

~~24/3 (10/7/1)~~

~~From 10/7/23~~

If $st(a)$ & $st(b)$ exist:

If $\lim_{x \rightarrow c} f(x)$ & $\lim_{x \rightarrow c} g(x)$ exist:

$$k \text{ real} \Rightarrow st(k \cdot b) = k \cdot st(b)$$

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

$$st(a \pm b) = st(a) \pm st(b)$$

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

$$st(a \cdot b) = st(a) \cdot st(b)$$

$$\lim_{x \rightarrow c} f(x)g(x) = \left(\lim_{x \rightarrow c} f(x) \right) \left(\lim_{x \rightarrow c} g(x) \right)$$

$$st(b) \neq 0 \Rightarrow st\left(\frac{a}{b}\right) = \frac{st(a)}{st(b)}$$

$$\lim_{x \rightarrow c} g(x) \neq 0 \Rightarrow \lim_{x \rightarrow c} \left(\frac{f(x)}{g(x)}\right) = \frac{\lim_{x \rightarrow c} f(x)}{\lim_{x \rightarrow c} g(x)}$$

$$a > 0 \Rightarrow st(\sqrt[n]{a}) = \sqrt[n]{st(a)}$$

$$\lim_{x \rightarrow c} f(x) > 0 \Rightarrow \lim_{x \rightarrow c} \sqrt[n]{f(x)} = \sqrt[n]{\lim_{x \rightarrow c} f(x)}$$

$$n = 1, 2, 3, \dots \Rightarrow st(a^n) = st(a)^n$$

$$n = 1, 2, 3, \dots \Rightarrow \lim_{x \rightarrow c} (f(x))^n = \left(\lim_{x \rightarrow c} f(x)\right)^n$$