

42 [9].—THOMAS R. PARKIN & DANIEL SHANKS, *Three Tables Concerning the Parity of the Partition Numbers  $p(n)$  for  $n < 2040000$* , Aerospace Corporation, Los Angeles, California, 1967, 398 pages of computer output bound in stiff covers and deposited in the UMT file.

Three tables computed for our paper [1] are here deposited in the UMT file. Table 1 (238 pages) extends the octal number  $m/2$  of [1, Table 1] to  $n = 2039999$  and thereby contains the parity of  $p(n)$  to that limit in  $n$ .

Table 2 (56 pages) includes Tables 2 and 4 of [1] and lists the octuple counts from 0 to  $n$  with

$$n = r \cdot 10^s - 1$$

for  $r = 1(1)9$ ,  $s = 1(1)4$  and  $r = 1(1)20$ ,  $s = 5$ . As described in [1], the  $k$ -tuple counts,  $k = 2(1)7$ , can be determined from these.

Table 3 (104 pages) concerns the equinumerosity of odd and even  $p(n)$ . It has finer detail than the Table 7 of [1] in that it lists every  $n = 1000(1000)2040000$  together with every  $n$  where "Odds" = "Evens". It also includes  $\max|\text{Odds-Evens}|$  in each interval here.

D. S.

1. THOMAS R. PARKIN & DANIEL SHANKS, "On the distribution of parity in the partition function," *Math. Comp.*, v. 21, 1967, pp. 466–480.

43 [9].—L. PINZUR, *Tables of Dedekind Sums*, Department of Math., University of Illinois, Urbana, Ill., 1975, 527 computer sheets deposited in the UMT file.

If  $x$  is any real number, put

$$((x)) = \begin{cases} 0, & x \text{ an integer,} \\ x - [x] - \frac{1}{2}, & \text{otherwise.} \end{cases}$$

The ordinary Dedekind sum is defined for any integer  $h$  and any positive integer  $k$  by

$$s(h, k) = \sum_{n \bmod k} ((n/k))((nh/k)).$$

It is easily shown [1] that

- (a)  $s(qh, qk) = s(h, k)$ , for all positive integers  $q$ ,
- (b)  $s(-h, k) = -s(h, k)$ ,
- (c)  $s(h_1, k) = s(h_2, k)$ , whenever  $h_1 \equiv h_2 \pmod k$ .

Hence, for a given positive integer  $k$ , it is only necessary to compute  $s(h, k)$  for those  $h$  such that

$$(1) \quad 1 \leq h \leq k/2, \quad (h, k) = 1.$$

The value of  $s(h, k)$  is a rational number whose denominator (when in lowest terms) divides  $6k$  [1]. The table consists of the integers  $6k s(h, k)$  for  $k = 3(1)1000$ . The computation was done by repeated use of the following reciprocity relation for the Dedekind sums:

$$s(h, k) + s(k, h) = -\frac{1}{4} + \frac{1}{12} \left( \frac{h}{k} + \frac{k}{h} + \frac{1}{hk} \right).$$

This relation and properties (b) and (c) above reduce the given Dedekind sum to an expression involving a new Dedekind sum with a smaller second variable. This process continues until the second variable equals 1 or 2, at which point it stops since  $s(h, 1) = s(h, 2) = 0$  for all positive integers  $h$ . For a given integer  $k$ , this algorithm takes  $O(\log k)$  steps.