Integraaltoets / Integral Test §11.3
Suppose that f is a continuous, positive, decreasing function on $[1, \infty)$ and let $a_n = f(n)$. Then:

- If $\int_1^\infty f(x)\,dx$ is convergent, then $\sum_{n=1}^{\infty} a_n$ is convergent.

- If $\int_1^\infty f(x)\,dx$ is divergent, then $\sum_{n=1}^{\infty} a_n$ is divergent.

Hence $\int_1^\infty f(x)\,dx$ is convergent if and only if $\sum_{n=1}^{\infty} a_n$ is convergent.

p-reeks / p-series:
The p-series $\sum_{n=1}^{\infty} \frac{1}{n^p}$ is convergent for $p > 1$ and divergent for $p \leq 1$.

Homework
Ex. 11.3 nr. 5, 7, 11, 15, 17, 21, 29
Leave out pp.763–765.