3(a)

$$f(x,y,z) = \Pi M(0,1,2,3,5,7)$$

x \ yz	00	01	11	10
0	0	0	0	0
1	1	0	0	1

$$f = x\bar{z}$$

(b)

$$f(w,x,y,z) = \Pi M(0,1,2,7,8,9,11,12,14,15)$$

wx \ yz	00	01	11	10
00	0	0		0
01			0	
11	0		0	0
10	0	0	0	

$$f = (x+y)(w+x+z)$$
$$(\bar{w}+\bar{x}+z)(\bar{x}+\bar{y}+\bar{z})$$
$$(\bar{w}+\bar{y}+\bar{z})$$

(c)

$$f(w,x,y,z) = \Pi M(5,10,11,13,14,15)$$

wx \ yz	00	01	11	10
00				
01		0		
11		0	0	0
10			0	0

$$f = (\bar{x}+y+\bar{z})(\bar{w}+\bar{y})$$