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OH 454692316. *Discrete Fractional Calculus with the Nabla Operator.*

Properties of discrete fractional calculus in the sense of a backward difference are introduced and developed. Exponential laws and a product rule are developed and relations to the forward fractional calculus are explored. Properties of the Laplace transform for the nabla derivative on the time scale of integers are developed and a fractional finite difference equation is solved with a transform method. As a corollary, two new identities for the gamma function are exhibited. (Received June 03, 2009)