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Degree n Relatives of the Golden Ratio and Resultants of the corresponding polynomials,

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Abstract

Computations are given of the resultants $\text{Res}(s_m, s_n)$ of pairs of Selmer polynomials $s_n = s_n(X) = X^n - X - 1$. It is shown that for each fixed $m \in \mathbb{N}$ the sequence of integers $\text{Res}(s_m, s_{m+k}) = \text{Res}(s_m(X), X^k - 1)$ satisfies a simple linear recursion which can be described in terms of higher Lucas sequences.