Fundamental Theorem of Arithmetic - Platonic Realms This workshop will concentrate on the aspects of the interplay between algebraic K-theory, arithmetic and algebraic geometry. Particular emphasis will be placed on K-theory, Arithmetic and Geometry - Seminar, Moscow University. They occur prominently in the arithmetic of elliptic curves and, more recently, moduli spaces and the constructions of quantum field theory. K-Theory, Arithmetic and Geometry - Seminar, Moscow University. They occur prominently in the arithmetic of elliptic curves and, more recently, moduli spaces and the constructions of quantum field theory. K-Theory, Arithmetic and Geometry - Seminar, Moscow University.

The fundamental theorem of arithmetic is a statement in number theory that every integer greater than 1 either is prime itself or is the product of a unique combination of prime numbers. The fundamental theorem of arithmetic was first proved by Carl Friedrich Gauss in 1801. It states that any integer greater than 1 can be factored into prime numbers in exactly one way. This theorem is also called the unique factorization theorem. For example, the number 60 can be factored into prime numbers as 2 × 2 × 3 × 5. The Fundamental Theorem of Arithmetic (FTA), also called the unique factorization theorem or the prime factorization theorem, states that every integer greater than 1 either is a prime number itself or is the product of a unique combination of prime numbers. The uniqueness of this factorization is guaranteed by the Fundamental Theorem of Arithmetic. This theorem is fundamental to the structure of the integers and is used in many branches of mathematics, including number theory and algebra.

The Fundamental Theorem of Arithmetic shows that the integers form a unique factorization domain. We could alternatively state the theorem as: given the set of positive integers \( \mathbb{Z}^+ \), every positive integer can be expressed as the product of prime numbers and that, moreover, this representation is unique. The Fundamental Theorem of Arithmetic - Wikipedia.