1125-11-951   **Cassie Williams*** (`willi5cl@jmu.edu`), James Madison University, Harrisonburg, VA. *Numerical secondary terms for a conjecture of Cohen and Lenstra.* Preliminary report.

In 1984, Cohen and Lenstra published their classic paper describing a heuristic to explain the observed frequency with which finite abelian groups occur as the class group of a quadratic number field and applied their theoretical framework to make several conjectures about such class groups. Thirty years of improvements in computing and algorithms have made it easy to obtain large data sets against which to test the Cohen-Lenstra conjectures, and discrepancies between their asymptotic predictions and reality have been noted by several authors. Analytic approaches to determining secondary terms only work for some of the conjectures, and so we instead turn to a numerical approach. We used Sage to perform a numerical investigation of the discrepancy between one of the Cohen-Lenstra conjectures for real quadratic fields and the actual data. We will share our results, including numerical secondary terms for various small primes, the error in our new estimates, and some interesting patterns. (This is joint work with undergraduate research student Codie Lewis.) (Received September 16, 2016)