

Jan Sebestik
Bolzano e la matematica

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This article presents an overview of Bolzano's most important contributions to mathematics. Contrary to the majority of his contemporaries, in his works, Bolzano never lost from his view the goal to found, *begründen*, mathematical theories. He pays attention to fundamental concepts of mathematics: those of line, dimension and continuum in geometry, those of convergence and continuity in infinitesimal calculus. In his first works he treats the parallel postulate and the foundations of analysis and obtains before Cauchy important results: the definition of the continuity of functions, Bolzano-Cauchy criterion of the convergence of sequences and the theorem of the supremum. Having completed the *Wissenschaftslehre*, he begins to write the *Größenlehre*, a fundamental treatise of mathematics, whose parts are still being published in the *Gesamtausgabe*. In his *Functionenlehre*, which anticipates the work of Weierstrass and of his school, he construes a continuous not differentiable function. In the posthumous *Paradoxes of the infinite*, he yields a sketch of what will later become set theory, stating the fundamental property of infinite sets.