

CSC 3501 Computer Organization and Design  
Solution of Homework #3

Chapter 3. Exercises 36.

To get 4096 bytes of memory, one would need 16 256x8 RAM chips ( $256 \times 16 = 4096$ ).

- a. 8
- b. 8
- c. 4, which implies a 4-to-16 decoder.

3.A Exercises (page 174)

1.

X \ YZ	00	01	11	10
0	1	1	1	0
1	1	1	1	1

c.  $x + y' + z$

2.

b.  $x'y'z' + x'yz' + xy'z' + xyz'$

Simplifies to:  
 $z'$

X \ YZ	00	01	11	10
0	1	0	0	1
1	1	0	0	1

c.  $y'z' + y'z + xyz'$

Simplifies to:  
 $y' + xz'$

X \ YZ	00	01	11	10
0	1	1	0	0
1	1	1	0	1

3.

c.

WX \ YZ	00	01	11	10
00		1		1
01		1	1	1
11	1	1		
10	1	1		1

Ans.  $wy' + y'z + w'xy + x'yz'$

4.

b.  $x'y' + wx'z'$

WX \ YZ	00	01	11	10
00	1	1		
01				
11				
10	1	1		1

c.  $y'z + wy' + w'xy + x'yz'$

WX \ YZ	00	01	11	10
00		1		1
01		1	1	1
11	1	1		
10	1	1		1

6. (b)

$x'z' + w'z$

WX \ YZ	00	01	11	10
00	1	1	1	1
01		X	1	X
11			X	
10	1		X	1