

A High Dimensional Version of Frobenius Numbers

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A numerical semigroup G is a subset of \mathbb{N} that is closed under addition. If the generators of G are coprime, then there exists a number $\text{Fr}(G)$ such that for all $n > \text{Fr}(G)$, $n \in G$. That is, $\text{Fr}(G)$ is the largest integer not in G . This number is widely studied, and many generalizations have been considered. In this talk, we discuss the analog of the Frobenius number to semigroups of \mathbb{N}^n . If $G \subseteq \mathbb{N}^n$ is a semigroup, is there is an element $v \in \mathbb{N}^n$ such that for all $n > v$, $n \in G$? This version of the problem seems to be missing from the literature. We will give the \mathbb{N}^n -analogues of the problem under which the answer is affirmative.