

# Hilbert's Tenth Problem

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An account of results extending Hilbert's Tenth Problem to integrally closed subrings of global fields. In the late sixties Matiyasevich, building on the work of Davis, Putnam and Robinson, showed that there was no algorithm to determine whether a polynomial equation in several variables and with integer coefficients has integer solutions. Hilbert gave finding such an algorithm as problem number ten on a list he presented at an international congress of mathematicians in 1900. Thus the problem, which has become known as Hilbert's Tenth Problem, was shown to be unsolvable. This book presents an account of results extending Hilbert's Tenth Problem to integrally closed subrings of global fields including, in the function field case, the fields themselves. While written from the point of view of Algebraic Number Theory, the book includes chapters on Mazur's conjectures on topology of rational points and Poonen's elliptic curve method for constructing a Diophantine model of rational integers over a 'very large' subring of the field of rational numbers. EAN/ISBN : 9780511254710 Publisher(s): Cambridge University Press Format: ePub/PDF Author(s): Shlapentokh, Alexandra

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