

Практическая работа №5

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Вариант 16

Дана функция(ДНФ): $(A \wedge B \wedge \bar{C}) \vee (\bar{A} \wedge B \wedge D) \vee (\bar{C} \wedge \bar{D})$

№	A	B	C	D	F ₁	F ₂	F ₃	F	СДНФ	СКНФ
0	0	0	0	0	0	0	1	1	$A \vee B \vee C \vee D$	0
1	0	0	0	1	0	0	0	0	0	$A \vee B \vee C \vee \bar{D}$
2	0	0	1	0	0	0	0	0	0	$A \vee B \vee \bar{C} \vee D$
3	0	0	1	1	0	0	0	0	0	$A \vee B \vee \bar{C} \vee \bar{D}$
4	0	1	0	0	0	0	1	1	$A \vee \bar{B} \vee C \vee D$	0
5	0	1	0	1	0	1	0	1	$A \vee \bar{B} \vee C \vee \bar{D}$	0
6	0	1	1	0	0	0	0	0	0	$A \vee \bar{B} \vee \bar{C} \vee D$
7	0	1	1	1	0	1	0	1	$A \vee \bar{B} \vee \bar{C} \vee \bar{D}$	0
8	1	0	0	0	0	0	1	1	$\bar{A} \vee B \vee C \vee D$	0
9	1	0	0	1	0	0	0	0	0	$\bar{A} \vee B \vee C \vee \bar{D}$
10	1	0	1	0	0	0	0	0	0	$\bar{A} \vee B \vee \bar{C} \vee D$
11	1	0	1	1	0	0	0	0	0	$\bar{A} \vee B \vee \bar{C} \vee \bar{D}$
12	1	1	0	0	1	0	1	1	$\bar{A} \vee \bar{B} \vee C \vee D$	0
13	1	1	0	1	1	0	0	1	$\bar{A} \vee \bar{B} \vee C \vee \bar{D}$	0
14	1	1	1	0	0	0	0	0	0	$\bar{A} \vee \bar{B} \vee \bar{C} \vee D$
15	1	1	1	1	0	0	0	0	0	$\bar{A} \vee \bar{B} \vee \bar{C} \vee \bar{D}$

Таблица 1: Таблица истинности

Формулы:

СДНФ: $F = (\bar{A} \wedge \bar{B} \wedge \bar{C} \wedge \bar{D}) \vee (\bar{A} \wedge \bar{B} \wedge \bar{C} \wedge D) \vee (\bar{A} \wedge \bar{B} \wedge C \wedge \bar{D}) \vee (\bar{A} \wedge \bar{B} \wedge C \wedge D) \vee (A \wedge \bar{B} \wedge \bar{C} \wedge \bar{D}) \vee (A \wedge \bar{B} \wedge \bar{C} \wedge D) \vee (A \wedge \bar{B} \wedge C \wedge \bar{D}) \vee (A \wedge \bar{B} \wedge C \wedge D)$

СКНФ:

$F = (A \wedge B \wedge C \wedge \bar{D}) \vee (A \wedge B \wedge \bar{C} \wedge D) \vee (A \wedge B \wedge \bar{C} \wedge \bar{D}) \vee (A \wedge \bar{B} \wedge \bar{C} \wedge D) \vee (\bar{A} \wedge B \wedge C \wedge \bar{D}) \vee (\bar{A} \wedge B \wedge C \wedge D) \vee (\bar{A} \wedge \bar{B} \wedge \bar{C} \wedge \bar{D}) \vee (\bar{A} \wedge \bar{B} \wedge \bar{C} \wedge D) \vee (\bar{A} \wedge \bar{B} \wedge C \wedge \bar{D}) \vee (\bar{A} \wedge \bar{B} \wedge C \wedge D)$

$F = \sum_{i=0}^7 (0, 4, 5, 7, 8, 12, 13)$

$F = \prod_{i=0}^9 (0, 1, 4, 5, 6, 9, 12, 13, 14)$

Карты Карно

СДНФ

	0	4	12	8
	1	5	13	9
	3	7	15	11
	2	6	14	10

СКНФ

	0	4	12	8
	1	5	13	9
	3	7	15	11
	2	6	14	10