The rational points on a recalcitrant genus 12 curve.

We use the method of Chabauty to determine exactly the set of rational points on the genus 12 curve

\[ w^7 = \frac{(v^3 - 2v^2 - v + 1)}{(v^3 - v^2 - 2v + 1)}. \]

This computation allowed us to show that the images of 7-adic representations of elliptic curves over \( \mathbb{Q} \) with a rational subgroup of order 7 are always “as large as possible”. The quest for the exact set of rational points took a circuitous route with some interesting twists and turns, and was helped by Bjorn Poonen, Jennifer Balakrishnan, Kiran Kedlaya, Michael Rubinstein, Andrew Sutherland, and Joseph Wetherell. (Received September 15, 2011)