This book presents in a unified and concrete way the beautiful and deep mathematics – both theoretical and computational – on which the explicit solution of an elliptic Diophantine equation is based. It collects numerous results and methods that are scattered in the literature. Some results are hidden behind a number of routines in software packages, like Magma and Maple; professional mathematicians very often use these routines just as a black-box, having little idea about the mathematical treasure behind them. Almost 20 years have passed since the first publications on the explicit solution of elliptic Diophantine equations with the use of elliptic logarithms. The "art" of solving this type of equation has now reached its full maturity. The author is one of the main persons that contributed to the development of this art.

The monograph presents a well-balanced combination of

- a variety of theoretical tools (from Diophantine geometry, algebraic number theory, theory of linear forms in logarithms of various forms – real/complex and *p*-adic elliptic – and classical complex analysis),
- clever computational methods and techniques (LLL algorithm and de Weger's reduction technique, AGM algorithm, Zagier's technique for computing elliptic integrals),
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A result is the solution in practice of a large general class of Diophantine equations.

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ISBN 978-3-11-028091-3
ISSN 2195-5557

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Nikos Tzanakis
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