binomial in these tables is the multiplicative order of the companion matrix of $B(x)$.

The tables correspond, respectively, to the following sets of values of q, d, and d_1:

$q = 2^2, d = 16, d_1 = 15$	$q = 5, d = 21, d_1 = 11$
$q = 2^3, d = 8$	$q = 5^2, d = 10$
$q = 2^4, d = 6$	$q = 7, d = 10 = d_1$
$q = 2^5, d = 4$	$q = 11, d = 10, d_1 = 8$
$q = 3, d = 26, d_1 = 15$	$q = 13, d = 10$
$q = 3^2, d = 9$	$q = 17, d = 10$
	$q = 19, d = 10.$

The representation for $GF(p^\alpha)$, $\alpha \geqslant 1$, is that discussed in [1] and used previously in [2], [3], and [4]. In the introduction to the present tables the authors prove that a prime binomial of degree $n \geqslant 2$ is not primitive of the first, second, or third kind [1].

J. W. W.

1. J. T. B. BEARD, JR., "Computing in GF(q)," *Math. Comp.*, v. 28, 1974, pp. 1159–1166.

2. J. T. B. BEARD, JR. & K. I. WEST, "Some primitive polynomials of the third kind," *Math. Comp.*, v, 28, 1974, pp. 1166–1167.

3. J. T. B. BEARD, JR. & K. I. WEST, "Factorization tables for $x^n - 1$ over GF(q)," *Math. Comp.*, v. 28, 1974, pp. 1167–1168.

4. J. T. B. BEARD, JR. & K. I. WEST, "Factorization tables for trinomials over GF(q)," *Math. Comp.*, v. 30, 1976, pp. 179–183.

26 [2.05, 2.10, 3.00, 4.00, 5.00, 6.15].—D. A. H. JACOBS, Editor, *The State of the Art in Numerical Analysis,* Academic Press, London, 1977, xix + 978 pp., 23 cm. Price $39.00.

This volume is based on material presented at a conference held at the University of York in the spring of 1976. The topics surveyed are: linear algebra, error analysis, optimization and non-linear systems, ordinary differential equations and quadrature, approximation theory, parabolic and hyperbolic problems, elliptic problems, and integral equations. In all there are twenty-three authors each contributing a section of one of the above-mentioned chapters.

J. B.

27 [2.00].—J. DESCLOUX & J. MARTI, Editors, *Numerical Analysis,* Proceedings of the Colloquium on Numerical Analysis, International Series of Numerical Mathematics, Birkhäuser Verlag, Basel, Switzerland, 1977, 248 pp., 24 cm. Price approximately $22.00.

This volume contains papers presented at a meeting organized by the editors. This meeting took place at Lausanne, Switzerland, October 11–13, 1976.

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28 [10.35].—DAN ZWILLINGER, *Magic Labellings,* Massachusetts Institute of Technology, Cambridge, Massachusetts, 1977, iii + 81 pages of computer output filed in stiff covers and deposited in the UMT file.

These are not the β-valuations of Rosa [4] (graceful numberings of Golomb [1]) nor the magic configurations of Murty [3]. They are closer to, but not identical with, the magic labellings of Stanley [5], [6], [7].

Page i defines a magic labelling as an assignment of integers to the edges of a tree, so that the sum of the labels on edges incident with a given node is at most ["is equal to" in Stanley] N. The number of such labellings is a polynomial in N. Associated with each polynomial is the generating function

$$g(x) = (1 - x)^{1+\deg[f]} \sum_{J=0}^{\infty} f(J)x^J.$$

Pages ii and iii are unacknowledged copies of [2].

Pages 1–81 list all trees on at most 10 points, with the polynomial and generating function for each. The computations were done by MACSYMA at M.I.T.

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1. S. W. GOLOMB, "How to number a graph," in R. C. Read, *Graph Theory and Computing*, Academic Press, New York, 1972, pp. 23–37.

2. FRANK HARARY, *Graph Theory*, Addison-Wesley, Reading, Mass., 1969, pp. 233–234.

3. U. S. R. MURTY, "How many magic configurations are there?," *Amer. Math. Monthly*, v. 78, 1971, pp. 1000–1002.

4. A. ROSA, "On certain valuations of the vertices of a graph," *Théorie des Graphes*, Dunod, Paris, 1967, pp. 349–355.

5. RICHARD P. STANLEY, "Ordered structures and partitions," *Mem. Amer. Math. Soc.*, no. 119, 1972.

6. RICHARD P. STANLEY, "Linear homogeneous diophantine equations and magic labellings of graphs," *Duke Math. J.*, v. 40, 1973, pp. 607–632.

7. RICHARD P. STANLEY, "Magic labellings of graphs, symmetric magic squares, systems of parameters and Cohen-Macaulay rings," *Duke Math. J.*, v. 43 1976, pp. 511–531.

29 [9].—ROBERT BAILLIE, *Solutions of $\varphi(n) = \varphi(n + 1)$ for Euler's Function*, University of Illinois, Urbana, Illinois, 1978, eleven computer output sheets deposited in the UMT file.

This is an extension of Baillie's earlier table [1] of the 306 solutions of

$$\varphi(n) = \varphi(n + 1) \tag{1}$$

that have $n \leqslant 10^8$. Here he gives all 85 additional solutions that satisfy $10^8 < n \leqslant 2 \cdot 10^8$. See [1] for more detail. There is now sufficient data here to encourage practitioners of heuristic to attempt a conjecture for the asymptotic number of solutions of (1), having $n \leqslant N$, as $N \longrightarrow \infty$.

No additional example of $\varphi(n) = \varphi(n + 1) = \varphi(n + 2)$ was found. Only one of these 85 solutions has the property that multiplication (mod n) is isomorphic to multiplication (mod $n + 1$) for the $\varphi(n) = \varphi(n + 1)$ residue classes prime to the modulus. This occurs for $n = 184611375$ where both Abelian groups equal $C(2) \times C(2) \times C(60) \times C(378300)$. Such isomorphic multiplication is becoming increasingly rare; frequently, even the 2-ranks of the two groups are unequal. There are only 24 examples for $n \leqslant 2 \cdot 10^8$, (see [1]).

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1. ROBERT BAILLIE, UMT 6, *Math. Comp.*, v. 30, 1976, pp. 189–190.