

1077-35-2144

Joshua Mann*, Morehouse College, Physics Department, Atlanta, GA 30314, and **Ronald E. Mickens** (rohrrs@math.gatech.edu), Clark Atlanta University, Physics Department, Atlanta, GA 30314. *New Results for the Leah Cosine Function.*

We report on extensions of our previously reported work [1] on the properties of the Leah-cosine function, Lcn. This function is the solution to the initial-value problem

$$\frac{d^2x}{dt^2} + x^{1/3} = 0, \quad x(0) = 1, \quad \frac{dx(0)}{dt} = 0.$$

The new results include expressions for the first twenty Taylor series coefficients, and both upper and lower bounds for the perimeters of the closed curves in the x - y phase-plane, where $y \equiv dx/dt$.

[1] J. Mann et al., Abstracts of papers presented to the American Mathematical Society, Vol. 32 (#1, Winter 2011), pp. 138. (Received September 21, 2011)