

Diophantine equations

- Public key cryptography
- Basic features of diophantine equations, examples
- Legendre's theorem
- Local-global principle and its failure, Reichard's equation
- Euler's lemma and proof of Fermat's conjecture for $n = 3$
- Basic notions of algebraic geometry, rational points
- Rational points in dimensions 1 and 2: conics, elliptic curves, quadric, cubic and quartic surfaces