Prime	Designation of period	*for*	*read*
59	(0)	$2\underline{4}72881355$	$2\underline{3}72881355$
233	(0)	$79\underline{5}9914163$	$79\underline{3}9914163$
		$2789\underline{7}99570$	$2789\underline{6}99570$
271	(52)	$23\underline{4}47$	$23\underline{2}47$
331	(0)	$27794\underline{6}6193$	$27794\underline{5}6193$
359	(1)	$10584\underline{8}5821$	$10584\underline{9}5821$
397	(0)	$\underline{3}03022670$	$\underline{4}03022670$
419	(0)	$11\underline{8}3317422$	$11\underline{9}3317422$
443	(1)	$5869\underline{5}74492$	$5869\underline{0}74492$
541		$5101663\underline{3}85$	$5101663\underline{5}85$
587		$\underline{1}763202725$	$\underline{6}763202725$
653		$42113\underline{2}2312$	$42113\underline{3}2312$
719		$1390\underline{3}20584$	$1390\underline{8}20584$
773		$69210\underline{9}6675$	$69210\underline{8}6675$
863		$16570104\underline{3}8$	$16570104\underline{2}8$
883		$1925\underline{7}54813$	$1925\underline{2}54813$
		$66024\underline{4}1506$	$66024\underline{9}1506$
967		$72699\underline{6}6928$	$72699\underline{0}6928$
977		$997952917\underline{8}$	$997952917\underline{0}$
983		$03153611\underline{5}9$	$03153611\underline{3}9$
		$3550\underline{5}56052$	$3550\underline{3}56052$
991		$\underline{9}845610494$	$\underline{2}845610494$

At my request Professor R. C. ARCHIBALD has compared the preceding data with the corresponding results in Goodwyn's table. He reports that these errata in Gauss' table do not coincide with any of the known errata in Goodwyn's work.

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[1] J. W. L. GLAISHER, "On circulating decimals," Cambridge Phil. Soc., *Proc.*, v. 3, 1877, p. 185–206.
[2] H. GOODWYN, *A Table of the Circles*, etc., London, 1823 [*MTAC*, v. 1, p. 22–23].

178.—M. KRAITCHIK, *Recherches sur la Théorie des Nombres*, v. 1, Paris, 1924.

In Table IV, p. 229, $N = 2273$, $\rho = 97$

for 386 *read* 381

For other errata in this table see *MTAC*, v. 3, p. 372, MTE **147**.

D. H. L.

UNPUBLISHED MATHEMATICAL TABLES

105[C].—A. OPLER, *Table of* $\log [(1 - x)/(y - x)]$. Tabulated from punch cards and deposited in UMT File.

This is a 5D table for $x = .02(.01).99$, $y = 0(.005).05(.01).2$ $(y > x)$. It is a slightly more elaborate table than the one reported in RMT **796**.

106[F].—A. S. ANEMA, *Table of the number of primitive right triangles with perimeters not exceeding* $2N$. Manuscript on deposit in UMT FILE.

Let $T(N)$ denote the number of primitive pythagorean triangles whose semi-perimeters do not exceed N. Then it is known[1] that

$$T(N) = \pi^{-2}N \ln 4 + O(N^{\frac{1}{2}} \log N). \tag{1}$$

The present table gives $T(N)$ for $N = 500(500)60000$ and is based on actual lists of pythagorean triangles compiled by the author. This table extends considerably one given[1] by D. H. L. for $N = 500(500)5000$. The table exhibits the remarkable smallness of the error term in (1). At $N = 60000$ we find, for instance, that

$$T(N) = 8430,$$

while

$$\pi^{-2}N \ln 4 = 8427.659.$$

[1] D. H. LEHMER, "A conjecture of Krishnaswami," Amer. Math. Soc., *Bull.*, v. 54, 1948, p. 1185–1190.

107[F].—A. S. ANEMA & F. L. MIKSA, *Tables of primitive pythagorean triangles with equal perimeters.* Typewritten manuscript (21 p.) on deposit in UMT File.

The table lists 182 sets of primitive pythagorean triangles (A, B, C) in sets of 3 (or 4) which have equal perimeters less than 10^6 together with the "generators" of each triangle. There are seven sets of 4 such triangles, the smallest one being

$$\begin{array}{r}
(86099,\ 99660,\ 131701)\\
(133419,\ 43660,\ 140381)\\
(151811,\ 13260,\ 152389)\\
(9435,\ 153868,\ 154157)
\end{array}$$

All 4 triangles have the same perimeter $317460 = 2^2\cdot3\cdot5\cdot11\cdot13\cdot37$.

108[F].—A. GLODEN, *Table de factorisation des nombres* $N^4 + 1$ *dans l'intervalle* 3001–6000. Manuscript deposited in UMT File.

This typewritten table of 28 leaves gives data on the factors of $N^4 + 1$ for $N = 3001(1)6000$. For the majority of N's the complete factorization is given. In some cases the factorization is incomplete or even entirely unknown. Any unknown factor exceeds 600000.

This table extends the author's previous table for $N = 1001(1)3000$ and the table of CUNNINGHAM for $N = 1(1)1000$ [*MTAC*, v. 2, p. 211; v. 3, p. 118–9].

109[I, K].—W. F. BROWN JR. & C. W. DEMPSEY, *Tables of Orthogonal Polynomials and of their Derivatives.* Photostat, 34 leaves, deposited in UMT FILE.

The polynomials tabulated are those of CHEBYSHEV and GRAM, used for curve fitting, and are what FISHER & YATES denote by $\xi_r'(x)$ [see *MTAC*, v. 1, p. 148–150, FMR, *Index*, §23.82]. The work is in three parts.

Table I gives the coefficients of $\xi_r'(x)$ for n points for all $r < n$ and for $n = 3(2)25$, as well as

$$S_r = \sum_{|k|<\frac{1}{2}n} \{\xi_r'(k)\}^2.$$

Table II gives all the derivatives of the polynomials in Table I as far as $n = 15$.

Table III gives a table of three integer parameters to enable the user to pass easily from the polynomials in Table I to the corresponding polynomials T_r of AITKEN.

AUTOMATIC COMPUTING MACHINERY

Edited by the Staff of the Machine Development Laboratory of the National Bureau of Standards. Correspondence regarding the Section should be directed to Dr. E. W. CANNON, 225 Far West Building, National Bureau of Standards, Washington 25, D. C.

TECHNICAL DEVELOPMENTS

Report on the Machine of the Institut Blaise Pascal

1. The fundamental characteristics of the machine being built for the Institut Blaise Pascal are as follows.

a) It will be a laboratory machine, of which the elements can be changed or increased in number without upsetting the general structure of the machine.

b) It will be a parallel machine.

This last characteristic has led to the study of calculating devices first, for we assumed from the beginning and still think that the problems of memory and control cannot be solved a priori: their solutions depend upon the characteristics of the calculating devices and upon the nature of the problems to be attacked.

2. Mathematical investigation has led to a method[1] of performing division and square rooting in the binary system, reducing these operations to a series of additions and of subtractions of the same duration as the series which constitutes multiplication—lasting some microseconds only.

In consequence of this result:

a) the arithmetic unit is devised to perform automatically the basic operations of addition, subtraction, multiplication, division, and square rooting, but

b) the only operations actually performed in the calculating organ are addition and subtraction (and repeated sequences of these).

3. The computer built on these principles is composed of:

a) three accumulators, M, X, and P, where are stored or are formed: in M, the multiplicand and the divisor; in X, the multiplier, the quotient, and the square root; and in P, the product, radicand, and the dividend, and

b) of a subroutines program which controls the sequence of additions and subtractions of which are built up the basic arithmetic operations.

Furthermore, the quotient and the square root are transferred to P at the end of these operations, in order that the result of the operation shall always