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Sougata Dhar* (dhar@math.niu.edu), 810 Kimberly Dr. Apt 212, DeKalb, IL 60115, and
Qingkai Kong. *Lyapunov-type inequalities for third-order linear differential equations.*

We obtain new Lyapunov-type inequalities for the third-order linear differential equation. Our work provides the sharpest results in the literature. Based on the above, we further establish new Lyapunov-type inequalities for more general third-order linear differential equations. Moreover, by combining these inequalities with the “uniqueness implies existence” theorems by several authors, we establish the uniqueness and hence existence-uniqueness for several classes of boundary value problems for third-order linear equations. (Received May 26, 2015)