1067-11-1779   **Benjamin L Weiss*** (`blweiss@umich.edu`), Department of Mathematics, 530 Church St., Ann Arbor, MI 48109. *The classification of curves $G(X) = H(Y)$ with infinitely many rational points.* Preliminary report.

The goal of this talk is to classify all pairs of polynomials (G, H) over a number field K such that $G(X) = H(Y)$ has infinitely many solutions in K^2. By an application of Faltings' Theorem, this is equivalent to classifying all such curves with an absolutely irreducible factor of genus 0 or 1. This talk will discuss the main techniques used towards achieving this goal: the Riemann-Hurwitz equation and combinatorics of possible ramification, Riemann's existence theorem to count the number of polynomials with a given ramification structure, and time permitting applications of a group theoretic result of Fried which extends the results from irreducible curves to reducible curves. This talk is an outline of the author's thesis. (Received September 22, 2010)