

微積分 1

第 1 章 函數與模型

1.5 反函數和對數

第 2 章 極限和導數

2.1 切線和速度問題

2.2 函數的極限

2.3 使用極限法則計算極限

2.4 極限的精確定義

2.5 連續性

2.6 無限極限；水平漸近線

2.7 導數和變化率

2.8 導函數

第 3 章 微分規則

3.1 多項式和指數函數的導數

3.2 乘法與除法的微分公式

3.3 三角函數的導數

3.4 連鎖律

3.5 隱微分

3.6 對數和反三角函數的導數

3.9 相關變化率

3.10 線性逼近和微分式

第 4 章 微分的應用

4.1 最大值和最小值

4.2 中值定理

4.3 導數和函數的圖形的形狀

4.4 不定形和 l'Hospital 法則

4.5 曲線描繪

4.7 最佳化問題

4.9 反導函數

Calculus 1

Chapter 1 Functions and Models

1.5 Inverse functions and Logarithms

Chapter 2 Limits and Derivatives

2.1 The Tangent and Velocity Problems

2.2 The Limits of a Function

2.3 Calculating Limits Using the Limit Laws

2.4 The Precise Definition of a Limit

2.5 Continuity

2.6 Limits at Infinity; Horizontal Asymptotes

2.7 Derivatives and Rates of Change

2.8 The Derivative as a Function

Chapter 3 Differentiation Rules

3.1 Derivatives of Polynomials and Exponential Functions

3.2 The Product and Quotient Rules

3.3 Derivatives of Trigonometric Functions

3.4 The Chain Rule

3.5 Implicit Differentiation

3.6 Derivatives of Logarithmic and Inverse Trigonometric Functions

3.9 Related Rates

3.10 Linear Approximations and Differentials

Chapter 4 Applications of Differentiation

4.1 Maximum and Minimum Values

4.2 The Mean Value Theorem

4.3 What Derivatives Tell Us about the Shape of a Graph

4.4 Indeterminate Forms and l'Hospital's Rule

4.5 Summary of Curve Sketching

4.7 Optimization Problems

4.9 Antiderivatives