Michigan Math Club

Thursday at 4pm in the Nesbitt Room
Free Pizza and Pop

A modular forms approach to quadratic forms

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Abstract for 21 November

Modular forms are objects of central importance in modern number theory, though you certainly wouldn't know it from looking at their definition. (If you don't believe me, try looking up the definition on Wikipedia.) In this talk we'll introduce modular forms and explain why they have proven so crucial in studying quadratic forms (homogenous polynomials of degree two). We'll show how Jacobi, in 1834, used modular forms to count the number of ways that a positive integer can be written as a sum of four squares, and will conclude by discussing recent work of Bhargava and Hanke on quadratic forms representing all positive integers.