

Pattern avoidance in compositions and multipermutations

Herbert S. Wilf
Department of Mathematics
University of Pennsylvania
Philadelphia, PA 19104-6395
`wilf@math.upenn.edu`

January 13, 2005

ABSTRACT

We will discuss some questions having to do with pattern avoidance by combinatorial objects other than the usual permutations, namely by ordered partitions of an integer and by permutations of a multiset. In the former case we determine the generating function explicitly, for integer compositions of n that avoid a given pattern of length 3. We show that the answer is the same for all such patterns. We also find an explicit generating function for the number of permutations of a multiset that avoid a given pattern of length 3, and show that the answer is the same for all such patterns, thereby extending and refining earlier results of Albert, Aldred et al., and by Atkinson, Walker and Linton.