

NUMBER THEORY & COMBINATORICS SEMINAR

Speaker: Nathan Ng
Date: 2007 Oct 26
Time: 12:00 – 12:50 pm
Room: C610
Title: Chebyshev's Bias, Galois groups, and L-functions

Abstract:

Chebyshev observed the strange phenomenon that there appear to be more primes congruent to three modulo four than to one modulo four. This is counterintuitive since one expects that there are an equal number of primes congruent to three modulo four than to one modulo four. In this talk, I will explain this phenomenon known as “Chebyshev’s bias” and I will discuss generalizations. For example, consider the polynomial x^3-x-1 . If we consider this polynomial modulo p a prime, this polynomial is either irreducible, splits into a linear factor and a quadratic factor, or splits into three linear factors. I will explain which of these cases occurs the most frequently and I will explain why the “bias” arises.