1067-11-708   **Ralph Greenberg**, **Karl Rubin** and **Alice Silverberg*** (`asilverb@uci.edu`). *Finding the rational points on a certain genus 12 curve.*

We study a certain genus 12 curve defined over the rational numbers. The determination of its rational points has applications to the sizes of images of 7-adic representations of elliptic curves over the rationals that have a rational subgroup of order 7. We use work of Poonen and Schaefer along with Stoll's version of the method of Chabauty to show that the set of rational points has size 6 or 12. The curve has 6 "obvious" rational points. It would be interesting to determine whether the 6 potential additional rational points really exist. (Received September 13, 2010)