

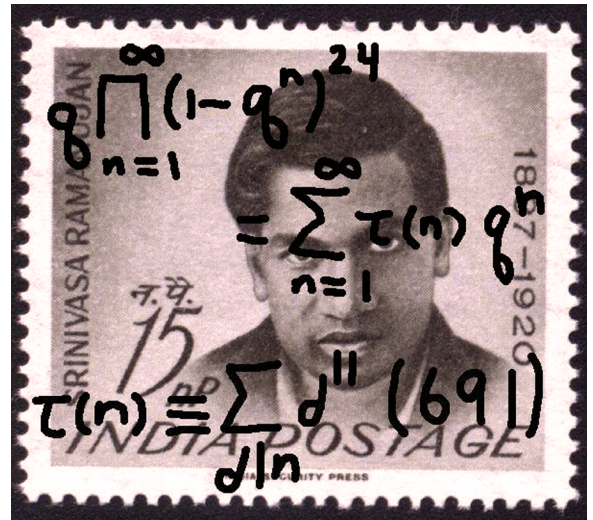
# THE EVANS LECTURES

[www.math.cornell.edu/~oliver/](http://www.math.cornell.edu/~oliver/)

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## Lecture I: The Saga of 691

*Beginning with work of Euler, L-functions — like the Riemann zeta function and its cousins the Dirichlet L-series — have been objects of central interest in number theory. In addition to their analytic importance (e.g., the Riemann hypothesis) certain values of these functions are either known or expected to have algebraic significance. Euler knew that the value of the Riemann zeta function at non-positive integers is a rational number. Do these rational numbers mean anything? Dirichlet proved a “class number formula” relating the class numbers of binary quadratic forms to a value of his L-series for a quadratic character, later generalized in Dedekind’s class number formula for number fields. As the family of L-functions has grown (now including L-functions for modular forms and algebraic varieties) so has the number of such formulas, most conjectural, beginning with the celebrated Birch-Swinnerton-Dyer conjecture for the L-function of an elliptic curve. In these talks, I will give an introduction to such formulas and an overview of one circle of ideas that continues to yield new results toward such formulas. I will begin with some simple cases related to the Riemann zeta function and end with some new results for the Birch-Swinnerton-Dyer formula.*



**Lecture II: Special Value Formulas** — Friday, October 16 @ 3:30 PM in 406 Malott Hall

Thursday, October 15, 2009  
at 4:25 PM in 406 Malott Hall

Refreshments will be served at 3:55 PM in the Mathematics Department lounge (532 Malott Hall).