

Paul K. Romano and Harry McLaughlin
On Non-Linear Recursive Sequences and Benford's Law,
Fibonacci Quart. **49** (2011), no. 2, 134–138

Abstract

A large class of deterministic sequences are known to obey Benford's law. Recall that a sequence $\{x_n\}$ obeys Benford's law if and only if $\log_{10} |x_n| \pmod{1}$ is uniformly distributed. It is proved herein that a particular class of sequences defined by multiplicative recursions obey Benford's law. This includes the three-term multiplicative Fibonacci sequence defined by $x_n = x_{n-1} \cdot x_{n-2}$.