

**Undergraduate Math Club
Fall 2006
2nd floor Nesbitt Common Room
October 5, 4:10-5:00pm
(free pizza and pop, as always)**

A One Sentence Proof

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Abstract

In 1990, simplifying work of Heath-Brown, D. Zagier published a beautiful one-sentence proof of the following classic result:

Theorem: Every prime which is one more than a multiple of four can be expressed as the sum of two squares.

In this talk, we will explore Zagier's proof, not only by trying to understand how the proof works, but also (perhaps more importantly) trying to recreate the process of the discovery of the proof.

If time permits, I will also present Dedekind's proof of the above theorem, which may be considered one of the first successes of Algebraic Number Theory.