<<解析数论导论>>

图书基本信息

书名:<<解析数论导论>>

13位ISBN编号:9787510040627

10位ISBN编号:7510040620

出版时间:2012-1

出版时间:世界图书出版公司

作者:阿波斯托尔

版权说明:本站所提供下载的PDF图书仅提供预览和简介,请支持正版图书。

更多资源请访问:http://www.tushu007.com

<<解析数论导论>>

内容概要

《解析数论导论(英文版)》是一部为本科生提供学习数论的基本思想和技巧的教程,重点强调解析数论。

前五章讲述可约性、收敛和算术函数等基本概念。

紧下来的章节讲述序列中素数的狄利克莱定理、高斯和、二次剩余、狄利克莱级数和欧拉积及其在黎曼zeta函数和狄利克莱函数中的应用,并且引进了划分的概念。

书中每章末都收集了大量练习。

前十章,除去第一章,任何具备基本微积分知识的人都可以读懂;最后四章需要对复函数理论(包括复积分和留数积分)一定的了解。

<<解析数论导论>>

书籍目录

historical introduction

chapter 1 the fundamental theorem of arithmetic

- 1.1 introduction
- 1.2 divisibility
- 1.3 greatest common divisor
- 1.4 prime numbers
- 1.5 the fundamental theorem of arithmetic
- 1.6 the series of reciprocals of the primes
- 1.7 the euclidean algorithm
- 1.8 the greatest common divisor of more than two numbers exercises for chapter!

chapter 2 arithmetical functions and dirichlet multiplication

- 2.1 introduction
- 2.2 the mebius function mn)
- 2.3 the euler totient function 0(n)
- 2.4 a relation connecting (0 and it
- 2.5 a product formula for (n)
- 2.6 the dirichlet product of arithmetical functions
- 2.7 dirichlet inverses and the mebius inversion formula
- 2.8 the mangoidt function a(n)
- 2.9 multiplicative functions
- 2.10 multiplicative functions and dirichlet multiplication
- 2.11 the inverse of a completely multiplicative function
- 2.12 liouville's function).(.)
- 2.13 the divisor functions a,(n)
- 2.14 generalized convolutions
- 2.15 formal power series
- 2.16 the bell series of an arithmetical function
- 2.17 bell series and dirichlet multiplication
- 2.18 derivatives of arithmetical functions
- 2.19 the selberg identity
- exercises for chapter 2

chapter 3 averages of arithmetical functions

- 3.1 introduction
- 3.2 the big oh notation. asymptotic equality of functions
- 3.3 euler's summation formula
- 3.4 some elementary asymptotic formulas
- 3.5 the average order old{n}
- 3.6 the average order of the divisor functions a,(n)
- 3.7 the average order of(n)
- 3.8 an application to the distribution of lattice points visible

from the origin

- 3.9 the average order of u(n) and of a(n)
- 3.10 the partial sums or adirichlet product
- 3.11 applications to #(n) and a(n)

<<解析数论导论>>

progressions

3.12 another identity for the partial sums of a dirichlet
product
exercises for chapter 3
chapter 4 some elementary theorems on the distribution of
prime
numbers
4.1 introduction
4.2 chebyshev's functions (x) and ,9(x)
4.3 relations connecting (x) and ri(x)
4.4 some equivalent forms of the prime number theorem
4.5 inequalities for ri(n) and pn
4.6 shapiro's tauberian theorem
4.7 applications of shapiro's theorem
4.8 an asymptotic formula for the partial sums psx (i/p)
4.9 the partial sums of the m6bius function
4.10 brief sketch of an elementary proof of the prime number
theorem
4.11 selberg's asymptotic formula
exercises for chapter 4 lot
chapter 5 congruences
5.1 definition and basic properties of congruences
5.2 residue classes and complete residue systems
5.3 linear congruences
5.4 reduced residue systems and the euler-fermat theorem il
5.5 polynomial congruences modulo p. lagrange's theorem
5.6 applications of lagrange's theorem
5.7 simultaneous linear congruences, the chinese remainder theorem
1!
5.8 applications of the chinese remainder theorem il
• •
5.9 polynomial congruences with prime power moduli
5.10 the principle of cross-classification
5.11 a decomposition property of reduced residue systems
exercises for chapter 5
chapter 6 finite abelian groups and their characters
6.1 definitions
6.2 examples of groups and subgroups
6.3 elementary properties of groups
6.4 construction of subgroups
6.5 characters of finite abelian groups
6.6 the character group
6.7 the orthogonality relations for characters
6.8 dirichlet characters
6.9 sums involving dirichlet characters
6.10 the nonvanishing of I(i, x) for real nonprincipal x I#I
exercises for chapter 6 chapter 7 dirichlet's theorem on primes in arithmetic

<<解析数论导论>>

	7.1 introduction	
	7.2 dirichlet's theorem for primes of the form 4n - i and 4n + $$	
i		
	7.3 the plan of the proof of dirichlet's theorem	
	7.4 proof of lemma 7.4	
	7.5 proof of lemma 7.5	
	7.6 proof of lemma 7.6	
	7.7 proof of lemma 7.8	
	7.8 proof of lemma 7.7	
	7.9 distribution of primes in arithmetic progressions	
۔ا۔	exercises for chapter 7	
chapter 8 periodic arithmetical functions and gauss sums		
	8.1 functions periodic modulo k	
c	8.2 existence of finite fourier series for periodic arithmetical	
IU	nctions	
	8.3 ramanujan's sum and generalizations	
	8.4 multiplicative properties of the sums sk(n)	
	8.5 gauss sums associated with dirichlet characters	
	8.6 dirichlet characters with nonvanishing gauss sums	
	8.7 induced moduli and primitive characters	
	8.8 further properties of induced moduli 8.9 the conductor of a character	
	8.10 primitive characters and separable gauss sums	
	8.11 the finite fourier series of the dirichlet characters	
۸h	8.12 p61ya's inequality for the partial sums of primitive naracters	
UI		
۸h	exercises for chapter 8 hapter 9 quadratic residues and the quadratic reciprocity	
u Ia		
ıa	w 9.1 quadratic residues	
	9.2 legendre's symbol and its properties	
	9.3 evaluation of (- lip) and (2]p)	
	9.4 gauss' lemma	
	9.5 the quadratic reciprocity law	
	9.6 applications of the reciprocity law	
	9.7 the jacobi symbol	
	9.8 applications to diophantine equations	
	9.9 gauss sums and the quadratic reciprocity law	
	9.10 the reciprocity law for quadratic gauss sums	
	9.11 another proof of the quadratic reciprocity law	
	exercises for chapter 9	
ch	napter 10 primitive roots	
UI	·	
	10.1 the exponent ora number mod m. primitive roots	
	10.2 primitive roots and reduced residue systems	
	10.3 the nonexistence of primitive roots mod 2' for a] 3	
	10.4 the existence of primitive roots mod p for odd primes p	
	10.5 primitive roots and quadratic residues	

<<解析数论导论>>

- 10.6 the existence of primitive roots mod p
- 10.7 the existence of primitive roots mod 2p
- 10.8 the nonexistence of primitive roots in the remaining cases
 - 10.9 the number of primitive roots mod m
 - 10.10 the index calculus
 - 10.11 primitive roots and dirichlet characters
 - 10.12 real-valued dirichlet characters mod p
 - 10.13 primitive dirichlet characters mod p

exercises for chapter 10

chapter 11 dirichlet series and euler products

- 11.1 introduction
- 11.2 the half-plane of absolute convergence of a dirichlet series
 - 11.3 the function defined by a dirichlet series
 - 11.4 multiplication of dirichlet series
 - 11.5 euler products
 - 11.6 the half-plane of convergence of a dirichlet series
 - 11.7 analytic properties of dirichlet series
 - 11.8 dirichlet series with nonnegative coefficients
- 11.9 dirichlet series expressed as exponentials of dirichlet series
 - 11.10 mean value formulas for dirichlet series
- 11.11 an integral formula for the coefficients of a dirichlet series
- 11.12 an integral formula for the partial sums ora dirichlet series

exercises for chapter ii

chapter 12 the functions (s) and I(s, x)

- 12.1 introduction
- 12.2 properties of the gamma function
- 12.3 Integral representation for the hurwitz zeta function
- 12.4 a contour integral representation for the hurwitz zeta function
 - 12.5 the analytic continuation of the hurwitz zeta function
 - 12.6 analytic continuation of (s) and I(s, x)
 - 12.7 hurwitz's formula for (s, a)
 - 12.8 the functional equation for the riemann zeta function
 - 12.9 a functional equation for the hurwitz zeta function
 - 12.10 the functional equation for I-functions
 - 12.11 evaluation of (-n, a)
- 12.12 properties of bernoulli numbers and bernoulli polynomials
 - 12.13 formulas for I(0, z)
 - 12.14 approximation of (s, a) by finite sums
 - 12.15 inequalities for i (s, a)
 - 12.16 inequalities for i (s)I and iI(s, x)I

<<解析数论导论>>

exercises for chapter 12
chapter 13 analytic proof of the prime number theorem
13.1 theplan of the proof
13.2 lemmas
13.3 a contour integral representation for $(x)/x^2$
13.4 upper bounds for (s) and i '(s)[near the line a =1
13.5 the nonvanishing of (s) on the line a =1
13.6 inequalities for 1// (s) and '(s) (s)
13.7 completion of the proof of the prime number theorem
13.8 zero-free regions for (s)
13.9 the riemann hypothesis
13.10 application to the divisor function
13.11 application to euler's totient
13.12 extension of pe1ya's inequality for character sums
exercises for chapter 13
chapter 14 partitions
14.1 introduction
14.2 geometric representation of partitions
14.3 generating functions for partitions
14.4 euler's pentagonal-number theorem
14.5 combinatorial proof of euler's pentagonal-number
theorem
14.6 euler's recursion formula for p(n)
14.7 an upper bound for p(n)
14.8 jacobi's triple product identity
14.9 consequences of jacobi's identity
14.10 logarithmic differentiation of generating functions
14.11 the partition identities of ramanujan
exercises for chapter 14
bibliography
index of special symbols
index

<<解析数论导论>>

版权说明

本站所提供下载的PDF图书仅提供预览和简介,请支持正版图书。

更多资源请访问:http://www.tushu007.com