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Approach"; "Problem Set for Section 5.1"; "5.2 Minkowski M-Sets";
 "Problem Set for Section 5.2"; "5.3 Minkowski's Fundamental
 Theorem"; "Problem Set for Section 5.3"; "5.4 (Optional) Minkowski's
 Theorem in n Dimensions"; "References"; "6 Applications of
 Minkowski's Theorems"; "6.1 Approximating Real Numbers"
 "6.2 Minkowski's First Theorem"; "Problem Set for Section 6.2"; "6.3
 Minkowski's Second Theorem"; "Problem for Section 6.3"; "6.4
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 "Reading Assignment for Chapter 6"; "References"; "7 Linear
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 "Problem Set for Section 7.1"; "7.2 The General Lattice"; "7.3
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 "7.4 Visible Points"
 "8 Geometric Interpretations of Quadratic Forms"; "8.1 Quadratic
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 the Minima of Quadratic Forms in More Than Two Variables"; "8.5
 Approximating by Rational Numbers"; "8.6 Sums of Four Squares";
 "References"; "9 A New Principle in the Geometry of Numbers"; "9.1
 Blichfeldt's Theorem"; "9.2 Proof of Blichfeldt's Theorem"; "9.3 A
 Generalization of Blichfeldt's Theorem"; "9.4 A Return to Minkowski's
 Theorem"
 "9.5 Applications of Blichfeldt's Theorem"

Sommario/riassunto

The Geometry of Numbers presents a self-contained introduction to
 the geometry of numbers, beginning with easily understood questions
 about lattice-points on lines, circles, and inside simple polygons in the
 plane. Little mathematical expertise is required beyond an acquaintance
 with those objects and with some basic results in geometry. The reader
 moves gradually to theorems of Minkowski and others who succeeded
 him. On the way, he or she will see how this powerful approach gives
 improved approximations to irrational numbers by rationals, simplifies
 arguments on ways of representing integers as sums of squares, and
 provides a natural tool for attacking problems involving dense packings
 of spheres. An appendix by Peter Lax gives a lovely geometric proof of
 the fact that the Gaussian integers form a Euclidean domain,
 characterizing the Gaussian primes, and proving that unique
 factorization holds there. In the process, he provides yet another
 glimpse into the power of a geometric approach to number theoretic
 problems.
