

# 数学书单

## 1.基础数学/初等数学：

### 1.数学分析

Principles of Mathematical Analysis (Walter Rudin)

### 2.高等代数：

Linear Algebra with Applications (Steven Leon)

### 3.解析几何：

Calculus with Geometry (George F. Simmons)

### 4.初等函数论(实分析与复分析)：

Real and Complex Analysis (Walter Rudin)

### 5.泛函分析：

Functional Analysis (Walter Rudin)

### 6.抽象代数：

Algebra (Michael Artin)

### 7.组合数学：

Concrete Mathematics (Donald E. Knuth)

Introductory Combinatorics (Richard A. Brualdi)

### 8.计算机程序设计：

Structure and Interpretation of Computer Programs (Gerald J. Sussman)

Elements of Programming (Alexander Stepanov)

### 9.算法和数据结构：

The Art of Computer Programming (Donald E. Knuth)

### 10.逻辑学：

Introduction to Logic (Arving M. Copi)

### 11.范畴论：

Categories for the Working Mathematician (Mac Lane)

### 12.常微分方程：

Ordinary Differential Equations (Arnol'd)

13.偏微分方程：

Lecturers on Partial Differential Equations (O. A. Олейник)

14.物理数学方程：

Physics and Partial Differential Equations (Tatsien Li, Tiehu Qin)

15.随机分析：

Introduction to Stochastic Process (Gregory F. Lawler)

Stochastic Analysis (P. Malliavin)

16.形式语言理论：

An Introduction to Formal Languages and Automata (Peter Linz)

17.微分几何：

Differential Geometry and Its Applications (Hohn Opera)

18.代数几何：

Principles of Algebraic Geometry (P. Griffiths)

19.射影几何：

Algebraic Projective Geometry (J.G. Semple)

20.计算复杂性：

Computational Complexity (Christos H. Papadimitriou)

Complexity Theory (Ingo Wegener)

Thinking in Complexity (Klaus Mainzer)

21.解析数论：

Introduction to Analytic Number Theory (T.M. Apostol)

22.概率论与数理统计：

A First Course in Probability (Sheldon M. Ross)

23.数值分析：

Numerical Analysis (Timothy Sauer)

24.数学建模：

A First Course in Mathematical Modeling (Frank R. Giordano)

25.初等数论：

Elementary Number Theory and Its Applications (Kenneth H. Rosen)

## II.高等数学：

27.凸优化：

Convex Optimization (Stephen Boyd)

28.李群与李代数：

Lie Groups,Lie Algebras,and Their Representations (V.S. Varadarajan)

29.代数 K-理论：

K-Theory (Michael Atiyah)

30.算子 KK-理论：

Elements of KK-Theory (Kjeld Knudsen Jensen)

31.C\*-代数：

An Invitation to C\*- Algebras (William Arveson)

32.交换环论：

Commutative Ring Theory (H. Matsumura)

33.高等函数论 (调和分析, 复流形理论)：

Harmonic Analysis (Elias M. Stein)

Complex Manifolds without Potential Theory (Shiing-Shen Chern)

34.代数 D-模理论：

A Primer of Algebraic D-modules (S.C. Coutinho)

35.量子群理论：

Quantum Groups (Christian Kassel)

36.量子计算：

Principles of Quantum Computation and Information (Giuliano Benenti)

37.同调代数：

Homological Algebra (Henri Cartan)

38.积分方程：

Linear and Nonlinear Integral Equations (Abdul-Majid Wazwaz)

39.解析数论：

Introduction to Analytic Number Theory (Tom M. Apostol)

40.代数数论：

Algebraic Number Theory (S. Lang)

Local fields (J.P. Serre)

41.符号计算与计算机代数：

Modern Computer Algebra (Von Zur Gathen)

The Mathematica Book (Stephen Wolfram)

42.机器推理：

Software Foundations (Benjamin C. Pierce)

Translations from the Philosophical Writings (Gottlob Frege)

Modern Computer Arithmetic (Richard P. Brent)