Die Vergelykingstoets / The Comparison Test

Gestel $\displaystyle\sum_{n=1}^{\infty} a_n$ en $\displaystyle\sum_{n=1}^{\infty} b_n$ is reekse met positiewe terme.

1. As $\displaystyle\sum_{n=1}^{\infty} b_n$ konvergeer en $a_n \leq b_n$ vir alle $n \in \mathbb{N}$,

   dan konvergeer $\displaystyle\sum_{n=1}^{\infty} a_n$.

2. As $\displaystyle\sum_{n=1}^{\infty} b_n$ divergeer en $a_n \geq b_n$ vir alle $n \in \mathbb{N}$,

   dan divergeer $\displaystyle\sum_{n=1}^{\infty} a_n$.

Huiswerk
Ex. 11.4 nr. 1, 5, 7, 9, 13, 15, 29, 39

Die Limietvergelykingstoets / The Limit Comparison Test

Gestel $\sum\limits_{n=1}^{\infty} a_n$ en $\sum\limits_{n=1}^{\infty} b_n$ is reekse met positiewe terme:

1. As $\lim\limits_{n\to\infty} \dfrac{a_n}{b_n} = 0$ en $\sum\limits_{n=1}^{\infty} b_n$ is konvergent, dan is $\sum\limits_{n=1}^{\infty} a_n$ konvergent.

2. As $\lim\limits_{n\to\infty} \dfrac{a_n}{b_n} = c > 0$, dan is $\sum\limits_{n=1}^{\infty} b_n$ is konvergent as en slegs as $\sum\limits_{n=1}^{\infty} a_n$ konvergent is.

3. As $\lim\limits_{n\to\infty} \dfrac{a_n}{b_n} = \infty$ en $\sum\limits_{n=1}^{\infty} b_n$ is divergent, dan is $\sum\limits_{n=1}^{\infty} a_n$ divergent.

Huiswerk

Ex. 11.4 nr. 17, 19, 21, 25, 27, 31, 41(b)

Laat uit "Estimating Sums".