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The number of k-undivided families of subsets of an n-element set (k-undivided Boolean functions of n-variables). III. The case when n is arbitrary and $k \geq 3$. (Russian) Zbl 1249.05015

Diskretn. Anal. Issled. Oper., Ser. 1 12, No. 3, 60-73 (2005).

Summary: Let S be a finite set that consists of n different elements and $k \geq 2$ be a natural number. A family $\mathcal{F}$ of subsets $S_1, \dots, S_r$, $r \geq k$, of the set S is called k-undivided if the intersection of any k sets of $\mathcal{F}$ is non-empty. Such families are equivalent to k-undivided Boolean functions of n variables, i.e. to functions $f(x_1, \dots, x_n)$ such that any k vectors with $f(x_1, \dots, x_n) = 1$ have at least one component equal to 1. In the paper, an asymptotics is given for the number of k-undivided Boolean functions of n variables as $n \to \infty$ and $k \geq 3$ is fixed.

For Part I see [ibid., Ser. 1 10, No. 4, 31–69 (2003; Zbl 1032.05006)].

For Part II see [ibid., Ser. 1 12, No. 1, 12–70 (2005; Zbl 1077.05007)].

MSC:

05A16 Asymptotic enumeration
03E05 Other combinatorial set theory
06E30 Boolean functions

Cited in **1** Document

Keywords:

two-valued function; asymptotic expression; Post class

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