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Weighted Schreier-type Sets and the Fibonacci Sequence,
Fibonacci Quart. **62** (2024), no. 4, 305–315.

Abstract

For a finite set $A \subset \mathbb{N}$ and $k \in \mathbb{N}$, let $\omega_k(A) = \sum_{i \in A, i \neq k} 1$. For each $n \in \mathbb{N}$, define

$$a_{k,n} = |\{E \subset \mathbb{N} : E = \emptyset \text{ or } \omega_k(E) < \min E \leq \max E \leq n\}|.$$

We prove that

$$a_{k,k+\ell} = 2F_{k+\ell} \text{ for all } \ell \geq 0 \text{ and } k \geq \ell + 2,$$

where F_n is the n th Fibonacci number.