

Properties: Let $\lim_{x \rightarrow \infty} f(x)$ and $\lim_{x \rightarrow \infty} g(x)$ exist,

$$\lim_{x \rightarrow \infty} [f(x) + g(x)] = \lim_{x \rightarrow \infty} f(x) + \lim_{x \rightarrow \infty} g(x)$$

$$\lim_{x \rightarrow \infty} [f(x) - g(x)] = \lim_{x \rightarrow \infty} f(x) - \lim_{x \rightarrow \infty} g(x)$$

$$\lim_{x \rightarrow \infty} [f(x) \cdot g(x)] = [\lim_{x \rightarrow \infty} f(x)] \cdot [\lim_{x \rightarrow \infty} g(x)]$$

$$\lim_{x \rightarrow \infty} [f(x)/g(x)] = [\lim_{x \rightarrow \infty} f(x)] / [\lim_{x \rightarrow \infty} g(x)],$$

$\lim_{x \rightarrow \infty} g(x) \neq 0$

$$\lim_{x \rightarrow \infty} \sqrt[n]{g(x)} = \sqrt[n]{\lim_{x \rightarrow \infty} g(x)}, \quad \lim_{x \rightarrow \infty} g(x) > 0, \quad n \text{ even}$$