

Luca, F.

Fibonacci and Lucas numbers with only one distinct digit. (English) Zbl 0958.11007
Port. Math. 57, No. 2, 243-254 (2000).

Let F_n and L_n denote respectively the Fibonacci and Lucas numbers. The main results of this paper are: Theorem. If $F_n = a(10^m - 1)/9$ [respectively, $L_n = a(10^m - 1)/9$] for some integer $0 \leq a \leq 9$, then $0 \leq n \leq 6$ or $n = 10$ [respectively, $0 \leq n \leq 5$]. Surprisingly, the methods of proofs are completely elementary. The author makes no use of Baker's theory of linear forms in logarithms, he just uses elementary algebra, congruences and the quadratic reciprocity law in a very clever way.

Reviewer: [Maurice Mignotte \(Strasbourg\)](#)

MSC:

[11A63](#) Radix representation; digital problems
[11B39](#) Fibonacci and Lucas numbers and polynomials and generalizations
[11D61](#) Exponential Diophantine equations

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Keywords:

[Fibonacci numbers](#); [Lucas numbers](#); [digit expansion](#)

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