

Existence questions in discrete mathematics
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Abstract

Counting problems are one of the central areas in mathematics. Quite often they are very hard. Even answering if there exists even one object with the desired properties may be extremely hard. In this talk I will consider a finite set $[n]$ and a family \mathcal{F} of subsets of $[n]$ that satisfy certain properties. We will consider the question is \mathcal{F} non empty. In particular we will consider the degree sequence problem for graphs, hypergraphs and general design problems.