



Binary Quadratic Forms: Classical Theory and Modern Computations (Paperback)

By Duncan A. Buell

Springer-Verlag New York Inc., United States, 2012. Paperback. Condition: New. Language: English . Brand New Book ***** Print on Demand *****.The first coherent exposition of the theory of binary quadratic forms was given by Gauss in the Disquisitiones Arithmeticae. During the nineteenth century, as the theory of ideals and the rudiments of algebraic number theory were developed, it became clear that this theory of binary quadratic forms, so elementary and computationally explicit, was indeed just a special case of a much more elegant and abstract theory which, unfortunately, is not computationally explicit. In recent years the original theory has been laid aside. Gauss's proofs, which involved brute force computations that can be done in what is essentially a two-dimensional vector space, have been dropped in favor of n-dimensional arguments which prove the general theorems of algebraic number theory. In consequence, this elegant, yet pleasantly simple, theory has been neglected even as some of its results have become extremely useful in certain computations. I find this neglect unfortunate, because binary quadratic forms have two distinct attractions. First, the subject involves explicit computation and many of the computer programs can be quite simple. The use of..



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