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Asymptotically periodic solutions of a q -integral equation.

Using the definition of periodicity on time scales that are not necessarily additively periodic, given by Adivar, we define the notion of asymptotically periodic functions on the quantum time scale $q^{\mathbb{N}_0}$. We study the existence of an asymptotically periodic solution of a Volterra integral equation on $q^{\mathbb{N}_0}$. In the process, we study the existence of periodic solutions of an associated equation on the time scale $q^{\mathbb{Z}}$. Schauder's fixed point theorem is employed in the analysis. (Received August 18, 2017)