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Indlekofer, Karl-Heinz; Fehér, János; Stachó, László L.
On sets of uniqueness for completely additive arithmetic functions. (English) Analysis 16, No.4, 405-415 (1996).

For a completely additive function $f : \mathbb{N} \to \mathbb{C}$ a set $A \subset \mathbb{N}$ is called a set of uniqueness if $f$ is completely determined by its values on $A$. This concept can be generalized as follows. Let $f$ be a mapping of $\mathbb{N}$ into an abelian group $(G, +)$ with $f(mn) = f(m) + f(n)$ for all $m, n \in \mathbb{N}$ ($f$ “completely additive”). Given a subgroup $H$ of $G$, determine all subsets $A \subset \mathbb{N}$ such that for any completely additive $f : \mathbb{N} \to G$ we have $f(\mathbb{N}) \subset H$ whenever $f(A) \subset H$ (“sets of $G/H$ uniqueness”). The authors characterize sets of $\mathbb{Z}/(q\mathbb{Z})$-uniqueness ($q \in \mathbb{N}$) and $G/\{0\}$-uniqueness for finite abelian groups.

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