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Rebecca M. Steiner* (rsteiner@gc.cuny.edu). *The Art of Galois Theory in Computable Field Theory.*

Galois theory has a way of taking existential-type questions and turning them into questions which can be answered by checking only finitely many things. As a familiar example, to determine whether a polynomial $f(X)$ in $F[X]$ can be solved by radicals, instead of looking through the field F for elements x expressible by radicals for which $f(x)=0$, we only need to check that a particular phenomenon happens for each divisor of the size of the Galois group of $f(X)$ over the rationals. Here we present new examples of how Galois theory assists us in proving computability-theoretic results. (Received February 13, 2011)