Discussion 1

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Question: Implement a computer program to compute $k^*(n, \epsilon)$ for given n and $\epsilon \in (0, 1)$. Then,

a) use some examples to demonstrate $\lim_{n\to\infty} \frac{1}{n} k^*(n, \epsilon) = \mathrm{H}(S)$ numerically. And also,

b) since $\lim_{n\to\infty} \frac{1}{n} k^*(n, \epsilon) = \mathrm{H}(S)$ means that $k^*(n, \epsilon) = n\mathrm{H}(S) + o(n)$, i.e. the first-order term is $\Theta(n)$ and the leading coefficient is $\mathrm{H}(S)$, you are asked to use the program to guess what is the second-order term.