Table 2 $F(s) = \exp(-\sqrt{s})$

N	$\|E_N\|$ ESTIMATED BY EQUATION (22)	$\|$TOTAL ERROR$\|$
2	0·190	0·190
4	0·0712	0·0712
6	0·0465	0·0465
8	0·0323	0·0323
10	0·0125	0·0125
12	0·00923	0·00925
13	0·00783	0·00909
14	0·0526	0·0586
15	0·0543	0·0611

Table 3 $F(s) = \exp(-\sqrt{s})$

		TOTAL ERROR		
t	$f(t)$	$N = 5$	$N = 13$	$N = 15$
0	0	0·3	0·07	0·4
0·1	0·73	0·05	0·02	0·07
0·2	0·90	0·03	0·008	0·08
0·3	0·75	0·04	0·008	0·06
0·5	0·48	0·002	0·001	0·06
1·0	0·22	0·002	0·001	0·03

number of decimals in the arithmetic. Tables 2 and 3 demonstrate this, and show the futility of increasing N beyond 13, without making a corresponding increase in the number of decimals of the arithmetic.

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Book review

Internal Sorting Methods Illustrated with PL/I Programs, by Robert P. Rich, 1972; 154 pages. (*Englewood Cliffs, N.J.: Prentice-Hall*, £4·20)

This book describes a wide variety of internal sorting methods. For each one a PL/I procedure and timing details are given. The conclusion reached is that Hoare's Quicksort is the best, and the book culminates in a set of compile-time procedures which, by means of the pre-processing facilities in PL/I, will produce a tailor-made sorting procedure. Almost a third of the book is taken up with a bibliography on sorting.

The format of the book deserves comment. The type face is unrelieved lineprinter (upper and lower case), which at first glance is eye-catching and after several pages is eye-scratching. At this price one expects something better. The sections are serially numbered, although hierarchically intended. One must count the spaces of indentation to verify that section 46 is a subsection of 37, whereas 47 (and 37) are subsections of 11.

However, the book certainly gathers together in one place a wealth of information. It is a pity that some common synonyms are not mentioned ('ripple' for bubble sort, and 'list processing' or 'monkey puzzle' for ancestral sort). Although each PL/I procedure is given the number of records as a parameter, those procedures which need extra storage inevitably reserve enough for 10,000 records. The reason for this may be to obtain more accurate timings, but no reason is given. No use is made of the list processing facilities of PL/I, nor of recursion where the method is essentially recursive. Perhaps the overheads of recursion in PL/I are too frightening?

One of the book's worst faults is that it never mentions the extent to which various sorting methods are data sensitive. For instance, bubble sort is said to be 'only of historical and pedagogical interest' since it is order n^2. However, if the input items are almost in order, it can approach order n.

In short, this is a useful book for those who will not be misled by its shortcomings.

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