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J. Brian Conrey*, 600 East Brokaw Rd., San Jose, CA 95112, and **Mark Holmstrom**. *Smooth values of quadratic polynomials*. Preliminary report.

A number is z -smooth if all of its prime factors are at most z .

It turns out that for any $a \neq 0$ and any z the set of z -smooth numbers of the form $q^2 + a$ is a finite set!

We have found an algorithm which quickly finds, for any z and any $a \neq 0$, almost all of the set of z -smooth values of $q^2 + a$.

We have compiled the sets resulting from our algorithm for $z = 500$ and $1 \leq |a| \leq 25$. These sets are large, usually around 10 to 20 thousand. There is a lot of data to parse here and inspecting it leads to many questions and conjectures. For example, it appears that for each z and a , the set of the logarithms of the numbers in the set are normally distributed. If so, what are the mean and the standard deviation?

There are many open questions that arise about the sizes of these sets, about the maximal number in each set, and about a surprising divisibility property of the numbers in the sets. (Received September 25, 2017)