Abstract

We develop convolution formulas linking the Fibonacci, Lucas, Jacobsthal, and Jacobsthal-Lucas polynomials, and then deduce the corresponding ones for Pell-Jacobsthal polynomials, and their numeric counterparts. Using the numeric Fibonacci-Jacobsthal hybridity, we show how the corresponding Fibonacci-Jacobsthal-Lucas, Lucas-Jacobsthal, and Lucas-Jacobsthal-Lucas convolution formulas can be derived. We also construct combinatorial models for the Fibonacci-Jacobsthal, Fibonacci-Jacobsthal-Lucas, and Lucas-Jacobsthal-Lucas convolutions.