Let $E/\mathbb{Q}$ be an elliptic curve and let $Q \in E(\mathbb{Q})$ be a non-torsion point. We define an \textit{elliptic pseudoprime} for the pair $(E, Q)$ to be a composite integer $n$ such that $E$ has good reduction at all primes dividing $n$ and such that $(n+1-a_n)Q = O$ in $E(\mathbb{Z}/n\mathbb{Z})$. We then define $n$ to be an \textit{elliptic Carmichael number} for $E$ if it is an elliptic pseudoprime for every point in $E(\mathbb{Z}/n\mathbb{Z})$. In this talk I will discuss properties and computations related to elliptic pseudoprimes and Carmichael numbers, including an elliptic Korselt criterion. (Received August 07, 2011)