

LIMIT LAWS:

1)  $\lim_{x \rightarrow a} (f(x) + g(x)) = \lim_{x \rightarrow a} f(x) + \lim_{x \rightarrow a} g(x)$

2)  $\lim_{x \rightarrow a} (f(x) - g(x)) = \lim_{x \rightarrow a} f(x) - \lim_{x \rightarrow a} g(x)$

3)  $\lim_{x \rightarrow a} (f(x) \cdot g(x)) = \lim_{x \rightarrow a} f(x) \cdot \lim_{x \rightarrow a} g(x)$

4)  $\lim_{x \rightarrow a} (k \cdot f(x)) = k \cdot \lim_{x \rightarrow a} f(x)$

5)  $\lim_{x \rightarrow a} \frac{f(x)}{g(x)} = \frac{\lim_{x \rightarrow a} f(x)}{\lim_{x \rightarrow a} g(x)}$ , as long as  $\lim_{x \rightarrow a} g(x) \neq 0$

6) a)  $\lim_{x \rightarrow a} (f(x))^n = [\lim_{x \rightarrow a} f(x)]^n$

b)  $\lim_{x \rightarrow a} \sqrt[n]{f(x)} = \sqrt[n]{\lim_{x \rightarrow a} f(x)}$

c)  $\lim_{x \rightarrow a} (f(x))^r = [\lim_{x \rightarrow a} f(x)]^r$  where r is a rational number.