

## A Proof for Goldbach's Conjecture

**Authors :** Hashem Sazegar

**Abstract :** In 1937, Vinograd of Russian Mathematician proved that each odd large number can be shown by three primes. In 1973, Chen Jingrun proved that each odd number can be shown by one prime plus a number that has maximum two primes. In this article, we state one proof for Goldbach's conjecture. Introduction: Bertrand's postulate state for every positive integer  $n$ , there is always at least one prime  $p$ , such that  $n < p < 2n$ . This was first proved by Chebyshev in 1850, which is why postulate is also called the Bertrand-Chebyshev theorem. Legendre's conjecture states that there is a prime between  $n^2$  and  $(n+1)^2$  for every positive integer  $n$ , which is one of the four Landau's problems. The rest of these four basic problems are; (i) Twin prime conjecture: There are infinitely many primes  $p$  such that  $p+2$  is a prime. (ii) Goldbach's conjecture: Every even integer  $n > 2$  can be written as the sum of two primes. (iii) Are there infinitely many primes  $p$  such that  $p-1$  is a perfect square? Problems (i), (ii), and (iii) are open till date.

**Keywords :** Bertrand-Chebyshev theorem, Landau's problems, twin prime, Legendre's conjecture, Oppermann's conjecture

**Conference Title :** ICAMCS 2019 : International Conference on Applied Mathematics and Computer Sciences

**Conference Location :** Amsterdam, Netherlands

**Conference Dates :** May 14-15, 2019