999-34-194 **John R. Graef*** (`john-graef@utc.edu`), Department of Mathematics, University of Tennessee at Chattanooga, Chattanooga, TN 37403, and **Bo Yang** (`byang@kennesaw.edu`), Department of Mathematics, Kennesaw State University, Kennesaw, GA 30144. *Some new existence and nonexistence results for positive solutions of third order nonlinear boundary value problems.*

Consider the boundary value problem consisting of the third order nonlinear differential equation

$$u'''(t) = \lambda q(t) f(u), \quad 0 < t < 1, \tag{E}$$

together with the three point boundary conditions

$$u(0) = u'(p) = u''(1) = 0, \tag{B}$$

where $f : [0, \infty) \to [0, \infty)$ and $q : [0, 1] \to [0, \infty)$ are continuous, $\int_0^1 q(t)dt > 0$, $\lambda > 0$ is a parameter, and $p \in (\frac{1}{2}, 1)$ is a constant. The authors obtain sufficient conditions for the existence and nonexistence of positive solutions of (E)–(B). These improve some recent results in the literature by giving better intervals for existence; this will be illustrated by examples. (Received August 23, 2004)

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