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Abstract

Let the Lucas numbers $\{L_n\}$ be defined by $L_{n+2} = L_{n+1} + L_n$ with initial terms $L_0 = 2$, $L_1 = 1$. It is well known that if N is an odd prime, then $L_N \equiv L_1 \equiv 1 \pmod{N}$. If N is a positive odd composite integer for which the above-mentioned congruence also holds, then N is called a Dickson pseudoprime with respect to the Lucas numbers. Paul Bruckman proved that if N is a Dickson pseudoprime with respect to the Lucas numbers for which $\gcd(N, 6) = 1$, then L_N is also a Dickson pseudoprime with respect to the Lucas numbers. We generalize this theorem by Bruckman from the Lucas numbers $\{L_n\}_{n=0}^{\infty}$ to more general second-order linear recurrences.