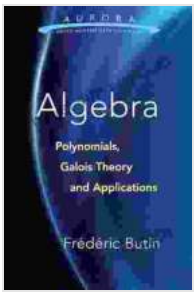
An Introductory Course On Differentiable Manifolds

This book is an introductory course on differentiable manifolds. It provides a comprehensive overview of the subject, from the basics of smooth maps and tangent spaces to more advanced topics such as differential forms and de Rham cohomology. The book is written in a clear and concise style, and it includes numerous examples and exercises to help the reader understand the material.



An Introductory Course on Differentiable Manifolds (Aurora: Dover Modern Math Originals) by Roger M. Wood

4.9 out of 5

Language	: English
File size	: 22790 KB
Text-to-Speech	: Enabled
Screen Reader	: Supported
Enhanced typesetting	: Enabled
Print length	: 368 pages
Lending	: Enabled
X-Ray for textbooks	: Enabled

Table of Contents

Chapter 1: Smooth Maps and Tangent Spaces

In this chapter, we will introduce the basic concepts of smooth maps and tangent spaces. We will first define smooth maps between two manifolds, and then we will show how to construct the tangent space to a manifold at a given point. We will also discuss the relationship between smooth maps and tangent spaces, and we will show how to use tangent spaces to define the derivative of a smooth map.

Chapter 2: Differential Forms

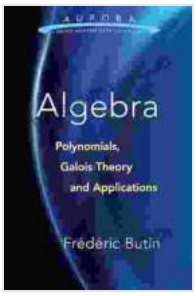
In this chapter, we will introduce the concept of differential forms. Differential forms are a generalization of the idea of a vector field, and they can be used to represent a variety of geometric objects, such as surfaces, volumes, and currents. We will first define differential forms, and then we will show how to use them to define the exterior derivative. We will also discuss the relationship between differential forms and de Rham cohomology, and we will show how to use differential forms to solve a variety of problems in differential geometry.

Chapter 3: De Rham Cohomology

In this chapter, we will introduce the concept of de Rham cohomology. De Rham cohomology is a topological invariant of a manifold, and it can be used to classify manifolds. We will first define de Rham cohomology, and then we will show how to compute it for a variety of manifolds. We will also discuss the relationship between de Rham cohomology and other topological invariants, such as homology and homotopy.

This book provides a comprehensive overview of differentiable manifolds. It is written in a clear and concise style, and it includes numerous examples

and exercises to help the reader understand the material. This book is an excellent resource for students and researchers who are interested in learning about differentiable manifolds.



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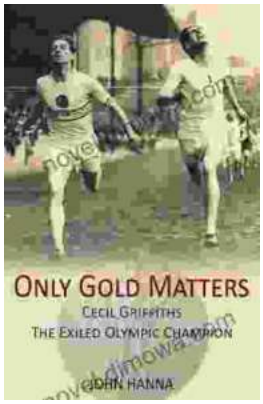

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