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Growth of meromorphic solutions of certain difference equations. (Chinese. English summary)

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Summary: We investigate the order of growth of meromorphic solutions and non-existence of admissible transcendental solutions of some difference equations. Using Nevanlinna basic theory, we estimate the order and lower-order of meromorphic solutions when \( p(z) \) is polynomial. Some examples are also given to show that the results are exact.

MSC:

39A22 Growth, boundedness, comparison of solutions to difference equations
30D35 Value distribution of meromorphic functions of one complex variable, Nevanlinna theory
39A12 Discrete version of topics in analysis
39A45 Difference equations in the complex domain

Keywords:
difference equation; meromorphic solution; order of growth; transcendental solutions; Nevanlinna theory