The existence of three positive solutions to integral type BVPs for singular second ODEs with one-dimensional p-Laplacian

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ABSTRACT.

This paper is concerned with the integral type boundary value problems of the second order singular differential equations with one-dimensional p-Laplacian. Sufficient conditions to guarantee the existence of at least three positive solutions are established. An example is presented to illustrate the main results. The emphasis is put on the one-dimensional p-Laplacian term $[\rho(t)\Phi(x'(t))]'$ involved with the function ρ, which makes the solutions un-concave. Furthermore, f, g, h and ρ may be singular at $t = 0$ or $t = 1$.

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