

# Saks, Stanislaw | Encyclopedia.com

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(b. Warsaw, Poland, 30 December 1897; d. November 1942)

*mathematics.*

Saks was a member of the Polish school of mathematics that flourished between the two world wars. The son of Philip and Ann Łabedz Saks, he received his secondary education in Warsaw. In the autumn of 1915 Saks entered the newly established Polish University of Warsaw, from which he received his doctorate in 1921 with a dissertation in topology. From 1921 to 1939 he was an assistant at the Warsaw Technical University and, from 1926 to 1939, he also lectured at the University of Warsaw. In 1942 he was arrested by the Nazi authorities and killed, allegedly while attempting to escape from prison.

Most of Saks's research involved the theory of real functions, such as problems on the differentiability of functions and the properties of Denjoy-Perron integrals. His work also touched upon questions in such related fields as topology and functional analysis. The two mathematicians at the University of Warsaw who exerted the greatest influence upon Saks were the topologist Stefan Mazurkiewicz, from whom Saks acquired a sensitivity to topological problems and methods, and Waclaw sierpiński. Saks, in turn, considerably influenced the development of real analysis within the Polish school.

Saks's contributions to mathematics included two important books. The first, *Théorie de l'intégrale* (1933), grew out of his lectures at the University of Warsaw and appeared as the second volume in the series *Monografie Matematyczne*. A thoroughly revised English edition was published in 1937 as the seventh volume of the series. In this highly original work Saks systematically developed the theory of integration and differentiation from the standpoint of countably additive set functions. Widely read outside Poland, it is now considered a still useful classic. In 1938 Saks collaborated with [Antoni Zygmund](#) to produce the ninth volume of *Monografie Matematyczne*, *Funkcje analityczne*, which received the prize of the Polish Academy of Sciences that year. An English edition, published by Zygmund in 1952, helped make its contents known to a larger audience, for whom it has become a standard reference work on complex analysis.

## BIBLIOGRAPHY

I. Original Works. Saks's papers have not been published in collected form, but many appeared in *Fundamenta mathematicae* and, to a lesser extent, in *Studia mathematica*. His books are *Zarys teorii calki* (Warsaw, 1930); *Théorie de l'intégrale* (Warsaw, 1933), rev. as *Theory of the Integral*, L. C. Young, trans. (Warsaw-Lvov-New York, 1937; repr. [New York](#), 1964); and *Funkcje analityczne* (Warsaw, 1938), written with A. Zygmund. rev. as *Analytic Functions*, E.J. Scott, trans. (Warsaw, 1952; 2nd English ed., 1965).

II. Secondary Literature. Apparently nothing has been written on Saks. (The author is indebted to Professor A. Zygmund of the [University of Chicago](#) for much helpful information.) For further references concerning the Polish school of mathematics, see M.G. Kuzawa, *Modern Mathematics: The Genesis of a School in Poland* ([New Haven](#), 1968).

Thomas Hawkins