D. Neftin and A. Ostrov: Fibonacci like sequences as polynomial values and almost universal Hilbert sets

Given a polynomial $g(x)$ over the rationals $\mathbb{Q}$, which Fibonacci numbers are values in $g(\mathbb{Q})$? Over the last century, many results identified the solutions to such problems for various polynomials and recurrence sequences, yielding the finiteness of such values. For recurrence sequences whose rule is similar to a Fibonacci one, we identify the special family of polynomials g for which the value set is infinite. Moreover, we shall discuss the related problem of "universal Hilbert sets" and identify the special irreducible polynomials $P(t,x)$ in $\mathbb{Q}(t)[x]$ for which $P(F_n, x)$ is reducible over $\mathbb{Q}$ for infinitely many n's.