Alex Eustis and Mark Shattuck Combinatorial Proofs of Some Formulas for L_m^r , Fibonacci Quart. **48** (2010), no. 1, 62–67.

Abstract

We provide combinatorial proofs of some formulas for the power of a Lucas number which as far as we know have only been proven using other methods. We achieve this by introducing a new kind of object we call a *bracket* into the usual square-and-domino tiling model.