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APPLIED MATHEMATICS (I)　應用數學(一)

I. Cartesian Tensors
1. Orthonormal Base Vectors
2. Transformation rule of Vectors
3. Dyads, Dyadics, and Tensors
4. Transformation rule of Tensors
5. Quotient Tests
6. Isotropic Tensors

II. Ordinary Differential Equations
1. Initial-Value Problem
2. Existence and Uniqueness Theory
3. Second-Order ODE
4. Linear Systems
5. Boundary-Value Problems
6. Adjoint Operators
7. Green Functions and Modified Green's Function
8. Sturm-Liouville Theory

III. Partial Differential Equation
1. Introduction
2. Classifications
3. Eigenfunction Expansion
4. Green's Function
5. Adjoint Operators
6. Integral Representation
7. Maximum-Minimum Principle