

$$f(b, a) = b \wedge a$$

	<u>a</u>	
b	1	0
	0	0

$$h(d, c, b, a) = \overline{d} \overline{c} b \overline{a} \vee d \overline{c} \overline{b} \overline{a} \vee ca$$

	<u>a</u>			
	0	0	1	0
	1	0	1	0
d	0	0	1	0
	1	0	1	0
	<u>c</u>			

$$j(d, c, b, a) = \overline{a} \overline{b} \overline{a} \vee ba$$

	<u>a</u>			
	1	0	0	1
	0	1	1	0
d	0	1	1	0
	1	0	0	1
	<u>c</u>			

$$g(c, b, a) = ca \vee \overline{c} \overline{b} \overline{a}$$

	<u>a</u>			
	1	0	1	0
	0	0	1	0
	0	0	1	0
	1	0	1	0
	<u>c</u>			

$$c(d, c, b, a) = d \vee ba \vee \bar{d} \bar{c} \bar{b} \vee ca$$

	<u>a</u>				
	0	0	1	1	
	0	1	1	0	b
d	1	1	1	1	
	1	1	1	1	
	<u>c</u>				

$$k(d, c, b, a) = \bar{c} \bar{b} \bar{a} \vee \bar{c} a \vee \bar{d} a$$

	<u>a</u>				
	1	1	1	0	
	0	1	1	0	b
d	0	1	0	0	
	1	1	0	0	
	<u>c</u>				

$$4 a) f(d, c, b, a) = \bar{b} a \vee ((d \vee c) \wedge (b \oplus \bar{a}))$$

$$\Leftrightarrow \bar{b} a \vee ((d \vee c) \wedge (b \oplus \bar{a}))$$

$$\Leftrightarrow \bar{b} a \vee (d \vee c) \vee (b \oplus \bar{a})$$

$$\Leftrightarrow \bar{b} a \vee (d \wedge \bar{c}) \vee (b \oplus a)$$

$$\Leftrightarrow \bar{b} a \vee d \bar{c} \vee (\bar{b} \oplus a)$$

$$\Leftrightarrow \bar{b} a \vee d \bar{c} \vee \bar{b} a \vee b \bar{a}$$

$$\Leftrightarrow (\bar{b} \wedge a) \vee (d \wedge \bar{c}) \vee (b \wedge \bar{a})$$

$$b) a \bar{b}: a \bar{b} c d \vee a \bar{b} \bar{c} d \vee a \bar{b} c \bar{d} \vee a \bar{b} \bar{c} \bar{d}$$

$$\bar{c} \bar{d}: a \bar{b} \bar{c} d \vee a \bar{b} c \bar{d} \vee a \bar{b} c d \vee a \bar{b} \bar{c} \bar{d}$$

$$\bar{a} b: \bar{a} b c d \vee \bar{a} b \bar{c} d \vee \bar{a} b c \bar{d} \vee \bar{a} b \bar{c} \bar{d}$$

$$KDNF: \underline{\bar{a} \bar{b} \bar{c} \bar{d}} \vee \underline{\bar{a} \bar{b} c \bar{d}} \vee \underline{\bar{a} \bar{b} c d} \vee \underline{\bar{a} \bar{b} \bar{c} d} \vee \underline{\bar{a} b c d} \vee \underline{\bar{a} b \bar{c} d} \vee \underline{\bar{a} b c \bar{d}} \vee \underline{\bar{a} b \bar{c} \bar{d}} \vee \underline{a \bar{b} c d} \vee \underline{a \bar{b} \bar{c} d} \vee \underline{a \bar{b} c \bar{d}} \vee \underline{a \bar{b} \bar{c} \bar{d}}$$