

The Möbius Function and Fibonacci Numbers

Emil Daniel Schwab¹ and Gabriela Schwab²

Department of Mathematical Sciences, University of Texas at El Paso
El Paso, TX 79968, USA, eschwab@utep.edu

²Department of Mathematics, El Paso Community College
El Paso, TX, USA, eschwab@epcc.edu

The (classical) Möbius function is the (Dirichlet) convolution inverse of the zeta function. We will say that the convolution inverse of the Fibonacci arithmetic function is the Fibonacci Möbius function. This function is precisely the Cohen's generalized Möbius function of order 2, and leads to some interesting results on Fibonacci numbers via Möbius inversion formula.

Keywords: Möbius function, Fibonacci numbers, Arithmetic function