

Today: Probabilistic analysis; hiring problem. §§ 5.1,2.

Next class: HW02 written portion due. Randomized algorithms; mini-review. §§ 5.3,4.

Reminders: Midterm exam. Read material *before and after* class. Use newsgroup.

1. List the members of your group below. Underline your name.

2. A *derangement* of the sequence $1, 2, \dots, n$ is a permutation of the sequence in which no element is at its original position. The number of (distinct) derangements of an n -element sequence is often denoted by $!n$.

List all derangements of n elements for $n = 0, 1, 2, 3, 4$.

3. Prove or disprove: $n! = (n-1)(!(n-1)+!(n-2))$ for $n > 1$.

4. Recall the factorial: $n! \triangleq n(n-1)!$ for $n > 1$ with $0! \triangleq 1$. Prove or disprove:
 $n! = (n-1)((n-1)! + (n-2)!)$ for $n > 1$.