

Минимизация булевых функций с помощью карты Карно

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Задача 1.

x	y	z	f ₁	f ₂	f ₃					
0	0	0	1	0	1	x	y	\bar{y}	\bar{z}	f ₁
0	0	1	0	1	0	\bar{x}	1		1	
0	1	0	0	0	1		y	\bar{y}	\bar{z}	f ₂
0	1	1	1	0	0	x			1	1
1	0	0	0	1	0	\bar{x}		1		
1	0	1	1	0	0		y	\bar{y}	\bar{z}	f ₃
1	1	0	1	1	1	x				1
1	1	1	1	0	0	\bar{x}			1	1

$$f_1 = \bar{x}\bar{y}\bar{z} \vee \bar{x}yz \vee x\bar{y}z \vee xy\bar{z} \vee xyz =$$

$$= \bar{x} \vee xz \vee xy\bar{z}$$

$$f_2 = \bar{x}\bar{y}z \vee x\bar{y}\bar{z} \vee xy\bar{z} = \bar{x}\bar{y}z \vee x\bar{z}$$

$$f_3 = \bar{x}\bar{y}\bar{z} \vee \bar{x}y\bar{z} \vee xy\bar{z} = \bar{x}\bar{z} \vee xy\bar{z}$$