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Integrable functions from Cauchy to Riemann and Darboux. (Fonctions intégrables de Cauchy à Riemann et Darboux.)

Quadrature 90, 15-17 (2013).

Summary: The article gives a survey of integrability. The author considers the different types of integrals. First, he explains Cauchy's work at the polytechnic school in 1823. Then he exposes Riemann's attempt for integrating non-continuous functions, without anti-derivative. The author details Riemann's example, consisting in the function $x \to f(x) = \sum \frac{(nx)}{n^2}$ where $(x) = x - p_x$, where p_x denotes the integer closest to x.

Classification: A30 I55
Keywords: integral calculus; Cauchy integral; Riemann integral