

References



- Aczél, J. (1961/1962). Ungleichungen und ihre Verwendung zur elementaren Lösung von Maximum- und Minimumaufgaben, *L'Enseignement Math.* **2**, 214–219.
- Alexanderson, G. (2000). *The Random Walks of George Pólya*, Math. Assoc. America, Washington, D.C.
- Andreescu, T. and Feng, Z. (2000). *Mathematical Olympiads: Problems and Solutions from Around the World*, Mathematical Association of America, Washington, DC.
- Andrica, D. and Badea, C. (1988). Grüss' inequality for positive linear functional, *Period. Math. Hungar.*, **19**, 155–167.
- Artin, E. (1927). Über die Zerlegung definiten Funktionen in Quadrate, *Abh. Math. Sem. Univ. Hamburg*, **5**, 100–115.
- Bak, J. and Newman, D.J. (1997). *Complex Analysis*, 2nd Edition, Springer-Verlag, Berlin.
- Ball, K. (1997). An elementary introduction to modern convex geometry, in *Flavors of Geometry* (S. Levy, ed.), MSRI Publications **31** 1–58, Cambridge University Press, Cambridge, UK.
- Bashmakova, I.G. (1997). *Diophantus and Diophantine Equations* (translated by Abe Shenitzer, originally published by Nauka, Moscow, 1972), Mathematical Association of America, Washington D.C.
- Beckenbach, E.F. and Bellman, R. (1965). *Inequalities* (2nd revised printing), Springer-Verlag, Berlin.
- Bennett, C. and Sharpley, R. (1988). *Interpolation of Operators*, Academic Press, Orlando, FL.
- Bradley, D. (2000). Using integral transforms to estimate higher order derivatives, *Amer. Math. Monthly*, **107**, 923–931.

- Bombieri, E. (1974). *Le grand crible dans la théorie analytique des nombres*, 2nd Edition, *Astérisque*, **18**, Soc. Math. de France, Paris.
- Bouniakowsky, V. (1859). Sur quelques inégalités concernant les intégrales ordinaires et les intégrales aux différences finies. *Mémoires de l'Acad. de St.-Pétersbourg* (ser. 7) 1, No. 9.
- Bullen P.S., Mitrinović, D.S., and Vasić, P.M. (1988). *Means and Their Inequalities*, Reidel Publishers, Boston.
- Burago, Yu. D. and Zalgaller, V.A. (1988). *Geometric Inequalities*, Springer-Verlag, Berlin.
- Bush, L.E. (1957). The William Lowell Putnam Mathematical Competition, *Amer. Math. Monthly*, **64**, 649–654.
- Bushell, P. J. (1994). Shapiro's "Cyclic Sums," *Bulletin of the London Math. Soc.*, **26**, 564–574.
- Buzano, M.L. (1971/1973). Generalizzazione della disegualianza di Cauchy–Schwarz, *Rend. Sem. Mat. Univ. e Politech. Trimo*, **31**, 405–409.
- Cartan, H. (1995). *Elementary Theory of Analytic Functions of One or Several Complex Variables* (translation of *Théorie élémentaire des fonctions analytiques d'une ou plusieurs variable complexes*, Hermann, Paris, 1961) reprinted by Dover Publications, Mineola, New York.
- Carleman, T. (1923). Sur les fonctions quasi-analytiques, in the *Proc. of the 5th Scand. Math. Congress*, 181–196, Helsinki, Finland.
- Carleson, L. (1954). A proof of an inequality of Carleman, *Proc. Amer. Math. Soc.*, **5**, 932–933.
- Cauchy, A. (1821). *Cours d'analyse de l'École Royale Polytechnique, Première Partie. Analyse algébrique*, Debure frères, Paris. (Also in *Oeuvres complètes d'Augustin Cauchy, Série 2, Tome 3*, Gauthier-Villars et Fils, Paris, 1897.)
- Cauchy, A. (1829). *Leçon sur le calcul différentiel, Note sur la détermination approximative des racine d'une équation algébrique ou transcendante*. (Also in *Oeuvres complètes d'Augustin Cauchy (Série 2, Tome 4)*, 573–609, Gauthier-Villars et Fils, Paris, 1897.)
- Chong, K.-M. (1969). An inductive proof of the A.M.–G.M. inequality, *Amer. Math. Monthly*, **83**, 369.
- Chung, F.R.K., Hajela, D., and Seymour, P.D. (1988). Self-organizing sequential search and Hilbert's inequalities, *J. Computing and Systems Science*, **36**, 148–157.

- Clevenson, M.L., and Watkins, W. (1991). Majorization and the Birthday Problem, *Math. Magazine*, **64**, 183–188.
- D’Angelo, J.P. (2002). *Inequalities from Complex Analysis*, Mathematical Association of America, Washington, D.C.
- de Bruijn, N.G. and Wilf, H.S. (1962). On Hilbert’s inequality in n dimensions, *Bull. Amer. Math. Soc.*, **69**, 70–73.
- Davis, P.J. (1989). *The Thread: A Mathematical Yarn*, 2nd Edition, Harcourt, Brace, Javonovich, New York.
- Diaz, J.B. and Metcalf, R.T. (1963). Stronger forms of a class of inequalities of G. Pólya–G. Szegő, and L.V. Kantorovich, *Bulletin of the Amer. Math. Soc.*, **69**, 415–418.
- Diaz, J.B. and Metcalf, R.T. (1966). A complementary triangle inequality in Hilbert and Banach spaces, *Proc. Amer. Math. Soc.*, **17**, 88–97.
- Dragomir, S.S. (2000). On the Cauchy–Buniakowsky–Schwarz inequality for sequences in inner product spaces, *Math. Inequalities Appl.*, **3**, 385–398.
- Dragomir, S.S. (2003). *A Survey on Cauchy–Buniakowsky–Schwarz Type Discrete Inequalities*, School of Computer Science and Mathematics, Victoria University, Melbourne, Australia (monograph preprint).
- Duncan, J. and McGregor, M.A. (2003). Carleman’s inequality, *Amer. Math. Monthly*, **101** 424–431.
- Dubeau, F. (1990). Cauchy–Bunyakowski–Schwarz Revisited, *Amer. Math. Monthly*, **97**, 419–421.
- Dunham, W. (1990). *Journey Through Genius: The Great Theorems of Mathematics*, John Wiley and Sons, New York.
- Elliot, E.B. (1926). A simple extension of some recently proved facts as to convergency, *J. London Math. Soc.*, **1**, 93–96.
- Engle, A. (1998). *Problem-Solving Strategies*, Springer-Verlag, Berlin.
- Erdős, P. (1961). Problems and results on the theory of interpolation II, *Acta Math. Acad. Sci. Hungar.*, **12**, 235–244.
- Flor, P. (1965). Über eine Ungleichung von S.S. Wagner, *Elem. Math.*, **20**, 165.
- Fujii, M. and Kubo, F. (1993). Buzano’s inequality and bounds for roots of algebraic equations, *Proc. Amer. Math. Soc.*, **117**, 359–361.
- George, C. (1984). *Exercises in Integration*, Springer-Verlag, New York.
- Grosse-Erdmann, K.-G. (1998). *The Blocking Technique, Weighted Mean*

- Operators, and Hardy's Inequality*, Lecture Notes in Mathematics No. 1679, Springer-Verlag, Berlin.
- Halmos, P.R. and Vaughan, H.E. (1950). The Marriage Problem, *Amer. J. Math.*, **72**, 214–215.
- Hammer, D. and Shen, A. (2002). A Strange Application of Kolmogorov Complexity, Technical Report, Institute of Problems of Information Technology, Moscow, Russia.
- Hardy, G.H. (1920). Note on a theorem of Hilbert, *Math. Zeitschr.*, **6**, 314–317.
- Hardy, G.H. (1925). Notes on some points in the integral calculus (LX), *Messenger of Math.*, **54**, 150–156.
- Hardy, G.H. (1936). A Note on Two Inequalities, *J. London Math. Soc.*, **11**, 167–170.
- Hardy, G.H. and Littlewood, J.E. (1928). Remarks on three recent notes in the Journal, *J. London Math. Soc.*, **3**, 166–169.
- Hardy, G.H., Littlewood, J.E., and Pólya, G. (1928/1929). Some simple inequalities satisfied by convex functions, *Messenger of Math.*, **58**, 145–152.
- Hardy G.H., Littlewood, J.E., and Pólya, G. (1952). *Inequalities*, 2nd Edition, Cambridge University Press, Cambridge, UK.
- Havil, J. (2003). *Gamma: Exploring Euler's Constant*, Princeton University Press, Princeton, NJ.
- Henrici, P. (1961). Two remarks on the Kantorovich inequality, *Amer. Math. Monthly*, **68**, 904–906.
- Hewitt, E. and Stromberg, K. (1969). *Real and Abstract Analysis*, Springer-Verlag, Berlin.
- Hilbert, D. (1888). Über die Darstellung definitiver Formen als Summe von Formenquadraten, *Math. Ann.*, **32**, 342–350. (Also in *Gesammelte Abhandlungen*, Volume 2, 154–161, Springer-Verlag, Berlin, 1933; reprinted by Chelsea Publishing, New York, 1981.)
- Hilbert, D. (1901). Mathematische Probleme, *Arch. Math. Phys.*, **3**, 44–63, 213–237. (Also in *Gesammelte Abhandlungen*, **3**, 290–329, Springer-Verlag, Berlin, 1935; reprinted by Chelsea, New York, 1981; translated by M.W. Newson in *Bull. Amer. Math. Soc.*, 1902, **8**, 427–479.)
- Hölder, O. (1889). Über einen Mittelwerthssatz, *Nachr. Akad. Wiss. Göttingen Math.-Phys. Kl.* 38–47.

- Jensen, J.L.W.V. (1906). Sur les fonctions convexes et les inégalités entre les valeurs moyennes, *Acta Math.*, **30**, 175–193.
- Joag-Dev, K. and Proschan, F. (1992). Birthday problem with unlike probabilities, *Amer. Math. Monthly*, **99**, 10–12.
- Kaijser, J., Persson, L-E., and Örberg, A. (2003). On Carleman’s and Knopp’s inequalities, Technical Report, Department of Mathematics, Uppsala University.
- Kaczmarz, S. and Steinhaus, H. (1951). *Theorie der Orthogonalreihen*, second Edition, Chelsea Publishing, New York (1st Edition, Warsaw, 1935).
- Kedlaya, K. (1999). $A < B$ (A is less than B), manuscript based on notes for the Math Olympiad Program, MIT, Cambridge MA.
- Komlós, J. and Simomovits, M. (1996). Szemerédi’s regularity lemma and its applications in graph theory, in *Combinatorics, Paul Erdős is Eighty*, Vol. II (D. Miklós, V.T. Sos, and T. Szőnyi, eds.), 295–352, János Bolyai Mathematical Society, Budapest.
- Knuth, D. (1969). *The Art of Computer Programming: Seminumerical Algorithms, Vol. 2*, Addison Wesley, Menlo Park, CA.
- Knopp, K. (1928). Über Reihen mit positive Gliedern, *J. London Math. Soc.*, **3**, 205–211.
- Lagrange, J. (1773). Solutions analytiques de quelques problèmes sur les pyramides triangulaires, *Acad. Sci. Berlin*.
- Landau, E. (1907). Über einen Konvergenzsatz, *Göttinger Nachrichten*, 25–27.
- Landau, E. (1909). *Handbuch der Lehre von der Verteilung der Primzahlen*, Leipzig, Germany. (Reprinted 1953, Chelsea, New York).
- Lee, H. (2002). Note on Muirhead’s Theorem, Technical Report, Department of Mathematics, Kwangwoon University, Seoul, Korea.
- Littlewood, J.E. (1988). *Littlewood’s Miscellany* (B. Bollobás, ed.), Cambridge University Press, Cambridge, UK.
- Lovász, L. and Plummer M.D. (1986). *Matching Theory*, North-Holland Mathematics Studies, Annals of Discrete Mathematics, vol. 29, Elsevier Science Publishers, Amsterdam, and Akadémiai Kiadó, Budapest.
- Lozansky, E. and Rousseau, C. (1996). *Winning Solutions*, Springer-Verlag, Berlin.
- Love, E.R. (1991). Inequalities related to Carleman’s inequality, in *In-*

- equalities: Fifty Years on from Hardy, Littlewood, and Pólya* (W.N. Everitt, ed.), Chapter 8, Marcel Dekker, New York.
- Lyusternik, L.A. (1966). *Convex Figures and Polyhedra* (translated from the 1st Russian edition, 1956, by D.L. Barnett), D.C. Heath and Company, Boston.
- Macdonald, I.G. (1995). *Symmetric Functions and Hall Polynomials*, 2nd Edition, Clarendon Press, Oxford.
- Maclaurin, C. (1729). A second letter to Martin Folkes, Esq.; concerning the roots of equations, with the demonstration of other rules in algebra, *Phil. Transactions*, **36**, 59–96.
- Magiropoulos, M. and Karayannakis, D. (2002). A “Double” Cauchy–Schwarz type inequality, Technical Report, Technical and Educational Institute of Crete, Heraklion, Greece.
- Maligranda, L. (1998). Why Hölder’s inequality should be called Rogers’ inequality, *Mathematical Inequalities and Applications*, **1**, 69–83.
- Maligranda, L. (2000). Equivalence of the Hölder–Rogers and Minkowski inequalities, *Mathematical Inequalities and Applications*, **4**, 203–207.
- Maligranda, L. and Persson, L.E (1992). On Clarkson’s inequalities and interpolation, *Math. Nachr.*, **155**, 187–197.
- Maligranda, L. and Persson, L.E (1993). Inequalities and Interpolation, *Collect. Math.*, **44**, 181–199.
- Maor, E. (1998). *Trigonometric Delights*, Princeton University Press, Princeton, NJ.
- Matoušek, J. (1999). *Geometric Discrepancy — An Illustrated Guide*, Springer-Verlag, Berlin.
- Mazur, M. (2002). Problem Number 10944, *Amer. Math. Monthly*, **109**, 475.
- McConnell, T.R. (2001). An inequality related to the birthday problem. Technical Report, Department of Mathematics, University of Syracuse.
- Menchoff, D. (1923). Sur les séries de fonctions orthogonales (première partie), *Fundamenta Mathematicae*, **4**, 82–105.
- Mignotte, M. and Ştefănescu, S. (1999). *Polynomials: An Algorithmic Approach*, Springer-Verlag, Berlin.
- Mingzhe, G. and Bichen, Y. (1998). On the extended Hilbert’s inequality, *Proc. Amer. Math. Soc.*, **126**, 751–759.
- Mitrinović, D.S. and Vasić, P.M. (1974). History, variations and gener-

- alizations of the Čebyšev inequality and the question of some priorities, *Univ. Beograd Publ. Electrotehn. Fak. Ser. Mat. Fiz.*, **461**, 1–30.
- Mitrinović, D.S. (with Vasić, P.M.) (1970). *Analytic Inequalities*, Springer-Verlag, Berlin.
- Montgomery, H.L. (1994). *Ten Lectures on the Interface Between Analytic Number Theory and Harmonic Analysis*, CBMS Regional Conference Number 84, Conference Board of the Mathematical Sciences, American Mathematical Society, Providence, RI.
- Motzkin, T.S. (1967). The arithmetic-geometric inequality, in *Inequalities* (O. Shisha, ed.), 483–489, Academic Press, Boston.
- Nakhash, A. (2003). Solution of a Problem 10940 proposed by Y. Nivergelt, *Amer. Math. Monthly*, **110**, 546–547.
- Needham, T. (1997). *Visual Complex Analysis*, Oxford University Press, Oxford, UK.
- Nesbitt, A.M. (1903). Problem 15114, *Educational Times*, **2**, 37–38.
- Niculescu, C.P. (2000). A new look at Newton's inequalities, *J. Inequalities in Pure and Appl. Math.*, **1**, 1–14.
- Niven, I. and Zuckerman, H.S. (1951). On the definition of normal numbers, *Pacific J. Math.*, **1**, 103–109.
- Nivergelt, Y. (2002). Problem 10940 The complex geometric mean, *Amer. Math. Monthly*, **109**, 393.
- Norris, N. (1935). Inequalities among averages, *Ann. Math. Statistics*, **6**, 27–29.
- Oleszkiewicz, K. (1993). An elementary proof of Hilbert's inequality, *Amer. Math. Monthly*, **100**, 276–280.
- Olkin, I. and Marshall, A.W. (1979). *Inequalities: Theory of Majorization and Its Applications*, Academic Press, New York.
- Opic, B. and Kufner, A. (1990). *Hardy-Type Inequalities*, Longman-Harlow, New York.
- Petrovitch, M. (1917). Module d'une somme, *L'Enseignement Math.*, **19**, 53–56.
- Pečarić, J.E., Proschan, F., and Tong, Y.L. (1992). *Convex Functions, Partial Orderings, and Statistical Applications*, Academic Press, New York.
- Pečarić, J.E. and Stolarsky, K.B. (2001). Carleman's inequality: history and new generalizations, *Aequationes Math.*, **61**, 49–62.

- Pitman, J. (1997). *Probability*, Springer-Verlag, Berlin.
- Pólya, G. (1926). Proof of an inequality, *Proc. London Math. Soc.*, **24**, 57.
- Pólya, G. (1949). With, or without, motivation, *Amer. Math. Monthly*, **56**, 684–691, 1949.
- Pólya, G. (1950). On the harmonic mean of two numbers, *Amer. Math. Monthly*, **57**, 26–28.
- Pólya, G. and Szegő, G. (1954). *Aufgaben und Lehrsätze aus der Analysis, Vol. I*, 2nd edition, Springer-Verlag, Berlin.
- Polya, G. (1957). *How to Solve It*, 2nd edition, Princeton University Press, Princeton, NJ.
- Prestel, A. and Delzell, C.N. (2001). *Positive Polynomials: From Hilbert's 17th Problem to Real Algebra*, Springer-Verlag, Berlin.
- Rademacher, H. (1922). Einige Sätze über Reihen von allgemeinen Orthogonalfunktionen, *Math. Annalen*, **87**, 112–138.
- Rajwade, A.R. (1993). *Squares*, London Mathematical Lecture Series, **171**, Cambridge University Press, Cambridge, UK.
- Richberg, R. (1993). Hardy's inequality for geometric series (solution of a problem by Walther Janous), *Amer. Math. Monthly*, **100**, 592–593.
- Riesz, F. (1909). Sur les suites de fonctions mesurables, *C. R. Acad. Sci. Paris*, **148**, 1303–1305.
- Riesz, F. (1910). Untersuchungen über Systeme integrierbare Funktionen, *Math. Annalen*, **69**, 449–497.
- Riesz, M. (1927). Sur les maxima des formes bilinéaires et sur les fonctionnelles linéaires, *Acta Math.*, **49**, 465–487.
- Roberts, A.W. and Varberg, D.E. (1973). *Convex Functions*, Academic Press, New York.
- Rogers, L.J. (1888). An extension of a certain theorem in inequalities, *Messenger of Math.*, **17**, 145–150.
- Rosset, S. (1989). Normalized symmetric functions, Newton's inequalities, and a new set of stronger inequalities, *Amer. Math. Monthly*, **96**, 815–819.
- Rudin, W. (1987). *Real and Complex Analysis*, 3rd edition, McGraw-Hill, Boston.
- Rudin, W. (2000). Sums of Squares of Polynomials, *Amer. Math. Monthly*, **107**, 813–821.

- Schur, I. (1911). Bemerkungen zur Theorie der beschränkten Bilinearformen mit unendlich vielen Veränderlichen, *J. Mathematik*, **140**, 1–28.
- Schneider, R. (1993). *Convex Bodies: The Brunn-Minkowski Theory*, Cambridge University Press, Cambridge, UK.
- Schwarz, H.A. (1885). Über ein die Flächen kleinsten Flächeninhalts betreffendes Problem der Variationsrechnung. *Acta Soc. Scient. Fenn.*, **15**, 315–362.
- Shklarsky, D.O., Chentzov, N.N., and Yaglom, I.M. (1993). *The USSR Olympiad Problem Book: Selected Problems and Theorems of Elementary Mathematics*, Dover Publications, Mineola, N.Y.
- Sigillito, V.G. (1968). An application of Schwarz inequality, *Amer. Math. Monthly*, **75**, 656–658.
- Shparlinski, I.E. (2002). Exponential Sums in Coding Theory, Cryptology, and Algorithms, in *Coding Theory and Cryptology* (H. Niederreiter, ed.), Lecture Notes Series, Institute for Mathematical Sciences, National University of Singapore, Vol. I., World Scientific Publishing, Singapore.
- Siegel, C.L. (1989). *Lectures on the Geometry of Numbers* (Notes by B. Friedman rewritten by K. Chandrasekharan with assistance of R. Suter), Springer-Verlag, Berlin.
- Steiger, W. L. (1969). On a generalization of the Cauchy–Schwarz inequality, *Amer. Math. Monthly*, **76**, 815–816.
- Szegő, G. (1914). Lösung eine Aufgabe von G. Pólya, *Archiv für Mathematik u. Physik*, Ser. 3, **22**, 361–362.
- Székeley, G.J., editor (1996). *Contests in Higher Mathematics: Miklós Schweitzer Competition 1962–1991*, Springer-Verlag, Berlin.
- Tiskin, A. (2002). A generalization of the Cauchy and Loomis–Whitney inequalities, Technical Report, Oxford University Computing Laboratory, Oxford, UK.
- Toeplitz, O. (1910). Zur Theorie der quadratischen Formen von unendliche vielen Veränderlichen, *Göttinger Nach.*, 489–506.
- Treibergs, A. (2002). Inequalities that Imply the Isoperimetric Inequality, Technical Report, Department of Mathematics, University of Utah.
- van Dam, E.R. (1998). A Cauchy–Khinchin matrix inequality, *Linear Algebra and its Applications*, **280**, 163–172.
- van Lint, J.H. and Wilson, R.M. (1992). *A Course in Combinatorics*, Cambridge University Press, Cambridge, UK.

- Vince, A. (1990). A rearrangement inequality and the permutahedron, *Amer. Math. Monthly*, **97**, 319–323.
- Wagner, S.S. (1965). Untitled, *Notices Amer. Math. Soc.*, **12**, 20.
- Waterhouse, W. (1983). Do symmetric problems have symmetric solutions? *Amer. Math. Monthly*, **90**, 378–387.
- Weyl, H. (1909). Über die Konvergenz von Reihen, die nach Orthogonalfunktionen fortschreiten, *Math. Ann.*, **67**, 225–245.
- Weyl, H. (1916). Über die Gleichverteilung von Zahlen mod Eins, *Math. Ann.*, **77**, 312–352.
- Weyl, H. (1949). Almost periodic invariant vector sets in a metric vector space, *Amer. J. Math.*, **71**, 178–205.
- Wilf, H.S. (1963). Some applications of the inequality of arithmetic and geometric means to polynomial equations, *Proc. Amer. Math. Soc.*, **14**, 263–265.
- Wilf, H.S. (1970). *Finite Sections of Some Classical Inequalities*, Ergebnisse der Mathematik und ihrer Grenzgebiete, **52**, Springer-Verlag, Berlin.
- Zukav, G. (1979). *The Dancing Wu Li Masters: An Overview of the New Physics*, William Morrow and Company, New York.
- van der Corput, J.G. (1931). Diophantische Ungleichungen I. Zur Gleichverteilung Modulo Eins, *Acta Math.*, **56**, 373–456.
- Vinogradov, I.M. (1954). *Elements of Number Theory* (translated by Saul Kravetz from the 5th revised Russian edition, 1949), Dover Publications, New York.