



Math Study Strategies

Properties of Limits

In the following limits, b and c are real numbers, n is a positive integer, and f and g are functions.

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

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

Scalar Multiple	$\lim_{x \rightarrow c} [bf(x)] = bL$
Product	$\lim_{x \rightarrow c} [f(x)g(x)] = LK$
Sum/ difference	$\lim_{x \rightarrow c} [f(x) \pm g(x)] = L \pm K$
Quotient	$\lim_{x \rightarrow c} \frac{f(x)}{g(x)} = \frac{L}{K}, K \neq 0$
Power	$\lim_{x \rightarrow c} [f(x)]^n = L^n$

Limit of a Polynomial Function

p is a polynomial function and c is a real number

$$\lim_{x \rightarrow c} p(x) = p(c)$$

Limit of a Rational Function

r is a rational function ($r(x) = p(x)/q(x)$) and c is a real number such that $q(c) \neq 0$

$$\lim_{x \rightarrow c} r(x) = r(c) = \frac{p(c)}{q(c)}$$

Limit of a Function Involving a Radical

n is a positive integer. The limit below is valid for all c if n is odd, and is valid for $c > 0$ if n is even.

$$\lim_{x \rightarrow c} \sqrt[n]{x} = \sqrt[n]{c}$$

