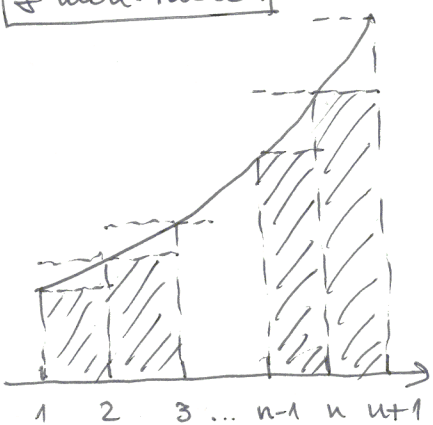
Ocjena sume integralom

f monotona ($\nearrow$ ili $\searrow$), traži se red veličine za

$$\sum_{i=1}^{n} f(i)$$

f mon. rastuća:



$$\sum_{i=1}^{n} f(i) = f(1) + \sum_{i=2}^{n} f(i)$$

pravok. ispod: $\leq \int_1^{n+1} f(x)\,dx$

ili $\leq f(1) + \int_2^{n+1} f(x)\,dx$

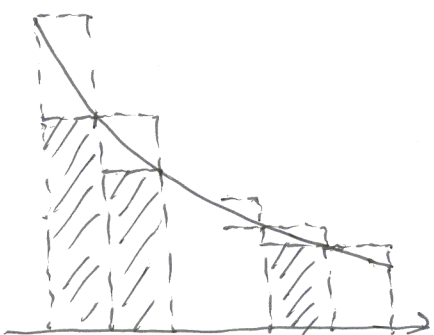
pravok. iznad

$\geq f(1) + \int_1^{n} f(x)\,dx$

(izbac. $f(1)$ izbjegava event. singularitet od f u ∞)

[primjeri: $f(x) = x^k$, $x^k \log x$, $k \geq \infty$]

f mon. pada: [primjer $f(x) = \frac{1}{x}$]



$$\sum_{i=1}^{n} f(i) = f(1) + \sum_{i=2}^{n} f(i)$$

pravok. ispod:

$\leq f(1) + \int_1^{n} f(x)\,dx$

pravok. iznad:

$\geq \int_1^{n+1} f(x)\,dx$, $\geq f(1) + \int_2^{n+1} f(x)\,dx$