

Brian Curtin, Ena Salter Michael, and David Stone
Lucas' Hyperbolas for Fibonacci Vectors,
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Abstract

E. Lucas showed that every point in the plane whose coordinates are consecutive Fibonacci numbers lies on one of two hyperbolas. We show that every point in any fixed higher dimension whose coordinates are consecutive Fibonacci numbers also lies on one of two hyperbolae; moreover, these are the only lattice points on the hyperbolas. We also give some remarkable results concerning the positions of these points on the hyperbolas, as measured by appropriate angles. We present analogous results for points whose coordinates are consecutive Lucas numbers.