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This special issue of Mathematics of Computation (Volume 48, Number 177, January 1987) is dedicated to Daniel Shanks on the occasion of his 70th birthday. Since 1959, when Shanks joined the Editorial Committee for this journal, he has been a guiding force in shaping the computational number theory component of the journal, and has had an immense influence in the field. This volume contains papers by some of the top researchers in the field and covers such topics as elliptic curves, primality testing, congruences, class groups, and cyclotomic fields. Although a numbered issue of the Mathematics of Computation journal, it will serve as a stand alone reference work for computational number theory.

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