

UNIQUENESS OF SOLUTIONS IMPLIES EXISTENCE AND UNIQUENESS OF SOLUTIONS OF BOUNDARY VALUE PROBLEMS FOR THIRD ORDER DIFFERENTIAL EQUATIONS

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Abstract

In this paper we are concerned with uniqueness implies uniqueness and uniqueness implies existence questions for solutions of a class of boundary value problems for the third order ordinary differential equation (ODE). First we show uniqueness of solutions of a class of two-point problems implies the uniqueness of solutions of an associated class of three-point problems. Then we establish uniqueness of solutions of the class of two-point problems implies the existence of solutions of the class of two point problems and the associated class of three-point problems.

Key words and phrases: Boundary value problem, ordinary differential equation, solution matching.

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