Abstract

Let $U(P, Q)$ denote the Lucas sequence satisfying the recursion relation

$$U_{n+2} = PU_{n+1} - QU_n,$$

where $U_0 = 0$, $U_1 = 1$, and $P$ and $Q$ are integers. Let $z(n)$, called the rank of appearance of $n$ in $U(P, Q)$, denote the least positive integer $m$ such that $U_m \equiv 0 \pmod{n}$. We find all fixed points $n$ for the rank of appearance such that $z(n) = n$. We also show that $z(n) \leq 2n$ when $z(n)$ exists. This paper improves results considered by Diego Marques regarding the Fibonacci sequence.