8 [9].— J. P. KULIK, *Magnus Canon Divisorum* ···, 8 ms. volumes (v. 2 now missing), deposited in the Library of the Academy of Sciences, Vienna in 1867.

A photostatic copy of that portion of v. 1 consisting of pages 260 through 416 has been deposited by D. H. Lehmer in the UMT file. This portion of Kulik's monumental table gives the least prime factor for all integers not divisible by 2, 3, or 5 between 9,000,000 and 12,642,600. The deposited copy includes handwritten corrections by Professor Lehmer inserted in the margins.

A detailed description of the complete table has been published by Joffe [1], superseding that of D. N. Lehmer [2].

In 1948 an announcement [3] was made that the Carnegie Institution of Washington had made in the preceding year a negative microfilm of this same portion of v. 1 and that it was prepared to supply positive microfilm copies at a nominal charge ($1.00 per copy at that time).

J. W. W.

1. UMT 48, *MTAC*, v. 2, 1946, pp. 139–140.
2. D. N. LEHMER, *Factor Table for the First Ten Millions*, Washington, D. C., 1909; also *List of Prime Numbers from* 1 *to* 10,006,721, Washington, D. C., 1914. (Both reprinted by Hafner Publishing Co., New York, 1956.)
3. *MTAC*, v. 3, 1948, p. 222, N 93.

9 [9].— SIGEKATU KURODA, *Table of Class Numbers,* $h(p)$ *Greater than* 1, *for Fields* $Q(\sqrt{p})$, $p \equiv 1 \pmod 4 \leqslant 2776817$, University of Maryland, 1965, copy deposited in the UMT file.

The table consists of 88 Xeroxed computer sheets containing class numbers $h(p)$ for primes of the form $p = 4n + 1$. The purpose of the computation was not simply to calculate $h(p)$, but to test a conjectured method of doing so. It is well known that every ideal class of $Q(\sqrt{p})$ contains an integral ideal with norm $< B = \frac{1}{2}\sqrt{p}$. Also the class number h is odd, the nonprincipal classes (if $h > 1$) occurring in conjugate pairs $C_i, C_i' = C_i^{-1}$, $1 \leqslant i \leqslant h' = \frac{1}{2}(h - 1)$. The conjecture states that the h' classes C_i can be represented by integral ideals *all having distinct norms less than* B.

Thus, only those p with $h(p) > 1$ were printed. There are $22 \cdot 2^{10} = 22528$ such primes up to $p = 2776817$. A printed count shows that altogether 100811 cases were computed; thus 78283 cases with $h = 1$ are omitted. The table lists the primes p and the class numbers $h(p)$ on alternate pages. Every other page contains 512 primes in 16 columns and 32 rows, each position identified by a number in base 32. The class number $h(p)$ is found on the next sheet and in the same position as p, cf. [1]. The class numbers are written in base 32 and followed by a symbol (P, Q, C, or D) indicating that the conjecture was verified for that case. The primes p were printed both in decimal and in base 32. The copy deposited contains the decimal version except for the first two pages. These were missing from the reviewer's copy of the table and so are given in base 32. For statistics about the class number distribution see the reviewer's paper in this issue [2].

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1. R. B. LAKEIN & S. KURODA, UMT 38, *Math. Comp.*, v. 24, 1970, pp. 491–493.
2. R. B. LAKEIN, "Computation of the ideal class group of certain complex quartic fields. II," *Math. Comp.*, v. 29, 1975, pp. 137–144 (this issue).

10 [9].—RICHARD B. LAKEIN, *Class Numbers of* 5000 *Quartic Fields* $Q(\sqrt{\pi})$, SUNY at Buffalo, 1973, ms. of 21 computer sheets deposited in the UMT file.

Let P be a rational prime $\equiv 1 \bmod 8$, and $\pi = a + bi$ a Gaussian prime with norm $a^2 + b^2 = P$, normalized so that $a, b > 0, b \equiv 0 \bmod 4$. Then $K = Q(\sqrt{\pi})$ is a totally complex quartic field with no quadratic subfield other than $Q(i)$. The arithmetic of K has many strong analogies to that of a real quadratic field with prime discriminant. In particular, the class number $h(\pi)$ of K is odd.

This table lists the first 5000 primes $P \equiv 1 \bmod 8$ (from $P = 17$ through $P = 226241$), the (normalized) Gaussian prime factor π of P, and the class number $h(\pi)$ of the quartic field $K = Q(\sqrt{\pi})$. The final page of the table lists the cumulative distribution of class numbers for each successive 1000 fields. The distribution of class numbers is very close to that for the first 5000 real quadratic prime discriminants [2]. Details of the method of calculation, as well as the class number distribution, are contained in [1].

AUTHOR'S SUMMARY

1. R. B. LAKEIN, "Computation of the ideal class group of certain complex quartic fields," *Math. Comp.*, v. 28, 1974, pp. 839–846.
2. D. SHANKS, UMT 10, *Math. Comp.*, v. 23, 1969, pp. 213–214.

11 [9].—MORRIS NEWMAN, *A Table of the Coefficients of the Modular Invariant* $j(\tau)$, National Bureau of Standards, Washington, D. C., ms. of 14 pages deposited in the UMT file.

The absolute modular invariant $j(\tau)$, defined by

$$j(\tau) = x^{-1} \prod_{n=1}^{\infty} (1 - x^n)^{-24} \left\{ 1 + 240 \sum_{n=1}^{\infty} \sigma_3(n) x^n \right\}^3$$

$$= \sum_{n=-1}^{\infty} c(n) x^n = x^{-1} + 744 + 196884x + \cdots,$$

where $x = \exp 2\pi i\tau$ and $\sigma_r(n) = \Sigma_{d/n} d^r$, is the Hauptmodul of the classical modular