1056-20-497 Vadim Ponomarenko* (vadim@sciences.sdsu.edu), Department of Mathematics and Statistics, 5500 Campanile Dr., San Diego, CA 92182, and Natalie Selinski. The Probability that Two Semigroup Elements Commute Can Be Anything.
The commuting probability of a semigroup with $n$ elements is defined as the number of pairs of semigroup elements $(x, y)$ with $x y=y x$, divided by $n^{2}$. It is previously known that these probabilities are dense in $(0,1]$, for various semigroups. We extend this result to show that these probabilities are in fact all rational numbers in ( 0,1 ]. (Received September 10, 2009)

