

1077-20-2585

**Thomas Langley\*** ([langley@rose-hulman.edu](mailto:langley@rose-hulman.edu)). *The probability that two elements commute in groups with small centers.* Preliminary report.

The probability that two elements of a non-Abelian finite group commute is at most  $5/8$ , and this bound is realized when the center of the group is one fourth of the group. We investigate the values of this probability when the center of the group is small. We also examine related probabilities for two generalizations of commutativity in this setting, in particular the probability that a product of  $n$  group elements is equal to its reverse, or to a cyclic rearrangement of itself. (Received September 22, 2011)