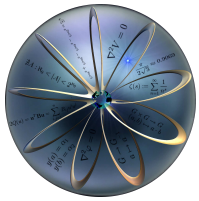

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facts about Riemann–Stieltjes integral

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- If the integrator g of the `http://planetmath.org/node/3187`Riemann–Stieltjes integral $\int_a^b f(x)\,dg(x)$ is the identity function, then the integral reduces to the Riemann integral $\int_a^b f(x)\,dx$.

- If the integrand of the Riemann–Stieltjes integral is a constant function, one has
$$\int_a^b c\,dg(x) \;=\; c\cdot(g(b)-g(a)).$$

- If the integrand f is continuous and the integrator g monotonically nondecreasing on the interval $[a,\,b]$, then there exists a number ξ on the interval such that
$$\int_a^b f(x)\,dg(x) \;=\; f(\xi)(g(b)-g(a)).$$
Cf. the integral mean value theorem.

- If f is continuous, g monotonically nondecreasing and differentiable on the interval $[a,\,b]$, then
$$\frac{d}{dx}\int_a^x f(t)\,dg(t) \;=\; f(x)g'(x) \quad \text{for } a<x<b.$$