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Elliot P. Ossanna*, eossanna@math.hawaii.edu. *Fractal Nature of Generalized Binomial Triangles mod p.*

We generalize Pascal's Triangle to a family of cellular automata, each triangle generated by a Lucas Sequence of the First Kind. We observe that much like with Pascal's Triangle, some of these Lucas Sequence triangles exhibit fractal-like patterns upon reducing the entries modulo certain primes, and that these patterns can be used to rigorously generate a fractal. The final result is a conclusion of which Lucas Sequences and primes generate fractals, and that when a fractal is generated, it is uniquely determined by the prime modulus, not the underlying Lucas Sequence. (Received January 26, 2019)