

# En ungefärlig kapitelöversättning från från Burton till Strayer

## Kapitelöversättning

Observera att detta endast är en ungefärlig översättning. Allt material i Burton finns ej med i Strayer. Dock borde det inte vara några problem för er som går på föreläsningarna att endast ha tillgång till Strayer.

Burton	Strayer
1.1	Appendix A
2.1–2.3	1.1–1.4
2.4	6.1
3.1	1.5
3.2	Delar finns i 1.2
4.2–4.4	2.1–2.3
5.3, 5.4	2.4, 2.5
6.1, 6.2	3.1, 3.3, 3.4, 3.6
7.2–7.4	2.6, 3.2
7.5	8.2
8.1–8.4	5.1–5.4
9.1–9.4	4.1–4.3
10.2, 10.3	Delar finns i 1.2 och 3.5
11.1, 11.2	6.3, 6.4
12.2, 12.3	6.5

## Innehållsförteckningen i Burton

- 1 Some Preliminary Considerations**
  - 1.1 Mathematical Induction
  - 1.2 The Binomial Theorem
  - 1.3 Early Number Theory
- 2 Divisibility Theory in the Integers**
  - 2.1 The Division Algorithm
  - 2.2 The Greatest Common Divisor
  - 2.3 The Euclidean Algorithm
  - 2.4 The Diophantine Equation  $ax+by = c$
- 3 Primes and Their Distribution**
  - 3.1 The Fundamental Theorem of Arithmetic
  - 3.2 The Sieve of Eratosthenes
  - 3.3 The Goldbach Conjecture
- 4 The Theory of Congruences**
  - 4.1 Carl Friedrich Gauss
  - 4.2 Basic Properties of Congruence
  - 4.3 Special Divisibility Tests
  - 4.4 Linear Congruences
- 5 Fermat's Theorem**
  - 5.1 Pierre de Fermat
  - 5.2 Fermat's Factorization Method
  - 5.3 The Little Theorem
  - 5.4 Wilson's Theorem
- 6 Number-Theoretic Functions**
  - 6.1 The Functions  $\tau$  and  $\sigma$
  - 6.2 The Möbius Inversion Formula
  - 6.3 The Greatest Integer Function
  - 6.4 An Application to the Calendar
- 7 Euler's Generalization of Fermat's Theorem**
  - 7.1 Leonhard Euler
  - 7.2 Euler's Phi-Function
  - 7.3 Euler's Theorem
  - 7.4 Some Properties of the Phi-Function
  - 7.5 An Application to Cryptography
- 8 Primitive Roots and Indices**
  - 8.1 The Order of an Integer Modulo  $n$
  - 8.2 Primitive Roots for Primes
  - 8.3 Composite Numbers Having Primitive Roots
  - 8.4 The Theory of Indices
- 9 The Quadratic Reciprocity Law**
  - 9.1 Euler's Criterion
  - 9.2 The Legendre Symbol and Its Properties
  - 9.3 Quadratic Reciprocity
  - 9.4 Quadratic Congruences with Composite Moduli
- 10 Perfect Numbers**
  - 10.1 Marin Mersenne
  - 10.2 The Search for Perfect Numbers
  - 10.3 Mersenne Primes
  - 10.4 Fermat Numbers
- 11 The Fermat Conjecture**
  - 11.1 Pythagorean Triples
  - 11.2 The Famous "Last Theorem"
- 12 Representation of Integers as Sums of Squares**
  - 12.1 Joseph Louis Lagrange
  - 12.2 Sums of Two Squares
  - 12.3 Sums of More than Two Squares
- 13 Fibonacci Numbers**
  - 13.1 The Fibonacci Sequence
  - 13.2 Certain Identities Involving Fibonacci Numbers
- 14 Continued Fractions**
  - 14.1 Srinivasa Ramanujan
  - 14.2 Finite Continued Fractions
  - 14.3 Infinite Continued Fractions
  - 14.4 Pell's Equation
- 15 Some Twentieth-Century Developments**
  - 15.1 Hardy, Dickson, and Erdős
  - 15.2 Primality Testing and Factorization
  - 15.3 An Application to Factoring: Remote Coin Flipping
  - 15.4 The Prime Number Theorem