1023-34-1676   **George R Grover*** (`groverg@mail.montclair.edu`), 1 Normal Avenue, Montclair, NJ 07043, and **Diana M Thomas** (`thomasdia@mail.montclair.edu`), 1 Normal Avenue, Montclair, NJ 07043. *Minimal Periods of Closed Curves in $\mathbb{R}^n$.*

Let $\mathbf{x}(t)$ be a periodic solution with period T of the differential equation $\mathbf{x}'(t) = g(\mathbf{x}(t))$, where $\mathbf{x}(\mathbf{0}) \in X$. Let L be the minimum Lipschitz constant of g. In the case where X is a Banach space, Lasota and Yorke (1971) proved $TL \geq 4$, and, if X is a Hilbert Space, $TL \geq 2\pi$. The Banach space result was improved by Busenberg and Martelli (1986) to $TL \geq 6$, where 6 was found to be sharp in L_1. The question whether the minimal period, TL, equalling 2π characterizes a Hilbert space remained open. We investigate what TL equals in $\mathbb{R}^n$ in non-Euclidean norms and prove in $\mathbb{R}^n$ the minimal period is 2π for any p or weighted p-norm. This result shows that a minimal period of 2π does not characterize a Hilbert space. (Received September 26, 2006)

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