Abstract

Lotto designs and Lotto numbers

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A $(n, k, p, t)-$Lotto design is an $n-$set N and a set $\mathcal{B}$ of $k-$subsets of N (called blocks), so that for each $p-$subset P of N, there is a block $B \in \mathcal{B}$ for which $|P \cap B| \geq t$. The Lotto number $L(n, k, p, t)$ denotes the smallest number of blocks in a $(n, k, p, t)-$lotto design. We will discuss a few problems related to the determination of Lotto numbers and the construction of Lotto designs.