Lawrence Somer and Curtis Cooper
Lucas $(a_1, a_2, \dots, a_k = \pm 1)$ *Pseudoprimes*,
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Abstract

Cooper and Somer define a Lucas $(a_1, a_2, \dots, a_k = \pm 1)$ sequence $\{G_n\}$ for all integers n as

$$G_n = x_1^n + x_2^n + \cdots + x_k^n,$$

where $x_1, x_2, \dots, x_k$ are roots of the equation

$$x^k = a_1 x^{k-1} + a_2 x^{k-2} + \cdots + a_k$$

with integer coefficients. Then they define Lucas $(a_1, a_2, \dots, a_k = \pm 1)$ pseudoprimes to be composite n such that

$$G_n \equiv G_1 \pmod{n} \text{ and } G_{-n} \equiv G_{-1} \pmod{n}.$$

Adams and Shanks and Szekeres had previously used negative indices in describing higher-order pseudoprimes. In this paper, we will relate pseudoprimes occurring in different Lucas $(a_1, a_2, \dots, a_k = \pm 1)$ sequences. And we will provide substantial numerical tables giving Lucas $(a_1, a_2, \dots, a_k = \pm 1)$ pseudoprimes for many different Lucas $(a_1, a_2, \dots, a_k = \pm 1)$ sequences.