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Ronald E Mickens* (rohrrs@math.gatech.edu), Clark Atlanta University, Physics Department,
Box 172, Atlanta, GA 30314. *Asymptotic Solutions to a Discrete Airy Equation.*

A non-standard finite difference scheme for the Airy equation leads to a linear, second-order difference equation for which the theorems of Poincaré and Perron do not apply if asymptotic representation of the solutions are needed. Using the method of dominant balance, a suggested form for the asymptotic solutions is obtained. This relationship is then used to construct the required asymptotic representations for the two linearly independent solutions. This research was supported in part by grants from DOE and MBRS/SCORE program at Clark Atlanta University. (Received October 04, 2000)