

Description The properties of limits are intuitive but important for simplifying problems.

Setup

$$\lim_{x \rightarrow c} f(x) = L$$

$$\lim_{x \rightarrow c} g(x) = M$$

Limit Properties

Sum Property:

$$\lim_{x \rightarrow c} (f(x) + g(x)) = L + M$$

Difference Property:

$$\lim_{x \rightarrow c} (f(x) - g(x)) = L - M$$

Product Property:

$$\lim_{x \rightarrow c} (f(x) \times g(x)) = L \times M$$

Constant Multiple Property:

$$\lim_{x \rightarrow c} (k \times f(x)) = k \times L$$

Quotient Property:

$$\frac{\lim_{x \rightarrow c} (f(x))}{\lim_{x \rightarrow c} (g(x))} = L \div K$$

Exponent Property:

$$\lim_{x \rightarrow c} (f(x))^{\frac{r}{s}} = L^{\frac{r}{s}}$$