

**Today** Probabilistic analysis; §§ 5.{1,2}.

**Next class** Homework due. Catch-up and review.

**Reminders** Midterm exam soon. 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 derangements of an  $n$ -element sequence is often denoted by  $!n$ , and called the *subfactorial* of  $n$ , by analogy with the  $n!$  being the factorial.

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

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

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