produce coefficients of an economized polynomial, or of Clenshaw which operate with the coefficients in Chebyshev series expansions, here functional values $f(x_{n,i})$ replace the polynomial or Chebyshev coefficients, for use over the entire range in x (normalized to $[-1, 1]$). After all operations and calculations pertaining to any of a wide class of problems have been completed, we end up with a skeletal set of final answers $f(x_{n,i})$, $i = 1(1)n$, from which $f(x)$ is found immediately by using these tables which are capable of *global interpolation*.

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27[9.00].—M. I. Knopp, (Editor), *Analytic Number Theory* (Proc. Conf. held at Temple University, Philadelphia, May 12–15, 1980), Lecture Notes in Math., vol. 899, Springer-Verlag, Berlin and New York, 1981, x + 478 pp., 22 cm. Price $24.50.

The conference mentioned in the title was held on the occasion of the proforma retirement of Emil Grosswald.

The volume contains detailed versions of most of the lectures given at the conference and covers a wide range of subjects in analytic number theory. Of particular interest from the standpoint of computation are the following six articles, for which we include capsule reviews:

(1) Ronald Alter, "Computations and generalizations of a remark of Ramanujan." This paper presents extensive tables of $r(m, n, s)$, the smallest positive integer that can be expressed as a sum of m positive nth powers in s different ways.

(2) Robert J. Anderson and Harold Stark, "Oscillation theorems." The authors give an illuminating discussion of oscillation theorems for the sum-functions of some familiar arithmetic functions; specifically, they discuss various methods for obtaining numerical estimates for the lim sup and lim inf of $x^{-1/2}M(x)$, where $M(x) = \sum_{n \leqslant x} \mu(n)$ and μ denotes the Möbius function.

(3) Harold G. Diamond and Kevin S. McCurley, "Constructive elementary estimates for $M(x)$." The paper shows how arguments akin to those of Chebyshev can be combined with a finite amount of computation to produce elementary numerical upper estimates of very small size for lim sup $x^{-1}|M(x)|$; needless to say, the prime number theorem implies that this lim sup is actually zero.

(4) Steven M. Gonek, "The zeros of Hurwitz's zeta function on $\sigma = \frac{1}{2}$". The author shows that for certain rational values of x the proportion of zeros of $\zeta(s, \alpha)$, which have real part $\frac{1}{2}$, is definitely less than one.

(5) Peter Hagis, Jr., "On the second largest prime divisor of an odd perfect number." On the basis of extensive computer calculations and searches the paper proves that the prime mentioned in the title must be greater than 1000, under the assumption that odd perfect numbers exist.

(6) Julia Mueller, "Gaps between consecutive zeta zeros." Assuming the Riemann Hypothesis, the author proves that, if the zeros of the Riemann zeta function in the

upper half-plane are $\frac{1}{2} + \gamma_1, \frac{1}{2} + \gamma_2, \ldots$, where $\gamma_1 \leqslant \gamma_2 \leqslant \cdots$, and if

$$\lambda_n = (2\pi)^{-1}(\gamma_{n+1} - \gamma_n)\log \gamma_n,$$

then lim sup $\lambda_n > 1.9$; it is well known that the average value of λ_n is 1.

Other authors represented in this valuable collection are G. Andrews, P. Bateman, B. Berndt, D. Bressoud, H. Cohn, T. Cusick, P. Erdös, L. Goldstein, B. Gordon, E. Grosswald, J. Hafner, K. Hughes, M. Knopp, J. Lagarias, D. Lehmer, E. Lehmer, J. Lehner, T. Metzger, M. Nathanson, D. Newman, M. Newman, A. Parson, C. Pomerance, M. Sheingorn, E. Straus, A. Terras, and L. Washington.

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