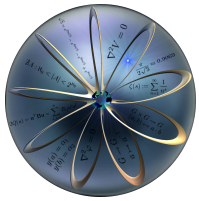

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Cauchy condition for limit of function

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A real function f has the limit $\lim\limits_{x \to x_0} f(x)$ if and only if for every positive number ε there exists another positive number $\delta(\varepsilon)$ satisfying

$$|f(u) - f(v)| < \varepsilon \quad \text{when} \quad 0 < |u - x_0| < \delta(\varepsilon) \ \text{ and } \ 0 < |v - x_0| < \delta(\varepsilon).$$

References

[1] Л. Д. Кудрявцев: *Математический анализ. I том.* Издательство "Высшая школа". Москва (1970).