

Limits

Limits for Continuous Functions

- Suppose two functions $f, g : [a, b] \rightarrow R$ have limits $k \in R$ and $l \in R$ respectively at $x_0 \in [a, b]$
 - $f \pm g$ has limit $k \pm l$ at x_0
 - The product $f \cdot g$ has limit kl at x_0
 - If $l \neq 0$, then f/g has limit k/l at x_0

The sequence $(a_n)_{n \geq 1}$ converges in R on $a \in R$ is written as:

$$\lim_{n \rightarrow \infty} a_n = a$$

a_n diverges to ∞ or a_n converges in $R \cup \infty$ is written as:

$$\lim_{n \rightarrow \infty} a_n = \infty$$