Abstract:
Let $S \subset \mathbb{R}^+$ be a finite subset. Let $\alpha$ be any positive real number. We are interested to know how many distinct subsets of $S$ are there such that the sum of its elements are $\alpha$. In particular we consider the function

$$h(n) = \max_{\substack{\alpha \in \mathbb{R}^+ \\ S \subset \mathbb{R}^+ \\ \#S=n}} \# \left\{ T \subset S \mid \sum_{t \in T} t = \alpha \right\}.$$ 

This is also known as the Erdos-Moser Conjecture weak form. The solution uses basic linear algebra and no purely combinatorial proofs are known.