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Jocelyn Quaintance* (jqaint@math.wvu.edu), 1602 Lakeside Village, Morgantown, WV 26508, and **H. W. Gould**. *Annihilation Coefficients, Binomial Expansions and q -Analogues*. Preliminary report.

Let $\{A_n\}_{n=0}^{\infty}$ be an arbitrary sequence of natural numbers. We say $A(n, k; A)$ are the Convolution Annihilation Coefficients for $\{A_n\}_{n=0}^{\infty}$ if and only if

$$\sum_{k=0}^n A(n, k; A)(x - A_k)^{n-k} = x^n. \quad (1)$$

Similarly, we define $B(n, k; A)$ to be the Dot Product Annihilation Coefficients for $\{A_n\}_{n=0}^{\infty}$ if and only if

$$\sum_{k=0}^n B(n, k; A)(x - A_k)^k = x^n. \quad (2)$$

The main result of this paper is an explicit formula for $B(n, k; A)$, which depends on both k and $\{A_n\}_{n=0}^{\infty}$. This paper also discusses binomial and q -analogs of Equations (0.1) and (0.2). (Received August 17, 2009)