

Clark Kimberling

*Polynomials Defined by a Second-order Recurrence, Interlacing Zeros,
and Gray Codes,*

Fibonacci Quart. **48** (2010), no. 3, 209–218.

Abstract

A sequence of polynomials is defined by the recurrence $P_{n+1} = (P_n + c - a)^2 - c$, with $P_0 = x - c$. Conditions are found for interlacing zeros among these polynomials, and an association between zeros and Gray codes is described. If $c = a = 2$, the polynomials are closely related to Chebyshev polynomials of the first kind.