

Leonid Bedratyuk

Derivations and Identities for Fibonacci and Lucas Polynomials,
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Abstract

We introduce the notion of Fibonacci and Lucas derivations in the algebra of polynomials. We prove that any element of the kernel of the derivations gives a polynomial identity satisfied by the Fibonacci and Lucas polynomials. Also, we prove that any polynomial identity satisfied by the Appel polynomials yields a polynomial identity satisfied by the Fibonacci and Lucas polynomials. We describe the corresponding intertwining maps.