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Summary: In this paper, we study the qualitative behavior of some systems of second-order rational difference equations. More precisely, we study the equilibrium points, local asymptotic stability of equilibrium point, instability of equilibrium points, global character of equilibrium point, periodicity behavior of positive solutions and rate of convergence of positive solutions of these systems. Some numerical examples are given to verify our theoretical results.

MSC:
39A20 Multiplicative and other generalized difference equations
39A22 Growth, boundedness, comparison of solutions to difference equations
39A23 Periodic solutions of difference equations
39A30 Stability theory for difference equations

Keywords:
rational difference equations; global character; rate of convergence; periodic solution; equilibrium points; asymptotic stability; positive solutions; numerical examples

Full Text: DOI

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