Combinatorics – Tổ Hợp

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Tóm tắt nội dung

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Mục lục

1 Wikipedia's

1.1 Wikipedia/extremal combinatorics

"*Extremal combinatorics* is a field of mathematics, which is itself a part of mathematics. Extremal combinatorics studies how large or how small a collection of finite objects (numbers, graphs, vectors, sets, etc.) can be, if it has to satisfy certain restrictions.

Much of extremal combinatorics concerns classes of sets; this is called *extremal set theory*. E.g., in an n-element set, what is the largest number of k-element subsets that can pairwise intersect one another? What is the largest number of subsets of which more contains any other? The latter question is answered by Sperner's theorem, which gave rise to much of extremal set theory.

Another kind of example: How many people can be invited to a party where among each 3 people there are 2 who know each other & 2 who don't know each other? Ramsey theory shows: at most 5 persons can attend such a party (see Theorem on Friends & Strangers). Or, suppose given a finite set of nonzero integers, & are asked to mark as large a subset as possible of this set under the restriction that the sum of any 2 marked integers cannot be marked. It appears that (independent of what the given integers actually are) we can always mark at least $\frac{1}{3}$ of them." – Wikipedia/extremal combinatorics

2 Miscellaneous

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