**Undergraduate Math Club**
**Winter 2008**
**2nd floor Nesbitt Common Room**
**Thursday, February 7, 4:10-5:00pm**
**(free pizza and pop, as always)**

# Conway's napkin problem


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## Abstract


Conway's napkin problem is the following. A large number of mathematicians sit at a table in random order and are ignorant of proper etiquette: each prefers to choose the left napkin with some probability p and the right napkin with probability q = 1-p. The mathematicians sit down in order, so some of them may have only 1 choice of napkin (in which case they choose that napkin) or no napkin at all! If the number of people is sufficiently large, what proportion of them are expected to go napkinless?

We will present a clever solution of this problem in the case p = ½, and then outline a solution in the general case. Along the way we will see some nice applications of formal power series and enumerative combinatorics.