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(*b*. Wandsbeck, Schleswig-Holstein, Germany, 3 April 1892; *d*. Haverford, Pennsylvania, 7 February 1969)

mathematics.

Rademacher attended the University of Göttingen, where he studied real functions and the calculus of variations with Constantin Carathéodory and number theory with Edmund Landau. He received the doctorate in 1916 with a dissertation on single-valued mappings and mensurability. After teaching at a school in Thuringia run by teachers with modern ideas, Rademacher became *Privatdozent* at the University of Berlin in December 1916. There he was influenced by Erhard Schmidt, Issai Schur, and Hans Hamburger. In 1922 he was appointed associate professor with tenure at Hamburg. Under the influence of Erich Hecke he turned to number theory, writing at first on the method devised by Viggo Brun and later on the additive prime-number theory of algebraic numbers.

Rademacher's chief field of interest for forty years was analytic number theory, particularly additive problems. At Easter 1925, after long hesitation, he went to Breslau. (Hecke had vainly attempted to procure a corresponding position for him at Hamburg.) There he was concerned in particular with the behavior of the logarithm of the function

with respect to modulus substitutions. The function · (*T*) had appeared, in its essential aspects, in the writings of Euler. Dedekind had later treated it in the course of his comments on a fragment of Riemann's (see Riemann, *Gesammelte … Werke*, R. Dedekind and H. Weber, eds. [1876], 438–447). Rademacher devised a new proof of the results obtained with the function, utilizing the connection between modular functions and Dirichlet series over the Mellin integral (Hecke's method).

During this period Rademacher wrote, in collaboration with Otto Toeplitz, *Von Zahlen und Figuren*, addressed to a broad, nonprofessional audience. In many of his lectures Rademacher discussed fundamental problems in extremely diverse fields and the ways in which they had been treated. Forced to flee Germany in 1933 because of his pacifist views, he went to Swarthmore College and later to the University of Pennsylvania, all the while continuing his research on analytic number theory. His most outstanding achievement was the proof of his asymptotic formula for the growth of the function *p(n)*, which yields the number of representations of a natural number *n* as a sum of natural numbers. The question had been raised much earlier by Leibniz (see his *Mathematische Schriften*, C. I. Gerhardt, ed., III). Then Euler found that

The first asymptotic formula for *p(n)* originated with Hardy and Ramanujan (*Proceedings of the London Mathematical Society*, 2nd ser., **17** [1918], 75–115); Rademacher proposed a simpler formula for p(n) that led to remarkable results. As an example he calculated *p*(599), a number that consists of twenty-four digits in the decimal system. Rademacher's asymptotic formula deviated from this by only about 0.5.

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A short account of Rademacher's life appears in Max Pinl, "Kollegen in einer dunkein Zeit," in *Jahresberichte der Deutschen Mathematiker-Vereinigung*, **71** (1969), 205 ff.

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