

Szalay, László

A discrete iteration in number theory. (Hungarian. English, German summaries) Zbl 0801.11011
Berzsenyi Dániel Tanárk. Föisk. Tud. Közl., Termtud. 8(3), 71-91 (1992).

For a positive integer M the paper investigates the sequences x_1, x_2, x_3, \dots of nonnegative integers, where $0 \leq x_i < M$ and $x_{n+1} \equiv x_n^2 \pmod{M}$ for $n \geq 1$. These sequences are obviously periodic for any initial term x_1 . The author shows many properties of the sequences using the elementary properties of congruences. Graph representations of the results are also presented.

Reviewer: [P.Kiss \(Eger\)](#)

MSC:

- [11B50](#) Sequences (mod m)
- [11A07](#) Congruences; primitive roots; residue systems
- [05C25](#) Graphs and abstract algebra (groups, rings, fields, etc.)

Cited in **14** Documents

Keywords:

[iteration](#); [residue classes](#); [cycles](#); [periodic sequences](#); [congruences](#)