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	Descrizione fisica	1 online resource (462 pages)
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		Number Theory
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	Nota di contenuto	Chapter 1. Number theory -- Chapter 2. Construction of numbers -- Chapter 3. Linear algebra -- Chapter 4. Groups -- Chapter 5. Representations of finite groups -- Chapter 6. Rings -- Chapter 7. Field extensions -- Chapter 8. Galois theory -- Chapter 9. Modules -- Chapter 10. Appendix.
	Sommario/riassunto	This book is a concise, self-contained treatise on abstract algebra with an introduction to number theory, where students normally encounter rigorous mathematics for the first time. The authors build up things slowly, by explaining the importance of proofs. Number theory with its focus on prime numbers is then bridged via complex numbers and linear algebra, to the standard concepts of a course in abstract algebra, namely groups, representations, rings, and modules. The interplay between these notions becomes evident in the various topics studied. Galois theory connects field extensions with automorphism groups. The group algebra ties group representations with modules over rings, also at the level of induced representations. Quadratic reciprocity occurs in the study of Fourier analysis over finite fields. Jordan decomposition of matrices is obtained by decomposition of modules

over PID's of complex polynomials. This latter example is just one of many stunning generalizations of the fundamental theorem of arithmetic, which in its various guises penetrates abstract algebra and figures multiple times in the extensive final chapter on modules.