

How will changing the Initial Conditions change a Fibonacci Polynomial

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Abstract

Consider a Fibonacci-type Polynomial Sequence given by the recurrence $F_0(x) = a$, $F_1(x) = x + a$, $F_n(x) = x^2F_{n-1}(x) + F_{n-2}$, where $n \geq 2$ and $a \in \mathbb{Z}^-$. Let g_n be the maximal real root of $F_n(x)$. In this talk we will give asymptotic results for g_n numerical as well as analytic results will be presented. We will also give numerical results for the maximal real root of the derivatives and anti-derivatives of $F_n(x)$.