Abstract

In this difference equation, Stability, Periodicity, boundedness, global Stability.

We investigate some qualitative behavior of the solutions of the difference equation \( \Delta x_n = \frac{a + b x_{n-1}}{c + d x_{n-1}} \) where the initial conditions are arbitrary positive real numbers such that \( x_0 \) where \( x \) and \( y \) are positive constants.

References

1. R. DeVault, S. W. Schultz, On the dynamics of \( \Delta x_n = \frac{a + b x_{n-1}}{c + d x_{n-1}} \) Domm. Appl. Nonlinear Analysis,12 (2005), 35-40.
3. E. M. Elabbasy, H. El-Metwally and E. M. Elsayed. On the difference equation \( \Delta x_n = \frac{a + b x_{n-1}}{c + d x_{n-1}} \) Adv. Difference Equ., pages Art. ID, 10 (2006), 82579.

**Index Terms**

Computer Science Applied Mathematics

**Keywords**

Difference equation, Stability, Periodicity, Boundedness