

# Bounds on Membership Uncertainty: Hints

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## A Stirling Bound

1. Plug in  $k$  and throw away a few things.
2. Try writing out the polynomial in the case of  $k = 3$ .

## Big Bonferroni Correction

1. The probability that  $|f_1 - f_2| > \varepsilon$  given the number of successes is equal to the probability that  $|f_1 - Ef_1| > \varepsilon/2$  given the number of successes. Further, the hypergeometric distribution satisfies the bound

$$\Pr \{|s/t - E[s/t]|\} < 2 \exp(-2\varepsilon^2 t).$$

2. Use the union bound to add up error probabilities.