Pell’s Equation I  
Mentee: Chloe Chvatal  
Mentor: Elisa Bellah

Abstract: Three fundamental questions we may ask about any Diophantine equation are:

(1) Does an integer solution exist?

(2) If so, how many?

(3) Can we find them explicitly?

This talk introduces the notion of Diophantine equations and grapples more specifically with Pell’s equation, given by $x^2 - dy^2 = 1$. We will define and reduce Pell’s equation and then answer question (1), proving that there is indeed a solution to this special Diophantine equation.

Prerequisites: None

References:
