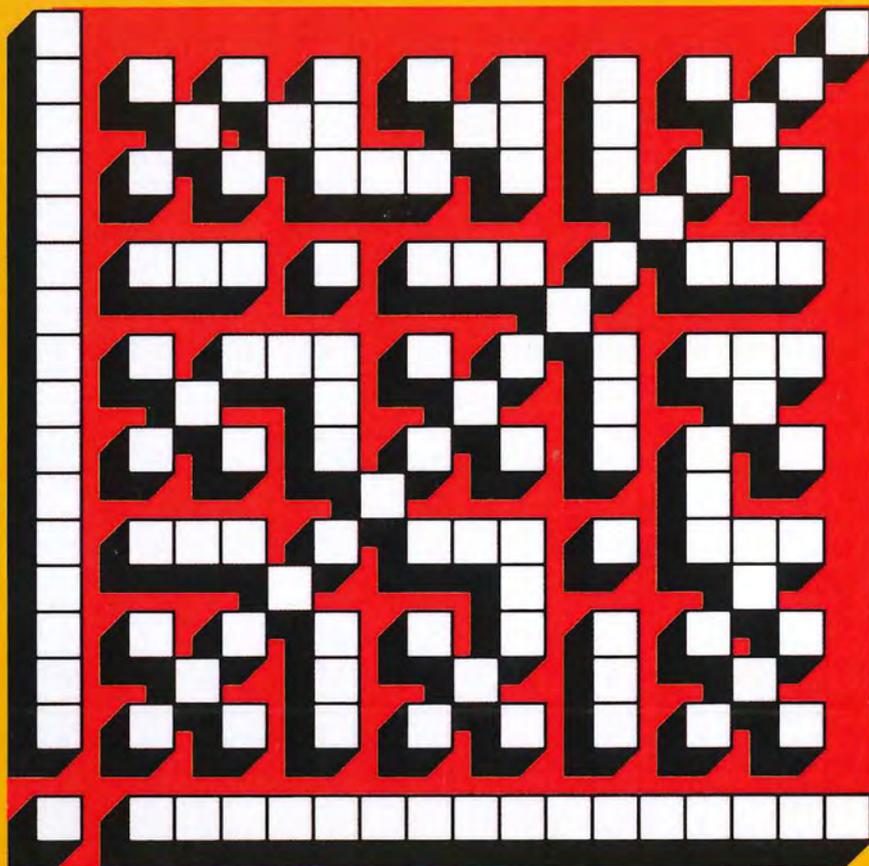


Undergraduate Texts in Mathematics

Tom M. Apostol

**Introduction
to Analytic
Number Theory**



 Springer

Book recommendation:

Introduction to Analytic Number Theory

by Tom M. Apostol

When I was a 3rd year student I was reading a proof which claimed that there are infinitely many primes ending with 007 (popularly called James Bond primes). In fact, the proof was using much more: namely that, for *any* integers b, c without common factors, there are infinitely many primes which are congruent to b modulo c . That this is true was not obvious to me, so I tried if I could prove it. I succeeded with a few numbers like $b=3, c=4$, but unfortunately I could not prove the general case. Quite embarrassed about my lack of ability I asked a professor how to prove such a statement. His reply made me feel better: "Oh, this is a famous and non-obvious theorem of Dirichlet". I asked him where I could read about this theorem and his recommendation somehow changed my very naive view on mathematics:

He recommended that I read "Introduction to Analytic Number Theory" by Tom Apostol. The book starts with the very basic properties of the integers and using just the right balance between theory, proofs and examples he manages to prove very deep theorems like the prime number theorem, developing harmonic analysis on finite abelian groups, and much more. And of course proving Dirichlet's theorem. He even makes it look easy (or at least not too difficult for a 3rd year student).

Contrary to other books I was reading at the time, this book never tries to be as general as possible, but rather highlights the main ideas and methods. I read it in a week or two, and naively thought I understood most of it. I have later returned to the book on many occasions, realizing over and over again, that there were beautiful and delicate points that I never fully appreciated at the time.

The author - Tom Apostol - died earlier this year at the age of 92, but his book still feels young and fresh every time I look at it.

Morten S. Risager

