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## Random Permutations and Optimal Selling

The talk will focus on two topics. The first one, arising from an application in chemistry, starts with a random permutation of 1,2,...,n. If, in the permutation, i immediatery precedes i+1 then i and i+1 join together to form a cluster. The resulting clusters are then randomly permuted, with the process continuing until only a single cluster remains. We are interested in the number of permutations required.

The second problem compares a selling problem in which a single individual has n items to sell, with one in which n individuals each have a single item to sell. One question of interest is when the expected total return in the latter case, assuming that each individual tries to maximize their own expected return, is equal to that in the former case.