Problems for Tutorial 5

1 Optimal Bookstacking

Prove that the stacking arrangement shown in class is optimal for producing the most overhang with a given number of books. That is, given n books, show that the most overhang that can be produced is H_n, the nth harmonic number.

2 Some Limits

Compute the following limits.

- $\sum_{i=1}^{n} \frac{1}{i(i+1)}$.
- $\lim_{n\to\infty} 1/n + 1/(n+1) + \ldots + 1/2n$