

عنوان مقاله:

An algorithm for counting the number of periodic points of a family of polynomials

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خلاصه مقاله:

In this paper we consider the family $f_a(x) = ax^d(x - 1) + x$ when $a < 1$ is a real number and $d \geq 2$ is an even integer. The function f_a has a unique positive critical point. By decreasing the parameter a , the behavior of the orbit of this critical point changes. In this paper we consider two cases. In the first case the orbit of the positive critical point converges to 1 and in the second case the positive critical point is mapped to a repelling periodic point of period 2 . In each case we give a recursive formula to determine the number of the periodic points of f_a . Also, in each case we introduce an invariant set on which f_a is chaotic. We employ conjugacy map and symbolic dynamics in our investigations.

کلمات کلیدی:

Cantor set, chaos, conjugacy, periodic points, symbolic dynamics

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