

## Упрощение СДНФ (4 переменные)

Упростить совершенную дизъюнктивную нормальную форму.

Задача 18.1.

10

$$\bar{x}yzw \vee x\bar{y}\bar{z}\bar{w} \vee x\bar{y}z\bar{w} \vee xy\bar{z}\bar{w} \vee xyz\bar{w}$$

Задача 18.2.

10

$$\bar{x}y\bar{z}w \vee \bar{x}yzw \vee x\bar{y}\bar{z}\bar{w} \vee x\bar{y}z\bar{w} \vee xy\bar{z}\bar{w} \vee xyz\bar{w}$$

Задача 18.3.

10

$$\bar{x}\bar{y}\bar{z}\bar{w} \vee \bar{x}\bar{y}\bar{z}w \vee \bar{x}\bar{y}z\bar{w} \vee \bar{x}\bar{y}zw \vee x\bar{y}\bar{z}\bar{w} \vee x\bar{y}\bar{z}w \vee xy\bar{z}\bar{w} \vee xyz\bar{w}$$

Задача 18.4.

10

$$\bar{x}\bar{y}\bar{z}w \vee \bar{x}\bar{y}zw \vee \bar{x}y\bar{z}w \vee \bar{x}yzw \vee xyz\bar{w}$$

Задача 18.5.

10

$$\bar{x}\bar{y}\bar{z}w \vee \bar{x}\bar{y}zw \vee x\bar{y}\bar{z}w \vee x\bar{y}zw \vee xy\bar{z}\bar{w} \vee xy\bar{z}w \vee xyz\bar{w} \vee xyzw$$

Задача 18.6.

10

$$\bar{x}yzw \vee x\bar{y}\bar{z}\bar{w} \vee x\bar{y}\bar{z}w \vee xy\bar{z}\bar{w} \vee xy\bar{z}w$$

Задача 18.7.

10

$$\bar{x}\bar{y}\bar{z}\bar{w} \vee \bar{x}\bar{y}zw \vee \bar{x}y\bar{z}w \vee x\bar{y}\bar{z}\bar{w} \vee x\bar{y}zw \vee xyz\bar{w}$$

Задача 18.8.

10

$$\bar{x}\bar{y}\bar{z}\bar{w} \vee \bar{x}\bar{y}\bar{z}w \vee \bar{x}\bar{y}zw \vee \bar{x}y\bar{z}\bar{w} \vee x\bar{y}\bar{z}\bar{w} \vee x\bar{y}\bar{z}w \vee x\bar{y}zw \vee xyz\bar{w}$$

**Задача 18.9.**

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$$\bar{x}\bar{y}zw \vee x\bar{y}\bar{z}\bar{w} \vee x\bar{y}z\bar{w} \vee x\bar{y}zw$$

**Задача 18.10.**

10

$$\bar{x}\bar{y}\bar{z}\bar{w} \vee \bar{x}\bar{y}\bar{z}w \vee \bar{x}\bar{y}z\bar{w} \vee \bar{x}\bar{y}zw \vee x\bar{y}\bar{z}\bar{w} \vee x\bar{y}\bar{z}w \vee x\bar{y}z\bar{w} \vee x\bar{y}zw$$

**Задача 18.11.**

10

$$\bar{x}\bar{y}\bar{z}\bar{w} \vee \bar{x}\bar{y}\bar{z}w \vee \bar{x}\bar{y}z\bar{w} \vee \bar{x}\bar{y}zw \vee xyzw$$

**Задача 18.12.**

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$$\bar{x}\bar{y}zw \vee \bar{x}yz\bar{w} \vee x\bar{y}zw$$

**Задача 18.13.**

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$$\bar{x}\bar{y}\bar{z}\bar{w} \vee \bar{x}\bar{y}\bar{z}w \vee \bar{x}\bar{y}zw \vee x\bar{y}\bar{z}w \vee xyzw$$

**Задача 18.14.**

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$$\bar{x}\bar{y}\bar{z}\bar{w} \vee \bar{x}\bar{y}\bar{z}w \vee \bar{x}\bar{y}z\bar{w} \vee \bar{x}\bar{y}zw \vee x\bar{y}\bar{z}\bar{w} \vee x\bar{y}\bar{z}w \vee x\bar{y}z\bar{w} \vee x\bar{y}zw$$

**Задача 18.15.**

10

$$\bar{x}\bar{y}\bar{z}\bar{w} \vee \bar{x}\bar{y}zw \vee \bar{x}\bar{y}\bar{z}w \vee \bar{x}\bar{y}\bar{z}\bar{w} \vee \bar{x}\bar{y}z\bar{w} \vee \bar{x}\bar{y}zw \vee x\bar{y}\bar{z}w$$

**Задача 18.16.**

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$$\bar{x}\bar{y}\bar{z}w \vee \bar{x}\bar{y}\bar{z}\bar{w} \vee \bar{x}\bar{y}z\bar{w} \vee x\bar{y}\bar{z}\bar{w} \vee xyz\bar{w}$$

**Задача 18.17.**

10

$$\bar{x}\bar{y}\bar{z}\bar{w} \vee \bar{x}\bar{y}z\bar{w} \vee \bar{x}y\bar{z}\bar{w} \vee \bar{x}yz\bar{w} \vee \bar{x}yzw \vee xy\bar{z}\bar{w} \vee xyzw$$

**Задача 18.18.**

10

$$\bar{x}\bar{y}\bar{z}\bar{w} \vee \bar{x}\bar{y}z\bar{w} \vee \bar{x}y\bar{z}\bar{w} \vee \bar{x}yz\bar{w} \vee \bar{x}yzw \vee xy\bar{z}\bar{w} \vee xyzw$$

**Задача 18.19.**

10

$$\bar{x}\bar{y}\bar{z}w \vee \bar{x}\bar{y}z\bar{w} \vee \bar{x}y\bar{z}w \vee \bar{x}yz\bar{w} \vee \bar{x}yzw \vee x\bar{y}\bar{z}w \vee x\bar{y}z\bar{w} \vee x\bar{y}zw \vee xyz\bar{w} \vee xyzw$$

**Задача 18.20.**

10

$$\bar{x}\bar{y}zw \vee \bar{x}y\bar{z}\bar{w} \vee \bar{x}yzw \vee x\bar{y}\bar{z}\bar{w} \vee x\bar{y}z\bar{w} \vee xy\bar{z}\bar{w} \vee xyz\bar{w}$$

**Задача 18.21.**

10

$$\bar{x}\bar{y}\bar{z}\bar{w} \vee \bar{x}\bar{y}z\bar{w} \vee \bar{x}y\bar{z}w \vee xyz\bar{w} \vee xyzw$$

**Задача 18.22.**

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$$\bar{x}\bar{y}\bar{z}\bar{w} \vee \bar{x}\bar{y}zw \vee \bar{x}y\bar{z}\bar{w} \vee \bar{x}yz\bar{w} \vee x\bar{y}\bar{z}\bar{w} \vee x\bar{y}zw \vee xyzw$$

**Задача 18.23.**

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$$\bar{x}y\bar{z}\bar{w} \vee \bar{x}y\bar{z}w \vee \bar{x}y\bar{z}\bar{w} \vee \bar{x}y\bar{z}w \vee xy\bar{z}\bar{w} \vee xyzw$$

**Задача 18.24.**

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$$\bar{x}\bar{y}\bar{z}w \vee \bar{x}\bar{y}zw \vee \bar{x}y\bar{z}\bar{w} \vee \bar{x}yzw \vee x\bar{y}\bar{z}\bar{w} \vee x\bar{y}\bar{z}w \vee x\bar{y}zw \vee xy\bar{z}\bar{w} \vee xy\bar{z}w \vee xyzw$$

**Задача 18.25.**

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$$\bar{x}\bar{y}\bar{z}\bar{w} \vee \bar{x}\bar{y}z\bar{w} \vee x\bar{y}\bar{z}\bar{w} \vee x\bar{y}z\bar{w} \vee x\bar{y}z\bar{w} \vee xyz\bar{w} \vee xyzw$$

**Задача 18.26.**

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$$\bar{x}\bar{y}\bar{z}\bar{w} \vee \bar{x}\bar{y}z\bar{w} \vee \bar{x}\bar{y}z\bar{w} \vee \bar{x}\bar{y}z\bar{w} \vee \bar{x}yz\bar{w} \vee x\bar{y}z\bar{w} \vee xyzw$$

**Задача 18.27.**

10

$$\bar{x}\bar{y}z\bar{w} \vee \bar{x}\bar{y}z\bar{w} \vee x\bar{y}\bar{z}\bar{w} \vee x\bar{y}z\bar{w} \vee x\bar{y}z\bar{w} \vee xyzw$$

**Задача 18.28.**

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$$\bar{x}\bar{y}\bar{z}\bar{w} \vee \bar{x}yz\bar{w} \vee x\bar{y}\bar{z}\bar{w} \vee x\bar{y}z\bar{w} \vee xyz\bar{w} \vee xyzw$$

**Задача 18.29.**

10

$$\bar{x}\bar{y}\bar{z}\bar{w} \vee \bar{x}\bar{y}z\bar{w} \vee x\bar{y}\bar{z}\bar{w} \vee xyz\bar{w} \vee x\bar{y}z\bar{w} \vee xyz\bar{w} \vee xyzw$$

**Задача 18.30.**

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$$\bar{x}\bar{y}\bar{z}\bar{w} \vee \bar{x}\bar{y}z\bar{w} \vee \bar{x}yz\bar{w} \vee \bar{x}yz\bar{w} \vee x\bar{y}z\bar{w} \vee xyzw$$

**Задача 18.31.**

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$$\bar{x}\bar{y}\bar{z}\bar{w} \vee \bar{x}\bar{y}z\bar{w} \vee \bar{x}\bar{y}z\bar{w} \vee \bar{x}yz\bar{w} \vee \bar{x}yz\bar{w} \vee xyz\bar{w} \vee xyzw$$

**Упрощение СДНФ (4 переменные)**

1	$x\bar{w} \vee wzy\bar{x}$	0 0 0 0 0 0 0 1 1 0 1 0 1 0 1 0
2	$\bar{x}yw \vee \bar{w}x$	0 0 0 0 0 1 0 1 1 0 1 0 1 0 1 0
3	$\bar{z}$	1 1 0 0 1 1 0 0 1 1 0 0 1 1 0 0
4	$w\bar{x} \vee xyz\bar{w}$	0 1 0 1 0 1 0 1 0 0 0 0 0 0 1 0
5	$\bar{y}w \vee yx$	0 1 0 1 0 0 0 0 0 0 1 0 1 1 1 1
6	$x\bar{z} \vee zyw\bar{x}$	0 0 0 0 0 0 0 1 1 1 0 0 1 1 0 0
7	$\bar{z}wy \vee \bar{y}z$	0 0 1 1 0 1 0 0 0 0 0 1 1 0 1 0
8	$\bar{z}\bar{w}\bar{x} \vee \bar{y}w \vee \bar{y}x$	1 1 0 1 1 0 0 0 1 1 1 1 0 0 0 0
9	$\bar{y}zw \vee x\bar{y}\bar{w}$	0 0 0 1 0 0 0 0 1 0 1 1 0 0 0 0
10	$\bar{y}$	1 1 1 1 0 0 0 0 1 1 1 1 0 0 0 0
11	$\bar{y}\bar{z}\bar{w} \vee \bar{x}y\bar{z} \vee xyzw$	1 0 0 0 1 1 0 0 1 0 0 0 0 0 0 1
12	$\bar{y}zw \vee yz\bar{w}\bar{x}$	0 0 0 1 0 0 1 0 0 0 0 0 1 0 0 0
13	$wx \vee \bar{w}\bar{y}\bar{z}\bar{x}$	1 0 0 0 0 0 0 0 0 0 1 0 1 0 1 0
14	$yzx \vee y\bar{z}\bar{x} \vee \bar{y}\bar{z}xw \vee y\bar{w}$	0 0 0 0 1 1 1 0 0 1 0 0 1 0 1 1
15	$\bar{y}z \vee y\bar{z}w \vee \bar{y}x\bar{w}$	0 0 1 1 0 1 0 0 1 0 1 1 0 1 0 0
16	$y\bar{w} \vee \bar{y}\bar{z}w\bar{x}$	0 1 0 0 1 0 1 0 0 0 0 0 1 0 1 0
17	$\bar{x}\bar{w} \vee zy$	1 0 1 0 1 0 1 1 0 0 0 0 0 0 1 1
18	$\bar{y}x \vee z\bar{w}$	0 0 1 0 0 0 1 0 1 1 1 1 0 0 1 0
19	$w\bar{y} \vee z$	0 1 1 1 0 0 1 1 0 1 1 1 0 0 1 1
20	$\bar{w}x \vee w\bar{x}z \vee \bar{w}y\bar{z}$	0 0 0 1 1 0 0 1 1 0 1 0 1 0 1 0
21	$xz \vee \bar{x}\bar{w}\bar{y}\bar{z}$	1 0 0 0 0 0 0 0 0 0 0 1 1 0 0 1 1
22	$\bar{x}z\bar{y} \vee xzw \vee x\bar{z}\bar{y} \vee \bar{x}\bar{z}yw$	0 0 1 1 0 1 0 0 1 1 0 1 0 0 0 1
23	$\bar{x}y\bar{z} \vee xyw \vee x\bar{y}\bar{z}$	0 0 0 0 1 1 0 0 1 1 0 0 0 1 0 1
24	$x\bar{z} \vee w$	0 1 0 1 0 1 0 1 1 1 0 1 1 1 0 1
25	$\bar{w}\bar{y} \vee zx$	1 0 1 0 0 0 0 0 0 1 0 1 1 0 0 1 1
26	$\bar{x}\bar{y} \vee wz$	1 1 1 1 0 0 0 1 0 0 0 0 1 0 0 0 1
27	$\bar{x}z\bar{y} \vee xzw \vee x\bar{z}\bar{y}$	0 0 1 1 0 0 0 0 0 1 1 0 1 0 0 0 1
28	$\bar{x}y\bar{w} \vee xyz \vee x\bar{y}\bar{w}$	0 0 0 0 1 0 1 0 1 0 1 0 0 0 1 1
29	$\bar{w}\bar{z} \vee yx$	1 0 0 0 1 0 0 0 1 0 0 0 1 1 1 1
30	$yw \vee \bar{x}y$	0 0 0 0 1 1 1 1 0 0 0 0 0 0 1 0 1
31	$\bar{z}w\bar{x} \vee zwy \vee z\bar{w}\bar{x} \vee \bar{z}\bar{w}xy$	0 1 1 0 0 1 1 1 0 0 0 0 0 1 0 0 1