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integral sign

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The *integral sign*



is a stylised version of the *long s* letter.

The long s is a typographic variant of lowercase s, being the only lowercase s in the Carolingian minuscule script. The modern short (round) s appeared later to the ends of words, and has now replaced completely the long s in the antiqua script.

Gottfried Wilhelm Leibniz introduced the integral sign as the first letter s of the Latin word *summa* ('sum'). The long shape of \int may be thought to symbolically depict the fact that <http://planetmath.org/DefiniteIntegral> is a limiting case of sum.

A variant



of the integral sign is used in integrals taken along a closed curve in \mathbb{R}^2 or about a closed surface in \mathbb{R}^3 ; see e.g. Cauchy integral theorem, derivation of heat equation.

The function given after the integral sign, i.e. the function to be *integrated*, is the *integrand*.