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Mehtaab Sawhney* (msawhney@mit.edu) and **David Stoner**. *On a Conjecture Regarding Permutations which Destroy Arithmetic Progressions.*

Hegarty conjectured for $n \neq 2, 3, 5, 7$ that $\mathbb{Z}/n\mathbb{Z}$ has a permutation which destroys all arithmetic progressions mod n . For $n \geq n_0$, Hegarty and Martinsson demonstrated that $\mathbb{Z}/n\mathbb{Z}$ has an arithmetic-progression destroying permutation. However $n_0 \approx 1.4 \times 10^{14}$ and thus resolving the conjecture in full remained out of reach of any computational techniques. However, this project using constructions modeled after those used by Elkies and Swaminathan for the case of $\mathbb{Z}/p\mathbb{Z}$ with p being prime, establishes the conjecture in full. Furthermore our results do not rely on the fact that it suffices to study when $n < n_0$ and thus our results completely independent of the proof given by Hegarty and Martinsson. (Received September 16, 2017)