References

[1] F. Acton. *Numerical Methods That (Usually) Work.* Harper and Row, New York, NY, 1970.

[2] A. V. Aho, J. E. Hopcroft, and J. D. Ullman. *The Design and Analysis of Computer Algorithms.* Addison-Wesley, Reading, MA, 1974.

[3] W. R. Alford, A. Granville, and C. Pomerance. There are infinitely many Carmichael numbers. *Annals of Mathematics (2)*, 139:705–722, 1994.

[4] R. Askey and M. Ismail. *Recurrence Relations, Continued Fractions, and Orthogonal Polynomials.* American Mathematical Society, Providence, RI, 1984.

[5] W. W. Rouse Ball and H. M. S. Coxeter. *Mathematical Recreations and Essays.* Dover Publications, New York, NY, 1987.

[6] È. G. Belaga. Some problems involved in the calculation of polynomials. *Dokl. Akad. Nauk. SSSR*, 123:775–777, 1958.

[7] A. Berman and R. J. Plemmons. *Nonnegative Matrices in the Mathematical Sciences.* SIAM, Philadelphia, PA, 1994.

[8] H. Bernardelli. Population waves. *J. Burma Res. Soc.*, 31:3–18, 1941.

[9] W. Beyer, R. Roof, and D. Williamson. The lattice structure of multiplicative congruential pseudo-random vectors. *Mathematics of Computation*, 25:345–363, 1971.

[10] B. Bollobás. *Random Graphs.* Academic Press, London, 1985.

[11] B. Boncompagni. *Scritti di Leonardo Pisano: mathematico del secolo decimoterzo.* Rome, Italy, 1857–1862.

[12] C. B. Boyer. *A History of Mathematics.* Wiley, New York, NY, 1989.

[13] R. Brent and J. Pollard. Factorization of the eighth Fermat number. *Math. Comp.*, 36:627–630, 1981.

[14] E. F. Brickell. A fast modular multiplication algorithm with applications to two-key cryptography. In *Advances in Cryptology—Proceedings of CRYPTO '82*, pages 51–60. Plenum, 1983.

[15] Brother Alfred Brousseau. The relation of the zeros to periods in the Fibonacci sequence modulo a prime. *American Mathematical Monthly*, 71:897–899, 1964.

[16] Brother Alfred Brousseau. *Introduction to Fibonacci Discovery.* Fibonacci Association, San Jose, CA, 1965.

[17] Brother Alfred Brousseau. *Fibonacci and Related Number Theoretic Tables.* Fibonacci Association, San Jose, CA, 1972.

[18] W. G. Brown. Historical note on a recurrent combinatorial problem. *American Mathematical Monthly*, 72:973–977, 1965.

[19] P. Buneman and L. Levy. The Towers of Hanoi problem. *Information Processing Letters*, 10:243–244, 1980.

[20] R. L. Burden and J. D. Faires. *Numerical Analysis.* Brooks/Cole, Pacific Grove, CA, 2001.

[21] R. M. Capocelli, editor. *Sequences.* Springer-Verlag, New York, NY, 1990.

[22] R. M. Capocelli, G. Cerbone, P. Cull, and J. Holloway. Fibonacci facts and formulas. In *Sequences*, pages 123–137. Springer-Verlag, New York, NY, 1990.

[23] R. M. Capocelli and P. Cull. Rounding the solutions of Fibonacci-like difference equations. *Fibonacci Quarterly*, 41:133–141, 2003.

[24] R. D. Carmichael. On composite numbers P which satisfy the Fermat congruence $a^{P-1} \equiv 1 \pmod{P}$. *Amer. Math. Monthly*, 19:22–27, 1912.

[25] H. Caswell. *Matrix Population Models.* Sinauer Associates, Sunderland, Mass, 2001.

[26] E. Catalan. Note sur une équation aux différence finies. *J. Math. Pures Appl.*, 3:508–516, 1838.

[27] A. Cohn. Über die Anzahl der Wurzeln einer algebraischen Gleichung in einem Kreise. *Mathematische Zeitscrift*, 14:110–148, 1922.

[28] D. Coppersmith and S. Winograd. Matrix multiplication via arithmetic progression. *Journal of Symbolic Computation*, 9:251–280, 1990.

[29] T. Cormen, A. Leiserson, R. Rivest, and C. Stein. *Introduction to Algorithms (second edition)*. McGraw-Hill, Boston, MA, 2001.

[30] R. Crandall and C. Pomerance. *Prime Numbers: A computational approach*. Springer-Verlag, New York, NY, 2001.

[31] P. Cull. The problem of time unit in Leslie's population model. *Bulletin of Mathematical Biology*, 42:719–728, 1980.

[32] P. Cull. Global stability of population models. *Bulletin of Mathematical Biology*, 43:47–58, 1981.

[33] P. Cull. Local and global stability for population models. *Biological Cybernetics*, 54:141–149, 1986.

[34] P. Cull. Local and global stability of discrete one-dimensional population models. In L. M. Ricciardi, editor, *Biomathematics and Related Computational Problems*, pages 271–278. Kluwer, Dordrecht, 1988.

[35] P. Cull. Stability of discrete one-dimensional population models. *Bulletin of Mathematical Biology*, 50(1):67–75, 1988.

[36] P. Cull. Analysis of algorithms. In L. M. Ricciardi, editor, *Lectures in Applied Mathematics and Informatics*, pages 1–61. Manchester University Press, 1990.

[37] P. Cull. Linear fractionals — simple models with chaotic-like behavior. In D. M. Dubois, editor, *Computing Anticipatory Systems: CASYS 2001* , pages 170–181. Conference Proceedings 627, American Institute of Physics, Woodbury, N.Y., 2002.

[38] P. Cull and J. Chaffee. Stability in discrete population models. In D. M. Dubois, editor, *Computing Anticipatory Systems: CASYS'99*, pages 263–275. Conference Proceedings 517, American Institute of Physics, Woodbury, NY, 2000.

[39] P. Cull and J. Chaffee. Stability in simple population models. In *Cybernetics and Systems 2000*, pages 289–294. Austrian Society for Cybernetics Studies, 2000.

[40] P. Cull and J. Holloway. Computing Fibonacci numbers quickly. *Information Processing Letters*, 32:143–149, 1989.

[41] P. Cull and E. F. Ecklund Jr. Towers of Hanoi and analysis of algorithms. *American Mathematical Monthly*, 92(6):407–420, June–July 1985.

[42] P. Cull and A. Vogt. Mathematical analysis of the asymptotic behavior of the Leslie population matrix model. *Bulletin of Mathematical Biology*, 35:645–661, 1973.

[43] P. Cull and A. Vogt. The periodic limit for the Leslie model. *Mathematical Biosciences*, 21:39–54, 1974.

[44] P. Cull and A. Vogt. The period of total population. *Bulletin of Mathematical Biology*, 38:317–319, 1976.

[45] Paul Cull. Stability in one-dimensional models. *Scientiae Mathematicae Japonicae*, 58:349–357, 2003.

[46] G. Dalquist and A. Bjorck. *Numerical Methods.* Prentice-Hall, Englewood Cliffs, NJ, 1974.

[47] J. H. Davenport, Y. Siret, and E. Tournier. *Computer Algebra.* Chapman and Hall, San Diego, CA, 1988.

[48] A. de Moivre. *Miscellanea Analytica.* Londini, excudebant J. Tonson & J. Watts, London, 1730.

[49] R. Descartes. *Discourse on Method.* Penguin, New York, NY, 1968.

[50] R. Descartes. *Meditations.* Penguin, New York, NY, 1968.

[51] R. Devaney. *An Introduction to Chaotic Dynamical Systems.* Benjamin, Redwood City, CA, 1986.

[52] P. Diaconis, M. McGrath, and J. Pitman. Riffle shuffles, cycles, and descents. *Combinatorica*, 15:11–29, 1995.

[53] L. E. Dickson. *Linear Algebraic Groups and an Exposition of Galois Theory.* Dover Publications, New York, NY, 1958.

[54] D. M. Dubois, editor. *Computing Anticipatory Systems: CASYS'99 — Third International Conference* . Conference Proceedings 517, American Institute of Physics, Woodbury, N.Y., 2000.

[55] D. M. Dubois, editor. *Computing Anticipatory Systems: CASYS 2001 — Fifth International Conference* . Conference Proceedings 627, American Institute of Physics, Woodbury, N.Y., 2002.

[56] F. Dyson and H. Falk. Period of a discrete cat mapping. *American Mathematical Monthly*, 99:603–614, 1992.

[57] J. Eichenauer-Hermann. Inversive congruential pseudorandom numbers avoid the planes. *Mathematics of Computation*, 56:297–301, 1991.

[58] S. E. Eldridge and C. D. Walter. Hardware implementation of Montgomery's modular multiplication algorithm. *IEEE Transactions on Computers*, 42:693–699, 1993.

[59] P. Erdős. On almost primes. *American Mathematical Monthly*, 57:404–407, 1950.

[60] L. Euler. *Novi Commentarii Academiae Scientiarum Imperalis Petropolitanae*, 7:13–14, 1758–1759.

[61] L. Euler. *Introduction to Analysis of the Infinite.* Springer-Verlag, New York, NY, 1988. Translated by J. D. Blanton.

[62] W. Feller. *An Introduction to Probability Theory and its Applications.* John Wiley, New York, NY, 1968.

[63] M. E. Fisher, B. S. Goh, and T. L. Vincent. Some stability conditions for discrete-time single species models. *Bulletin of Mathematical Biology*, 41:861–875, 1979.

[64] M. Flahive and H. Niederreiter. On inversive congruential generators for pseudorandon numbers. *Lecture Notes in Pure and Applied Mathematics*, 141:75–80, 1993.

[65] H. Furstenberg. *Recurrence in Ergodic Theory and Combinatorial Number Theory.* Princeton University Press, Princeton, NJ, 1981.

[66] É. Galois. *Oeuvres Mathématiques.* Gauthier-Villars, Paris, France, 1897.

[67] F. R. Gantmacher. *The Theory of Matrices.* Chelsea Publishing Company, New York, NY, 1959.

[68] M. Garey and D. Johnson. *Computers and Intractability: A Guide to the Theory of NP-Completeness.* W. H. Freeman, San Francisco, 1979.

[69] F. Garvin. *The Maple Book.* Chapman and Hall, Boca Raton, FL, 2002.

[70] C. F. Gauss. *Disquisitiones Arithmeticae.* Springer-Verlag, New York, NY, 1986.

[71] B. S. Goh. *Management and Analysis of Biological Populations.* Elsevier, New York, NY, 1979.

[72] R. L. Graham, D. E. Knuth, and O. Patashnik. *Concrete Mathematics: A Foundation for Computer Science.* Addison-Wesley, Reading, MA, 1994.

[73] R. T. Gregory. *Methods and Applications of Error-Free Computation.* Springer-Verlag, New York, NY, 1984.

[74] R. Guy. How to factor a number. *Congressus Numerantium*, 16:49–89, 1976.

[75] M. A. Harrison. *Lectures on Linear Sequential Machines.* Academic Press, New York, NY, 1969.

[76] M. P. Hassel. Density dependence in single species populations. *Journal of Animal Ecology*, 44:283–296, 1974.

[77] R. Herken, editor. *The Universal Turing Machine.* Oxford University Press, Oxford, UK, 1988.

[78] K. Hoffman and R. Kunze. *Linear Algebra (second edition).* Prentice-Hall, Englewood Cliffs, NJ, 1971.

[79] J. L. Holloway. *Algorithms for Computing Fibonacci Numbers Quickly.* MS thesis, Computer Science, Oregon State University, Corvallis, OR, 1989.

[80] C. Hooley. On Artin's conjecture. *J. Reine Angew. Math*, 226:209–220, 1967.

[81] Y. N. Huang. A counterexample for P. Cull's theorem. *Kexue Tongbao*, 31:1002–1003, 1986.

[82] D. Kalman. The generalized Vandermonde matrix. *Mathematics Magazine*, 57:15–21, 1984.

[83] J. Keller. How many shuffles to mix a deck? *SIAM Review*, 37:88–89, 1995.

[84] A. Knight. *Basics of MATLAB and Beyond.* Chapman and Hall, Boca Raton, FL, 2000.

[85] D. Knuth. Big Omicron and Big Omega and Big Theta. *SIGACT News*, 8:18–24, April-June 1976.

[86] D. Knuth. *Selected Articles on Analysis of Algorithms*, pages 35–42. Addison-Wesley, Reading, MA, 2000.

[87] D. Knuth. All questions answered. *Notices of the American Mathematical Society*, 49:318–324, 2002.

[88] D. E. Knuth. *The Art of Computer Programming.* Addison-Wesley, New York, NY, third edition, 1997.

[89] R. J. Kooman. *Convergence Properties of Recurrence Sequences.* Centrum voor Wiskunde en Informatica, Amsterdam, The Netherlands, 1991.

[90] T. Koshy. *Fibonacci and Lucas Numbers.* Wiley-Interscience, New York, NY, 2001.

[91] G. Lamé. Extrait d'une lettre de M. Lamé à M. Liouville sur cette question: un polygone convexe étant donné, de combien de manières peut-on le partager en triangles au moyen de diagonales? *J. Math. Pures Appl.*, 3:505–507, 1838.

[92] J. P. LaSalle. *The Stability of Dynamical Systems.* SIAM, Philadelphia, PA, 1976.

[93] H. Lebesgue. L'oeuvre mathématique de Vandermonde. *L'Enseignement mathématique (2)*, 1:203–223, 1956.

[94] D. H. Lehmer. Mathematical methods in large-scale computing units. In *Proceedings of the Second Symposium on Large-Scale Digital Computing Machinery*, pages 141–146. Harvard University Press, Cambridge, MA, 1951.

[95] P. H. Leslie. On the use of matrices in certain population mathematics. *Biometrika*, 33:183–212, 1945.

[96] H. Levy and F. Lessman. *Finite Difference Equations.* Dover, New York, NY, 1992.

[97] T-Y. Li and J. Yorke. Period three implies chaos. *American Mathematical Monthly*, 82:985–992, 1975.

[98] R. Lidl and H. Niederreiter. *Finite Fields.* Cambridge University Press, Cambridge, England, 1997.

[99] D. Lind and B. Marcus. *An Introduction to Symbolic Dynamics and Coding.* Cambridge University Press, New York, NY, 1995.

[100] E. N. Lorenz. Deterministic non-periodic flows. *J. Atmos. Sci.*, 20:130–141, 1963.

[101] A. J. Lotka. *Elements of Mathematical Biology.* Dover Publications, New York, NY, 1956.

[102] U. Manber. *Introduction to Algorithms: A Creative Approach.* Addison-Wesley, Reading, MA, 1989.

[103] M. Marcus and H. Minc. *A Survey of Matrix Theory and Matrix Inequalities.* Allyn and Bacon, Rockleigh, NJ, 1964.

[104] M. Marden. Much ado about nothing. *American Mathematical Monthly*, 83:788–798, 1976.

[105] M. Marden. *The Geometry of the Zeros of a Polynomial in a Complex Variable.* American Mathematical Society, New York, NY, 1989.

[106] G. Marsaglia. Random numbers fall mainly in the planes. *Proceedings of the National Academy of Sciences, U.S.A.*, 61:25–28, 1968.

[107] G. Marsaglia. The structure of linear congruential sequences. In *Applications of Number Theory to Numerical Analysis*, pages 249–285. Academic Press, New York, NY, 1972.

[108] Y. V. Matiyasevich. *Hilbert's Tenth Problem.* The MIT Press, Cambridge, MA, 1993.

[109] R. M. May. Biological populations with nonoverlapping generations: stable points, stable cycles, and chaos. *Science*, 186:645–647, 1974.

[110] R. M. May. Simple mathematical models with very complicated dynamics. *Nature*, 261:459–467, 1976.

[111] J. McCarthy. The Tower of Stanford (problem 10956). *American Mathematical Monthly*, 111:364–365, 2004.

[112] K. Mehlhorn. *Data Structures and Algorithms.* Springer-Verlag, New York, NY, 1984.

[113] L. M. Milne-Thomson. *The Calculus of Finite Differences.* Macmillan, London, 1933.

[114] L. Monier. Evaluation and comparison of two efficient probabilistic primality testing algorithms. *Theoret. Comput. Science*, 12:97–108, 1980.

[115] P. L. Montgomery. Modular multiplication without trial division. *Mathematics of Computation*, 44:519–522, 1985.

[116] P. A. P. Moran. Some remarks on animal population dynamics. *Biometrics*, 6:250–258, 1950.

[117] T. Muir. *The Theory of Determinants in the Historical Order of Development*, volume 3. Dover Publications, New York, NY, 1960.

[118] H. Neiderreiter. Quasi-Monte Carlo methods and pseudorandom numbers. *Bulletin of the American Mathematical Society*, 84:957–1041, 1978.

[119] H. Niederreiter. *Random Number Generation and Quasi-Monte Carlo Methods*. SIAM, Philadelphia, PA, 1992.

[120] I. Niven. *Diophantine Approximations*. Interscience Publishers, New York, NY, 1963.

[121] I. Niven. Formal power series. *American Mathematical Monthly*, 76:871–889, 1969.

[122] A. Nobile, L. M. Ricciardi, and L. Sacerdote. On Gompertz growth model and related difference equations. *Biological Cybernetics*, 42:221–229, 1982.

[123] V. Ya. Pan. On methods of computing polynomial values. *Russian Mathematical Surveys*, 21:105–137, 1966.

[124] F. Parker. Inverses of Vandermonde matrices. *American Mathematical Monthly*, 71:410–411, 1964.

[125] T. S. Parker and L. Chua. *Practical Numerical Algorithms for Chaotic Systems*. Springer-Verlag, New York, NY, 1989.

[126] C.J. Pennycuick, R.M. Compton, and L. Beckingham. A computer model for simulating the growth of a population, of two interacting populations. *Journal of Theoretical Biology*, 18:316–329, 1968.

[127] P. Petersen. *On computing maximal lattice dimensions of the inversive congruential generator*. MS thesis, Mathematics, Oregon State University, Corvallis, OR, 1998.

[128] J. M. Pollard. A Monte Carlo method for factorization. *BIT*, 15:331–334, 1975.

[129] G. Pólya. *How to Solve It*. Princeton University Press, Princeton, NJ, 1945.

[130] G. Pólya. On picture writing. *American Mathematical Monthly*, 63:689–697, 1956.

[131] W. H. Press. *Numerical Recipes: The Art of Scientific Computing*. Cambridge University Press, New York, NY, 1986.

[132] M. Rabin. Probabilistic algorithm for testing primality. *J. Number Theory*, 12:128–138, 1980.

[133] L. M. Ricciardi, editor. *Biomathematics and Related Computational Problems.* Kluwer, Dordrecht, 1988.

[134] L. M. Ricciardi, editor. *Lectures in Applied Mathematics and Informatics.* Manchester University Press, Manchester, UK, 1990.

[135] W. E. Ricker. Stock and recruitment. *Journal of the Fisheries Research Board of Canada*, 11:559–623, 1954.

[136] R. H. Risch. The problem of integration in finite terms. *Transactions of the American Mathematical Society*, 139:167–189, 1969.

[137] R. L. Rivest, A. Shamir, and L. M. Adelman. A method for obtaining digital signatures and public-key cryptosystems. *Communications of the ACM*, 21:145–152, 1978.

[138] H. Rogers. *Theory of Recursive Functions and Effective Computability.* McGraw-Hill, New York, NY, 1967.

[139] K. H. Rosen. *Elementary Number Theory and its Applications.* Addison-Wesley, Reading, MA, 1993.

[140] G. Rosenkranz. On global stability of discrete population models. *Mathematical Biosciences*, 64:227–231, 1983.

[141] J. J. Rotman. *Advanced Modern Algebra.* Prentice-Hall, Upper Saddle River, NJ, 2002.

[142] D. G. Saari and J. B. Urenko. Newton's method, circle maps, and chaotic motion. *The American Mathematical Monthly*, 91:3–18, 1984.

[143] A. Salomaa. *Automata–theoretic Aspects of Formal Power Series.* Springer-Verlag, New York, NY, 1978.

[144] A. Sarkovskii. Coexistence of cycles of a continuous map of a line to itself. *Ukr. Mat. Z.*, 16:61–71, 1964.

[145] A. Schonhage and V. Strassen. Schnelle Multiplikation grosser Zahlen. *Computing*, 7:281–292, 1971.

[146] E. Seneta. *Non-negative Matrices.* John Wiley & Sons, New York, NY, 1973.

[147] L. Sigler. *Fibonacci's Liber Abaci.* Springer-Verlag, New York, NY, 2002.

[148] D. Singer. Stable orbits and bifurcation of maps of the interval. *SIAM Journal on Applied Mathematics*, 35(2):260–267, Sept. 1978.

[149] D. Smith and M. Latham. *The Geometry of René Descartes.* Open Court Publishing Company, Chicago, IL, 1925.

[150] J. M. Smith. *Mathematical Ideas in Biology.* Cambridge University Press, Cambridge, 1968.

[151] J. M. Smith. *Models in Ecology.* Cambridge University Press, Cambridge, 1974.

[152] R. P. Stanley. Generating functions. In *Studies in Combinatorics*, pages 100–141. Mathematical Association of America, Washington, D.C., 1978.

[153] R. P. Stanley. *Enumerative Combinatorics*, volume 1. Wadsworth & Brooks/Cole, Monterey, CA, 1986.

[154] R. P. Stanley. *Enumerative Combinatorics*, volume 2. Cambridge University Press, New York, NY, 1999.

[155] J. Stoer and R. Bulirsch. *Introduction to Numerical Analysis.* Springer-Verlag, New York, NY, 1993.

[156] V. Strassen. Gaussian elimination is not optimal. *Numer. Math*, 13:354–356, 1969.

[157] A. Tarski. *Logic, Semantics, Metamathematics.* Oxford University Press, Oxford, England, 1956.

[158] R. Taylor and A. Wiles. Modular elliptic curves and Fermat's Last Theorem. *Annals of Mathematics (2)*, 141:443–551, 1995.

[159] A. Tucker. *Applied Combinatorics.* John Wiley, New York, NY, 2002.

[160] J. B. Urenko. Improbability of nonconvergent chaos in Newton's method. *Journal of Mathematical Analysis and Applications*, 117:42–47, 1986.

[161] S. Utida. Population fluctuation, an experimental and theoretical approach. *Cold Spring Harbor Symposium on Quantitative Biology*, 22:139–151, 1957.

[162] A. van der Poorten. *Notes on Fermat's Last Theorem.* John Wiley & Sons, New York, NY, 1996.

[163] J. Vinson. The relation of the period modulo m to the rank of apparition of m in the Fibonacci sequence. *Fibonacci Quarterly*, 1:37–45, 1963.

[164] N. N. Vorobev. *Fibonacci Numbers.* Blaisdell, New York, NY, 1961.

[165] D. D. Wall. Fibonacci series modulo m. *American Mathematical Monthly*, 67:525–532, 1960.

[166] C. D. Walter. Systolic modular multiplication. *IEEE Transactions on Computers*, 42:376–378, 1993.

[167] C. D. Walter. Space/time trade-offs for higher radix modular multiplication using repeated addition. *IEEE Transactions on Computers*, 46:139–141, 1997.

[168] A. Wiles. Ring-theoretic properties of certain Hecke algebras. *Annals of Mathematics (2)*, 141:553–572, 1995.

[169] H. S. Wilf. *generatingfunctionology.* Academic Press, New York, NY, 1990.

[170] J. H. Wilkinson. *The Algebraic Eigenvalue Problem.* Clarendon Press, Oxford, England, 1965.

[171] Jet Wimp. *Computation with Recurrence Relations.* Pitman, Boston, MA, 1984.

[172] N. Wirth. *Algorithms + Data Structures = Programs.* Prentice-Hall, Englewood Cliffs, NJ, 1976.

[173] A. Wiseman and T. P. Wiseman. *De bello Gallico.* English. D.R. Godine, Boston, MA, 1980.

[174] S. Wolfram. *Mathematica.* Addison-Wesley, Redwood City, CA, 1988.

[175] S. Wolfram. *A New Kind of Science.* Wolfram Media, Champaign, IL, 2002.

[176] O. Wyler. On second-order recurrences. *American Mathematical Monthly*, 72:500–506, 1965.

[177] N. Zierler. Linear recurring sequences and error-correcting codes. In *Error-Correcting Codes*, pages 47–59. Wiley, New York, NY, 1968.