

1067-Z1-1807 **Amy Mihnea*** (amihnea@fau.edu). *Patterns for Permutations with Fixed Points.*

We apply a pattern-recognition algorithm to the problem of counting permutations with certain properties, starting with the standard inclusion-exclusion formula for calculating the number of derangements of order n . At the intermediate steps, the number of some subsets of permutations with k fixed points, k from 1 to n , is considered. We find the distribution of the differences between adjacent elements for two of these subsets, by connecting each of them to a set of matrices, which we then analyze in order to find patterns. We divide these matrices into families and calculate the final distribution as a sum of intermediate distributions. (Received September 21, 2010)