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Erdős, Paul; Hall, R.R.

Probabilistic methods in group theory. II. (In English)

Houston J. Math. 2, 173-180 (1976). [0362-1588]

[Part I: *P. Erdős* and *A. Rényi*, J. Analyse math. 14, 127-138 (1965; Zbl 247.20045).] The authors prove the following theorem: Let G be an abelian group of n elements. Put $K = \left[(1+\epsilon)\frac{\log n}{\log 2}\right]$. Choose k elements of our group in all possible ways. There the n^k ways of choosing the elements $x_1, \ldots, x_k$. For all but $o(n^k)$ choices are number of solutions of $\prod_{i=1}^k x_i^{\epsilon_i} = g$, $\epsilon_i = 0$ or 1 is $(1+o(1))\frac{2^k}{n}$ for every element g of G. This theorem settles an old problem of Erdős and Rényi.

Classification:
20K99 Abelian groups
11B83 Special sequences of integers and polynomials