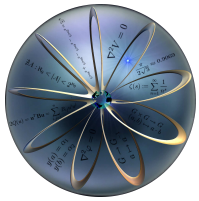

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uniform convergence of integral

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Defines	integral converging uniformly
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Let the function $f(x,\,t)$ be continuous in the domain

$$a \leqq x < b, \quad c \leqq t \leqq d,$$

where b is a real number or ∞, and let the improper integral

$$F(t) := \int_a^b f(x,\,t)\,dx = \lim_{u\to b-} \int_a^u f(x,\,t)\,dx \tag{1}$$

be `http://planetmath.org/ImproperIntegral`convergent in every point t of the interval $[c,\,d]$. We say that the on the interval $[c,\,d]$, if for each positive number ε there is a value $x_\varepsilon \in [a,\,b]$ such that

$$\left|\int_x^b f(x,\,t)\,dx\right| < \varepsilon \quad \forall t \in [c,\,d]$$

when $x_\varepsilon \leqq x < b$.