u), E(u)

l) E(a), L(o)

30. Y = 1100 1111

Y = 1010 1110

Y = 0001 0111

Y = 1010 0101

31. a) C = 0, S = 0

b) C = 0, S = 1

c) C = 0, S = 1

d) C = 1, S = 0

32. C = AB, S = A XOR B, S = A (circle around plus) B