



MSRI/Evans Talk

MONDAY, FEBRUARY 14, 2011

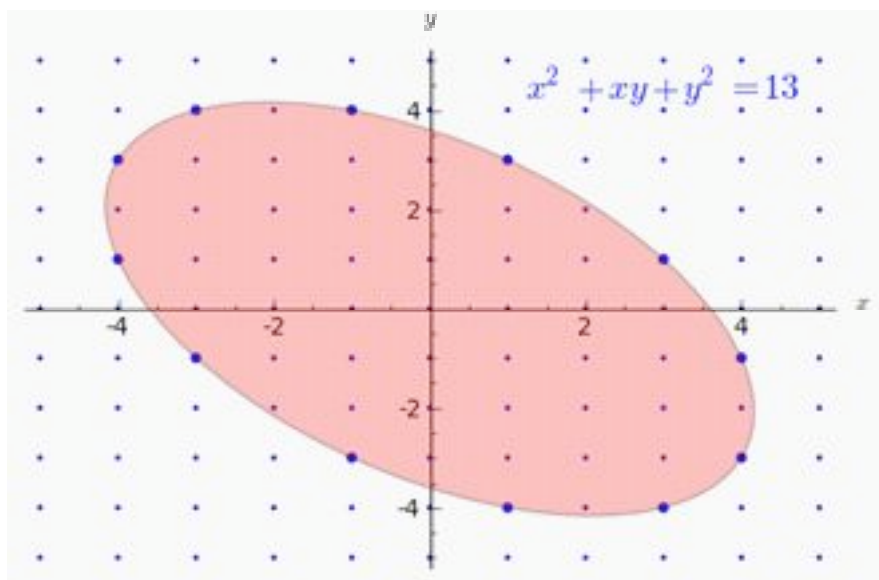
4:10PM; 60 EVANS HALL

UNIVERSITY OF CALIFORNIA, BERKELEY

“THE ARITHMETIC OF QUADRATIC FORMS”

Jon Hanke (University of Georgia)

Quadratic forms with integer coefficients are among the oldest objects in mathematics and lie at the crossroads between geometry and arithmetic. They have been studied by mathematicians for thousands of years, but starting with the work of Gauss and Legendre in the 1700s, new perspectives and techniques have been rapidly increasing our understanding of the answers to classical questions like “What numbers can be written as a sum of n squares?”. We now know that there are deep connections between these questions and many other



interesting objects in mathematics (e.g. modular forms, elliptic curves, abelian varieties, certain zeros of twists of the Riemann zeta function). This talk will describe some of these ideas and techniques, explain what questions they can be used to solve, and list some interesting problems that are still unresolved.

**Refreshments at a nearby establishment immediately following the talk!
Graduate students and Postdoctoral Fellows are particularly welcome.**

<http://www.msri.org>