

### Hint for Problem 397

If  $f(x) = \sum_{i=0}^{\infty} a_i \frac{x^i}{i!}$  and  $g(x) = \sum_{j=0}^{\infty} b_j \frac{x^j}{j!}$ , what is the coefficient of  $\frac{x^n}{n!}$  in  $f(x)g(x)$ ? Don't be surprised if your answer has a binomial coefficient in it. In fact the binomial coefficient should help you finish the problem.