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William DeMeo* (williamdemeo@gmail.com). *On the Complexity of the Existence of Difference Terms in Idempotent Locally Finite Varieties.*

We give a positive answer to the following practical question: Given a finite idempotent algebra \mathbf{A} , can we efficiently decide whether the variety generated by \mathbf{A} has a difference term? It is well known that a locally finite variety \mathcal{V} has a difference term if and only if the variety generated by $\mathbf{F}_{\mathcal{V}}(2)$ has a difference term. In fact, this is equivalent to $\mathbf{F}_{\mathcal{V}}(2)$ itself having a difference term operation. We use this fact and an adaptation of Valeriote and Willard's "local term condition" strategy to devise a polynomial-time algorithm for deciding whether the variety generated by a finite idempotent algebra has a difference term. (Received January 15, 2017)