Department of Mathematics and Statistics Colloquium

Equations and Symmetry

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Abstract: Methods for solving quadratic equations were known to the Babylonians around 2000 BCE. The first great breakthrough in Renaissance mathematics was the discovery, in early 16th century Italy, of methods for solving cubic and quartic equations. Finding a method for solving quintic equations became a major focus of algebra for the next 250 years.

In 1770, Lagrange studied the solutions of the cubic and quartic in hopes of finding such a method. In doing so, he became the first to realize the role of symmetry in solving polynomial equations, and laid the groundwork for the discoveries of Ruffini, Abel and Galois.

We will explore Lagrange's ideas and present his version of the solutions of cubics and quartics. Most of this talk will be accessible to anyone familiar with high-school algebra.

Monday, October 7 at 3:45 in Roop 103

refreshments at 3:30