

EXISTENCE OF TRIPLE POSITIVE SOLUTIONS  
FOR SECOND ORDER BOUNDARY VALUE  
PROBLEMS WITH ONE-DIMENSIONAL P-LAPLACIAN

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**Abstract:** This paper deals with the existence of triple positive solutions of two classes of quasi-linear multi-point boundary value problem. By using a fixed point theorem, we prove the existence of at least three positive solutions.

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**Key Words:** boundary value problem, positive solution, multi-point, fixed point theorem

## 1. Introduction

In this paper, we prove the existence of triple positive solutions for the boundary value problem

$$(\varphi_p(x'(t)))' + \phi(t)f(t, x(t), x'(t)) = 0, \quad t \in (0, 1), \quad (1.1)$$

subject to one of the following conditions