

(b) starting from prime implicants chart, use Petrick's method to find the minimum cover

	0	1	5	7	13	15
(0,1) P1	X	X				
(1,5) P2		X	X			
(5,7,13,15) P3			X	X	X	X

$$\text{cover} = m_0 \cdot m_1 \cdot m_5 \cdot m_7 \cdot m_{13} \cdot m_{15}$$

$$= (P_1)(P_1 + P_2)(P_2 + P_3)(P_3)(P_3)(P_3)$$

$$= (P_1)(P_1 + P_2)(P_2 + P_3) P_3 P_3 P_3$$

$$// P_3 P_3 P_3 = P_3$$

$$= (P_1)(P_1 + P_2)(P_2 + P_3) P_3$$

$$= (P_1 P_1 + P_1 P_2)(P_2 P_3 + P_3 P_3)$$

$$// P_1 P_1 = P_1$$

$$// P_3 P_3 = P_3$$

$$= P_1 + \cancel{P_1 P_2} + \cancel{P_2 P_3} + P_3$$

$$= (P_1)(P_3)$$

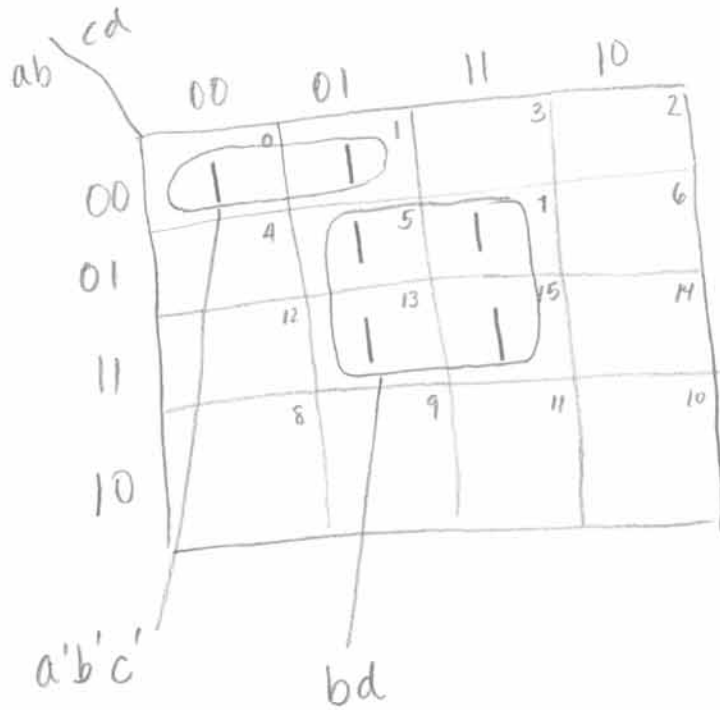
$$= P_1 P_3$$

$$\text{Cover} = P_1 P_3$$

$$F = a'b'c' + bd$$

(c) check with a k-map

$$F = \sum m(0, 1, 5, 7, 13, 15)$$



Solution

$$F = a'b'c' + bd$$