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