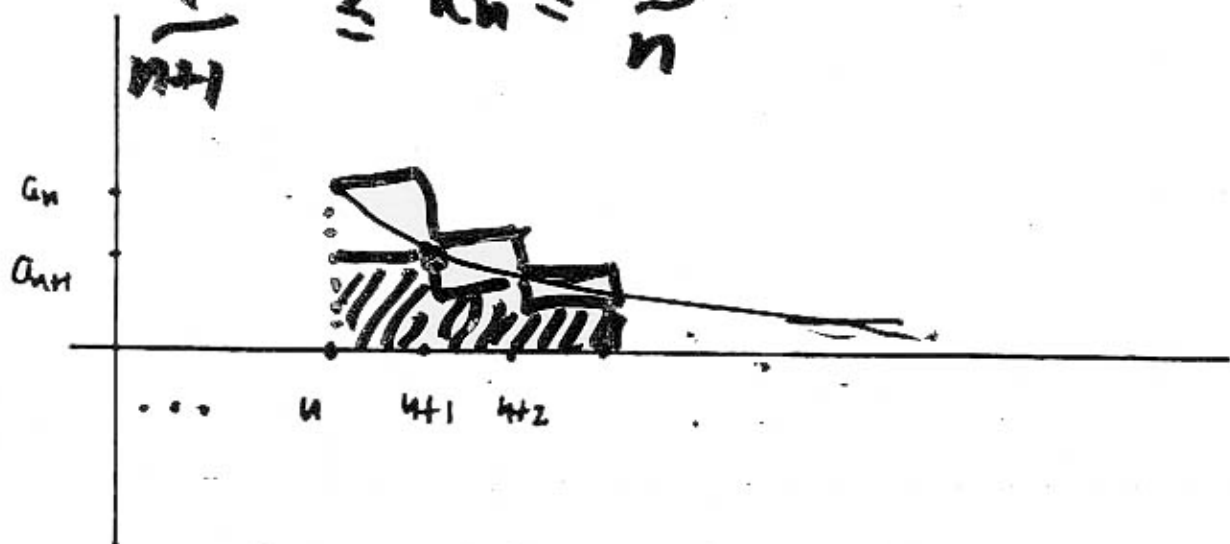


Estimate for the Remainder $R_n = \sum_{k=n+1}^{\infty} a_k$:

$$\int_{n+1}^{\infty} f(x) dx \leq R_n \leq \int_n^{\infty} f(x) dx$$

$$\frac{1}{n+1} \leq R_n \leq \frac{1}{n}$$



Examples: $\sum_{n=1}^{\infty} \frac{1}{n^2}$ $f(x) = \frac{1}{x^2}$

How large must we take n so that

$$R_n < 10^{-2}$$

$$n > 100$$

$$\int_n^{\infty} \frac{dx}{x^2} = \left. -\frac{1}{x} \right|_n^{\infty} = \frac{1}{n}$$