

The algorithm has been carefully motivated, introduced, analyzed, and discussed, with a great number of proven results and valuable observations about its performance. Thus the volume is a valuable contribution towards the goal of designing efficient software which generates realistic strict error bounds in conjunction with a stepwise approximate solution of a first-order system of ordinary differential equations.

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4[10A40, 10A25, 10-04].—H. J. J. TE RIELE, *Table of 1870 New Amicable Pairs Generated from 1575 Mother Pairs*, Report NN 27/82, Mathematical Centre, Amsterdam, Oct. 1982, 43 pages.

This is ref. [8] of te Riele's paper [1]. There he gives methods of deriving new amicable pairs ("daughters") from known pairs ("mothers"). Table 1 lists the "1575 mother amicable pairs" taken mostly from Lee and Madachy and from Woods (see the paper). L & M included *every* amicable whose smaller member is less than 10^8 . The first mother listed here, not in L & M, is mother #266 with smaller member 176632390. Some of the daughters are known pairs but most of them, namely 1782, are new. And 88 more "granddaughters" are also listed. Since there are more daughters than mothers, this gives a heuristic argument for the existence of infinitely many amicable pairs.

Table 2a lists the number of new daughters for each of the corresponding mothers. Mother #1398 has 85 daughters! Table 2b lists the 1782 new daughters and Table 3b lists the 88 new granddaughters (that he computed).

The smallest new daughter is the pair 114944072, 125269528 arising from the proud mother #37. This daughter would come between pairs 243 and 244 in L & M.

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1. HERMAN J. J. TE RIELE, "On generating new amicable pairs from given amicable pairs," *Math. Comp.*, v. 42, 1984, pp. 219-223.