1970-2012 TOPIC INDEX

for

The College Mathematics Journal

(including the ***Two Year College Mathematics Journal***)

prepared by

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Each item in this index is listed under the topics for which it might be used in the classroom or for enrichment after the topic has been presented. Within each topic entries are listed in chronological order of publication. Each entry is given in the form:

Title, author, volume:issue, year, page range, [C or F], [other topic cross-listings]

where C indicates a classroom capsule or short note and F indicates a Fallacies, Flaws and Flimflam note. If there is nothing in this position the entry refers to an article unless it is a book review.

The topic headings in this index are numbered and grouped as follows:

0 Precalculus Mathematics (also see 9)
- 0.1 Arithmetic (also see 9.3)
- 0.2 Algebra
- 0.3 Synthetic geometry
- 0.4 Analytic geometry
- 0.5 Conic sections
- 0.6 Trigonometry (also see 5.3)
- 0.7 Elementary theory of equations
- 0.8 Business mathematics
- 0.9 Techniques of proof (including mathematical induction
- 0.10 Software for precalculus mathematics

1 Mathematics Education
- 1.1 Teaching techniques and research reports
- 1.2 Courses and programs

2 History of Mathematics
- 2.1 History of mathematics before 1400
- 2.2 History of mathematics after 1400
- 2.3 Interviews

3 Discrete Mathematics
- 3.1 Graph theory

- 3.2 Combinatorics
- 3.3 Other topics in discrete mathematics (also see 6.3)
- 3.4 Software for discrete mathematics

4 Linear Algebra
- 4.1 Matrices, systems of linear equations, and matrix algebra
- 4.2 Determinants (also see 5.5)
- 4.3 Vector spaces and inner product spaces (also see 5.5)
- 4.4 Linear transformations
- 4.5 Eigenvalues and eigenvectors
- 4.6 Numerical methods of linear algebra
- 4.7 Other topics in linear algebra
- 4.8 Software for linear algebra

5 Calculus
- 5.1 Limits and differentiation
  - 5.1.1 Limits (including l'Hopital's rule)
  - 5.1.2 The derivative and mean value theorems
  - 5.1.3 Tangents, differentials, and differentiation
  - 5.1.4 Maxima and minima
  - 5.1.5 Graphs of functions
- 5.2 Integration
  - 5.2.1 Definition of integrals and the fundamental theorem
  - 5.2.2 Numerical integration
  - 5.2.3 Change of varible (substitution)
  - 5.2.4 Partial fraction decomposition
  - 5.2.5 Integration by parts
  - 5.2.6 Area
  - 5.2.7 Volume
  - 5.2.8 Arc length
  - 5.2.9 Other theory and applications of integration
  - 5.2.10 Improper integrals
- 5.3 Elementary and special functions
  - 5.3.1 Inverse trigonometric functions
  - 5.3.2 Exponential and logarithmic functions
  - 5.3.3 Hyperbolic functions and their inverses
  - 5.3.4 Special functions
- 5.4 Sequences and series
  - 5.4.1 Sequences
  - 5.4.2 Numerical series (convergence tests and summation)
  - 5.4.3 Taylor polynomials and power series
- 5.5 Vector algebra and geometry (and 3x3 determinants)

5.6 Curves and surfaces
5.6.1 Parametric and polar curves
5.6.2 Surfaces and coordinate systems in space

5.7 Multivariable calculus
5.7.1 Multivariable differential calculus
5.7.2 Multiple integrals
5.7.3 Line and surface integrals and vector analysis

5.8 Software for calculus

6 Differential Equations and Dynamical Systems
6.1 First order equations
6.2 Higher order linear equations and linear systems
6.3 Difference equations, dynamical systems, and fractals
6.4 Nonlinear differential equations
6.5 Numerical methods for differential equations
6.6 Other topics in differential equations
6.7 Software for differential equations and dynamical systems

7 Probability and Statistics
7.1 Games of chance (also see 9.2)
7.2 Probability
7.3 Statistics (also see 9.10)
7.4 Software for probability and statistics

8 Computer Science
8.1 Programming and algorithms
8.2 Data structures
8.3 Computer graphics
8.4 Other topics in computer science

9 Other Topics
9.1 Set theory and logic (also see 0.9)
9.2 Recreational mathematics (also see 7.1)
9.3 Number theory (also see 0.1)
9.4 Abstract algebra
9.5 Analysis
9.6 Numerical analysis
9.7 Modern and non-Euclidean geometry
9.8 Topology and differential geometry
9.9 Operations research, including linear programming
9.10 Mathematical modelling and simulation
9.11 Software for advanced topics

10 Book Reviews

1970 – 2012 Topic Index
for the *College Mathematics Journal*

0 Precalculus Mathematics (also see 9)

0.1 Arithmetic (also see 9.3)

Remedial or Developmental? Confusion over Terms, Don Ross, 1:2, 1970, 27-31, 1.2
Two-Pan Weighings, Chris Burditt, 3:2, 1972, 80-81, C
Cyclically Permuted Code: A Variation on Binary Arithmetic, J. Maurice Kingston, 5:1, 1974, 29-36
Computation of Repeating Decimals, James E. McKenna, 7:2, 1976, 55-58
Smith Numbers, A. Wilansky, 13:1, 1982, 21, 9.3
Cryptology: From Ceasar Ciphers to Public-Key Cryptosystems, Dennis Luciano and Gordon Prichett, 18:1, 1987, 2-17, 7.2, 9.3
What's Significant about a Digit?, David A. Smith, 20:2, 1989, 136-139, C, 9.6
FFF #85. Unto Everyone That Hath Shall Be Given, John W. Kenelly, 26:1, 1995, 36, F
Number Words in English, Steven Schwartzman, 26:3, 1995, 191-195
The Mathematical Judge: A Fable, William G. Frederick and James R. Hersberger, 26:5, 1995, 377-381, 1.1
The Square of Any Odd Number is the Difference Between Two Triangular Numbers (Proof Without Words), Roger B. Nelsen, 27:2, 1996, 118, C, 9.3
Fractions with Cycling Digit Patterns, Dan Kalman, 27:2, 1996, 109-115, 9.3
FFF #112. United in Purpose, Bruce Yoshiwara, 28:2, 1997, 119, F
FFF #121. A Case of Black and White - But Not So Much Black, Peter Rosenthal, 28:5, 1997, 377, F
FFF #125. Effects of Changing Temperature, Dave Trautman, 29:1, 1998, 35, F
More Coconuts, Sidney H. Kung, 29:4, 1998, 312-313, C, 9.3
FFF #138. Fifty per cent more for fifty per cent less, Norton Starr, 30:1, 1999, 39-40, F
Interval Arithmetic and Analysis, James Case, 30:2, 1999, 106-111, 9.5
FFF #140. Whose Real World?, Elizabeth Berman Appelbaum, 30:2, 1999, 130, F
FFF #144. Spoiled for Choice, Norton Starr, 30:3, 1999, 210, F, 3.2
Saving Digits, Mark McKinzie, 31:2, 2000, 146, C
FFF #167. Double from nothing, Richard Askey, 32:1, 2001, 48, F
FFF #173. Loss of face, R. Askey, 32:1, 2001, 50-51, F
Word Problems, Lawrence Braden, 32:1, 2001, 70-71, C
Miscellanea: The Doctor and the Mathematician, Edwin Rosenberg, 32:4, 2001, 318, C
Powers Made Easy, James Kirby, 32:5, 2001, 329, C, 9.3
FFF #191. Syllabus Innumeracy and the Easy A, Charles Redmond, 33:2, 2002, 138-139, F
FFF #192. Addition by juxtaposition, Brendan Kelly, 33:3, 2002, 226, F
FFF #193. Slide into poverty, by student, 33:3, 2002, 226-227, F
FFF #194. Hitting the sales, the editor, 33:3, 2002, 227, F
Musharraf Exposed, Margaux Marie Siegel, 33:3, 2002, 229, C
Introducing Binary and Ternary Codes via Weighings, James Tanton, 33:4, 2002, 313-314, C, 3.2
Adding Fractions, Dan Kalman, 34:1, 2003, 41, C, 5.1.2
A large square consisting only of digits 7, 8 and 9, Hisanori Mishima, 34:4, 2003, 303, C, 9.3
FFF #219. A faulty test question, Joseph G. R. Martinez, 35:1, 2004, 41-42, F
A Generalized Magic Trick from Fibonacci: Designer Decimals, Mrjorie Bicknell-Johnson, 35:2, 2004, 125-126, C, 9.5
Linearizing Mile Run Times, Garrett I. Ash, J. Marshall Ash, and Stefan Catoiu, 35:5, 2004, 370-374, 9.2
FFF #231. Solar Power, Ed Dubinsky, 36:1, 2005, 49-50, F
How Many Checks?, Ted Ridgway, 36:2, 2005, 113, C

FFF #234. A multiplicity of multiplications, Hyman Bass, 36:2, 2005, 141, F (see also Shirley B. Gray, 37:3, 2006, 214-215, F and Yves Nievergelt, 39:2, 2008, 137-138, F)
Federal Money, Joseph Crukshank, 36:3, 2005, 208, C
FFF #242. Lighter than air, Marie S. Wilcox, 36:4, 2005, 316-317, F
Wrong, Wrong, and Wrong: Math Guides Are Recalled, *New York Times*, 36:5, 2005, 362, C
Where are the missing "8-terms"?, Johann Hoehn and Larry Hoehn, 37:1, 2006, 68, C
Watch Your Units!, Stan Wagon, 37:2, 2006, C
Teaching Tip: How large is n!?, Leonard J. Lipkin, 37:2, 2006, 109, C
Alligation, Joseph Crukshank, 37:2, 2006, 113, C
FFF #251. Hot stuff in Canada, Neal Madras, 27:2, 2006, 123, F
FFF #254. Computing the cost of a fence, Johnny Lott and Georgia Cobbs, 37:4, 2006, 291, F
Bad Ad Arithmetic, Stan Lipovetsky, 37:5, 2006, 363, C
FFF #262. Attributed to Vladimir Putin, Andre Toom, 38:1, 2007, 44, F
Freaky fractions, Rick Kreminsky, 38:1, 2007, 46, C, 9.3
Misusing "percent", Ted Ridgway, 38:2, 2007, 95, C
Kong size percent, Art Friedel, 38:2, 2007, 123, C
Was He Serious?, Julian Fleron, 38:2, 2007, 130, C
Literate maybe, but numerate?, Alfinio Flores, 38:4, 2007, 277, C
Compound Addition, Joseph Crukshank, 38:5, 2007, 377 and 387, C
Remainder Wheels and Group Theory, Lawrence Brenton, 39:2, 2008, 129-135, 9.3, 9.4
It Was Only a Sign Error, David Cox, 39:2, 2008, 135, C
One-Upmanship in Creating Designer Decimals, James Smoak, 39:3, 2008, 211, C
Missteps in Mathematics Books, Jerome Dancis, 39:5, 2008, 280-382, F, 0.2
Proof Without Words: Powers of Two, James Tanton, 40:2, 2009, 86, C, 5.4.2
Three Poems, Caleb Emmons, 40:3, 2009, 188, 9.2
Family Occasion, Ian Stewart, 40:3, 2009, 203, C
Teaching Tip: Accepting that .999… = 1, David W. Cohen and James M. Henle, 40:4, 2009, 258, C
Brown Sharpie: .999… = 1 (Cartoon), Courtney Gibbars, 40:4, 2009, 262, C
Fallacies, Flaws and FlimFlam: What's *Your* Version of Two-Thirds?, Mary Ann Bragg, 40:5, 2009, 343, C
341 is a Brilliant Number, P. D. James, 40:5, 2009, 368, C, 9.3
Visualizing Elections using Saari Triangles, Mariah Birgen, 41:4, 2010, 325-328, 0.3, 3.3
A Talmudic Fair-Division Problem, Theodore Hill, 41:4, 2010, 338, C, 3.3
A Pumping Lemma for Invalid Reductions of Fractions, Michael N. Fried and Mayer Goldberg, 41:5, 2010, 357-364, 9.3
The Rascal Triangle, Alif Anggoro, Eddy Liu, and Angus Tulloch, 41:5, 2010, 393-395, 3.2
Sum-Difference Numbers, Yixun Shi, 41:5, 2010, 404-405, C, 9.3
Flaws, Fallacies, and Flimflam: Who's Right?, Fred Graf, Megan McArdle, and Ed Barbeau, 42:1, 2011, 55, C
Flaws, Fallicies, and Flimflam: What Day Is It?, Allen Schwenk, 42:3, 2011, 205, F (see also 5. The International Dateline, 42:5, 2011, 430-431)
Minuend & Subtrahend, Merriam-Webster Dictionary, 42:4, 2011, 316, C
Student Research Project: Making Change Efficiently, Jack E. Graver, 42:4, 2011, 317-322, 3.2, 5.1.4, 9.9
Just Take the Limit!, Jody Picoult, 42:5, 2011, 431, C, 0.8, 9.10
A Numerical Challenge, Robert Wainright, 43:1, 2012, 19, 63, C
Triangular Numbers, Gaussian Integers, and KenKen, John J. Watkins, 43:1, 2012, 37-42, 9.2, 9.3
Carryless Arithmetic Mod 10, David Applegate, Marc LeBrun, and N. J. A. Sloane, 43:1, 2012, 43-50, 5.4.1, 9.2, 9.4
Squaring, Cubing, and Cube Rooting, Arthur T. Benjamin, 43:1, 2012, 58-63, 0.2, 9.2

0.2 Algebra

Mathematics, A Solitary Game, Olof Hanner, 1:2, 1970, 5-16, 4.1
Gog and Gug, Howard W. Eves, 1:1, 1970, 8, C
The Irrationality of Certain Numbers, Peter A. Lindstrom, 1:1, 1970, 30-31, 9.3
A Computer-Oriented Multiplication Algorithm, John Peterson, 1:2, 1970, 106, C
A Geometric Approach to the Orders of Infinity, Harold L. Schoen, 3:2, 1972, 74-76, C, 9.5
Pascal's k-Simplex, Dale Woods and Mary Jane Kohlenberg, 4:3, 1973, 38-43
Teaching Inequalities Involving Absolute Values, Frances W. Lewis, 4:2, 1973, 87-90, C
Maximize x(a-x), L. H. Lange, 5:1, 1974, 22-24, 0.7, 5.1.4
A Geometric Approach to Linear Programming in the Two-Year College, Pat Semmes, 5:1, 1974, 37-40, 9.10
A Further Note on the Orders of Infinity, Harold L. Schoen, 5:1, 1974, 80-81, C, 9.5
Investigations of Linear and Reciprocal Functions by the Line-to-Line Technique, David R. Duncan and Bonnie H. Litwiller, 6:2, 1975, 2-7, 0.7
Distributivity with Respect to All Four Rational Operations, Myles Greene, 6:2, 1975, 10-12
Mathematical Induction: If Student k Understands It, Will Student K + 1?, Judith L. Gersting, 6:2, 1975, 18-20, 0.9
Easter Revisited, Daniel T. Bleck, 6:3, 1975, 38-40
Functional Notation—An Intuitive Approach, Ann D. Holley, 7:3, 1976, 14-15, 1.2
Finding Super Accurate Integers, Pasquale Scopelliti and Herbert Peebles, 7:3, 1976, 52-54, 0.7, 9.6
Mathematics and Computing without Computers, William S. Dorn, 8:2, 1977, 101-105
The Perfect Curve: at Least for Grades, Lawrence Sher, 8:3, 1977, 148-152
Operational and Intuitive Algebra, Betsey Whitman and Donald Cook, 8:3, 1977, 155-161
Stirling's Triangle of the First Kind-Absolute Value Style, Hugh Ouellette and Gordon Bennett, 8:4, 1977, 195-202, 6.3
An Elementary Construction of the Common Log Tables, James H. Jordan, 8:5, 1977, 274-278
Fractions Without Quotients: Arithmetic of Repeating Decimals, Richard Plagge, 9:1, 1978, 11-15
Applicable Mathematics in Two Year Colleges, Ralph Mansfield, 9:3, 1978, 148-153
Completing the Square–A Laboratory Approach, Charles G. Moore, 9:4, 1978, 215-218
Stirling's Numbers of the Second Kind—Programming Pascal's and Stirling's Triangles, Satish K. Janardan and Konanur G. Janardan, 9:4, 1978, 243-248, 6.3
Some Pre-Calculus Algebra, John Staib, 10:2, 1979, 89-95
The Discovery of a Generalization: An Example in Problem Solving, Hugh Ouellette and Gordon Bennett, 10:2, 1979, 100-106, 0.3
Polygonal Roots, Barnabas B. Hughes, 10:5, 1979, 313-318, 0.7
Distance from a Point to a Line, Warren B. Gordon, 10:5, 1979, 348-349, C
A Technique for Determining When a General Quadratic Expression is Factorable, Leo Chosid, 10:5, 1979, 354-355, C, 0.7
Luddhar's Method of Solving a Cubic Equation with a Rational Root, R. S. Luthar, 11:2, 1980, 107-110, 0.7
Computer Solution of Alphametics, Sarah Brooks, 11:2, 1980, 111-114
Why Not Teach Synthetic Multiplication?, Kenneth R. Kundert, 11:2, 1980, 121-122, C
A Precalculus Approximation of n!, Norman Schaumberger, 11:3, 1980, 202-204, C, 5.4.2
An Error-Detecting Check by Substitution, Charles G. Moore, 11:5, 1980, 326-327, C
A "Proof" that M=N, W. Thurmon Whitley, 12:3, 1981, 211, C
Inventor's Paradox, Man-Keung Siu, 12:4, 1981, 267, C
Misguided Mathematical Maxim-Makers, Betsy Darken Smith, 12:5, 1981, 309-316, 1.2
A Classroom Approach to Pythagorean Triples, Norman Schaumberger, 13:1, 1982, 61-62, C
Selection of a Fair Currency Exchange Rate, Allen J. Schwenk, 13:2, 1982, 154-155, C, 0.8

An Alternate Method for Solving Radical Equations, Bill Bompart, 13:3, 1982, 198-199, C
The Thrills of Abstraction, P. R. Halmos, 13:4, 1982, 243, 1.2
Isomorphisms on Magic Squares, Ali R. Amir-Moez, 14:1, 1983, 48-51, 5.4.1, 9.2, 9.3, 9.4
A Logarithm Algorithm for Four-Function Calculators, David Cusick, 14:4, 1983, 322, 5.3.2
The Address Problem, Michael Tennor, 14:5, 1983, 407-414, 9.3
Approximation of Square Roots, Leon Wejntrob, 14:5, 1983, 427-430, 0.7, 9.6
Antisubmarine Warfare: Passive vs. Active Sonar, L. Whitt and K. Wilk, 14:5, 1983, 434-435, C
Is the Venn Diagram Good Enough?, Mou-Liang Kung and George C. Harrison, 15:1, 1984, 48-50, 9.1
A Geometrical Interpretation of the Weighted Mean, Larry Hoehn, 15:2, 1984, 135-139, 0.4, 7.3
On Problems with Solutions Attainable in More Than One Way, Jean Pedersen and George Polya, 15:3, 1984, 218-228, 0.4, 5.4.2
Complex Roots Made Visible, Alec Norton and Benjamin Lotto, 15:3, 1984, 248-249, C, 0.7
Pythagorean Systems of Numbers, Joseph Wiener, 15:4, 1984, 324-326, C, 0.4, 9.3
An Approach to Problem-Solving Using Equivalence Classes Modulo n, James E. Schultz and William F. Burger, 15:5, 1984, 401-405, 9.3
The Factorial Triangle and Polynomial Sequences, Steven Schwartzman, 15:5, 1984, 424-426, C, 5.4.1, 6.3
Right Triangles with Perimeter and Area Equal, William Parsons, 15:5, 1984, 429, C, 0.4
What Do I Know? A Study of Mathematical Self-Awareness, Philip J. Davis, 16:1, 1985, 22-41, 9.3
Nested Polynomials and Efficient Exponential Algorithms for Calculators, Dan Kalman and Warren Page, 16:1, 1985, 57-60, C, 0.7, 9.6
Behold! The Arithmetic-Geometric Mean Inequality, Roland H. Eddy, 16:3, 1985, 208, C, 0.3
Instances of Simpson's Paradox, Thomas R. Knapp, 16:3, 1985, 209-211, C, 7.3
Approximating Solutions for Exponential Equations, Norman Schaumberger, 16:3, 1985, 211-212, C
Graphing the Complex Roots of a Quadratic Equation, Floyd Vest, 16:4, 1985, 257-261, C , 0.7, 9.5
A New Divisibility Algorithm, Joseph Whittaker, 16:4, 1985, 268-276, 9.3
A Discrete Look at 1 + 2 + ... + n, Loren C. Larson, 16:5, 1985, 369-382, 0.9, 3.1, 3.2, 5.4.2, 6.3
Routine Problems, Sherman Stein, 16:5, 1985, 383-385, 5.1.5, 1.2
A Babylonian Geometrical Algebra, James K. Bidwell, 17:1, 1986, 22-31, 0.3
Irrationality Made Easy, Robert Bumcrot, 17:3, 1986, 243-244, C
The Change of Base Formula for Logarithms, Chris Freiling, 17:5, 1986, 413, C, 5.3.2
A Guide to Computer Algebra Systems, John M. Hosack, 17:5, 1986, 434-441, 4.1, 5.1.2, 5.1.5, 5.2.3, 5.2.4, 5.2.5
Behold! The Graphs of f and f inverse are Reflections about the Line y=x, Ayoub B. Ayoub, 18:1, 1987, 52, C, 5.3.2
Powers and Roots by Recursion, Joseph F. Aieta, 18:5, 1987, 411-416, 0.7, 6.3
FFF #1. The Zero Function, Ed Barbeau, 20:1, 1989, 49-50, F (also 20:2, 1989, 133)
FFF #5. A Howler about Products of Logarithms, Ed Barbeau, 20:3, 1989, 226, F (also 20:4, 1989, 318 and 21:3, 1990, 218)
FFF #7. An Exponential Equation, Ed Barbeau, 20:4, 1989, 317, F (also 20:5, 1989, 404)
Quick Function Evaluation, Daniel S. Yates, 21:1, 1990, 51, C, 5.1.5
FFF #25. Solving an Inequality, Ed Barbeau, 21:4, 1990, 303, F
Geometrical and Graphical Solutions of Quadratic Equations, E. John Hornsby, Jr., 21:5, 1990, 362-369, 0.4
China's 1989 National College Entrance Examination, Bart Braden, 21:5, 1990, 390-393, 0.4, 0.6, 1.2
FFF #38. How to Solve a Quadratic Equation, Ed Barbeau, 22:2, 1991, 132, F (also 24:4, 1993, 345 and 25:4, 1994, 310)
FFF #39. The End Justifies the Mean, Ed Barbeau, 22:3, 1991, 220, F
FFF #40. Perron's Paradox, Ed Barbeau, 22:3, 1991, 221, F, 9.1 (also 23:3, 1992, 205 and 24:3, 1993, 231)
FFF #42. A Characterization of Finite Geometric Sequences, Ed Barbeau, 22:3, 1991, 221, F

Positivity from Evaluation of a Single Point, Henry Mark Smith, 22:3, 1991, 230-231, C, 5.1.5
FFF #46. A Straightforward Cancellation, Ed Barbeau, 22:5, 1991, 403-404, F, 3.2
FFF #49. Two Transcendental Equations, Ed Barbeau, 23:1, 1992, 36, F, 5.3.2
FFF #52. An Application of the Cauchy-Schwartz Inequality, Ed Barbeau, 23:2, 1992, 142, F, 9.5
Infinitely Many Different Quartic Polynomial Curves, Nitsa Movshovitz-Hader and Alla Shmukler, 23:3, 1992, 186-195, 0.7
The Joy of Mathematics: A Mary P. Dolciani Lecture, Peter Hilton, 23:4, 1992, 274-281, 1.2
A Serendipitous Application of the Pythagorean Triplets, Susan Forman, 23:4, 1992, 312-314, C, 9.3
Commutativity of Polynomials, Shmuel Avital and Edward Barbeau, 23:5, 1992, 386-395, 6.3, 0.7
FFF. Matrices and the TI-81 Graphics Calculator, Constance J. Gardner, 24:1, 1993, 64, F, 4.1
FFF #58. A Rational Combination of Two Transcendentals, Ed Barbeau, 24:3, 1993, 229, F, 5.3.2
FFF #59. A Formula that Works Only for n=1, Ed Barbeau, 24:3, 1993, 229-230, F, 0.9
FFF #60. A Two-Valued Function, Ed Barbeau, 24:3, 1993, 230, F, 5.3.2
FFF #65. Solving a Cubic, Ed Barbeau, 24:4, 1993, 344, F, 0.7 (also 25:4, 1994, 311)
FFF #67. A Superficial Volume Problem, Randall K. Campbell-Wright, 25:1, 1994, 35, F
FFF #70. Reading a Calculator Display, Sandra Z. Keith, 25:1, 1994, 36, F, 5.1.3
Approaches to the Formula for the nth Fibonacci Number, Russell Jay Hendel, 25:2, 1994, 139-142, C, 4.5, 5.4.2, 9.3, 9.5
Extending Bernoulli's Inequality, Ronald L. Persky, 25:3, 1994, 230, C, 9.5
FFF #84. A Method for Solving a Cubic Equation, Ed Barbeau, 26:1, 1995, 35-36, F, 0.7
FFF #86. Watch Your Ears!, Bruce Yoshiwara, 26:1, 1995, 36, F
FFF #87. Do You Know How to Split the Atom?, Milt Eisner, 26:1, 1995, 37, F
The Product of Four (Positive) Numbers in Arithmetic Progression is Always the Difference of Two Squares (Proof Without Words), Roger B. Nelsen, 26:2, 1995, 131, C
A Geometric Approach to Linear Functions, Jack E. Graver, 26:5, 1995, 389-394, C, 0.4, 6.3
FFF #97. A Surd Equation, Ed Barbeau, 27:1, 1996, 45, F (see also 27:3, 1996, 204-205)
FFF #105. The Remainder Theorem, Richard Laatsch, 27:4, 1996, 282, F, 9.4
FFF #113. The Disappearing Solution, Ed Barbeau, 28:2, 1997, 120, F (see also 30:1, 1999, 40-43, 30:2, 1999, 132, 30:4, 1999, 307)
FFF #120. A Quick (?) Proof of Irrationality, Richard Askey, 28:4, 1997, 286, F
Visualizing the Complex Roots of Quadratics (Proof Without Words), Shaun Pieper, 28:5, 1997, 359, C, 0.7
FFF #124. The Number of Tickets Sold, Robert W. Vallin, 29:1, 1998, 34-35, F
FFF. Distributing Addition over Multiplication, S. R. S. Sastry, 29:3, 1998, 221, F
FFF #136. Surprising Symmetry, David Wells, 29:5, 1998, 407, F
FFF #137. Drenching a sphere, David Cantrell, 30:1, 1999, 39, F
Multiplying and Dividing Polynomials Using Geloxia, Jeff Suzuki, 30:1, 1999, 50-53, C
The Trinomial Triangle, James Chappell and Thomas Osler, 30:2, 1999, 141-142, C, 3.2
An Identity for n(n+1)(n+2)(n+3)+1, Alfinio Flores, 30:3, 1999, 247, C
FFF #148. An exponential mess, Eric Chander, 30:4, 1999, 306, F
FFF. Mathematical oxymorons, Richard Francis, 30:4, 1999, 308, F
Things I Have Learned at the AP Reading, Dan Kennedy, 30:5, 1999, 346-355, 5.1.1, 5.1.2, 5.2.1, 5.2.6, 5.4.2, 6.1
a^2+b^2 ≥ 2ab (Mathematics Without Words), Alfinio Flores, 31:2, 2000, 106, C
FFF #156. An Imaginary Absolute Value?, Peter M. Jarvis and Paul S. Shuette, 31:3, 2000, 207, F
Binomials to Binomials, Thomas Osler, 31:3, 2000, 211-212, C, 6.3
Colin Maclaurin's Quaint Word Problems, Bruce Hedman, 31:4, 2000, 286-289
Tangents without Calculus, Jorge Aarao, 31:5, 2000, 406-407, C, 0.7, 5.1.3
a^3 + b^3 >= a^2*b + ab^2 (Mathematics Without Words), Norman Schaumberger, 32:1, 2001, 38, C
FFF #169. Strengthening a theorem on linear fractional transformations, Peter M. Jarvis, 32:1, 2001, 49, F

Linear Relations Between Powers of Terms in Arithmetic Progression, Calvin Long and Boyd Henry, 32:2, 2001, 135-137, C, 3.2
Factoring Quadratics, Stephen Kaczkowski, 32:3, 2001, 203-204, C
There Are No New Word Problems, Charles Marion, 32:3, 2001, 238-239, C
Another Look at Factoring Polynomials, Scott J. Beslin and Douglas J. Baney, 32:4, 2001, 273-275, 9.4
FFF #181. Finding Asymptotes, Carl Libis, 32:5, 2001, 366, F, 5.1.5
FFF #183. Dimensions of a yard, a student, 33:1, 2002, 39, F
FFF #186. The illegal moves method for quadratics, John C. and Holly M. Hoover, 33:1, 2002, 40, F
FFF #187. Cancelling exponents, Ross Honsberger, 33:1, 2002, 41, F
Solutions to x+y=xy (Mathematics Without Words), Roger Nelsen, 33:2, 2002, 130, C, 0.6
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Sums of Roots and Poles of Rational Functions, Paul Deiermann, 33:2, 2002, 148-149, C
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The Roots of a Quadratic, Leonard Gillman, 33:3, 2002, 237-238, C, 0.7
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The Exponential Formula, the Editor, 33:4, 2002, 349, C
Lewis Carroll's Amazing Number-Guessing Game, Richard F. McCoart, 33:5, 2002, 378-383, 9.2
Quadratic and Exponential Formulas, David Marcus, 34:1, 2003, 49, C
FFF #201. Solution of a rational equation, Carl Libis, 34:1, 2003, 50-51, F
FFF #203. Toothpicks, Elaine Simmt, 34:1, 2003, 52, F
FFF. Factoring quadratics, Ed Barbeau, 34:1, 2003, 53, F
Keyboard Inequalities, Monte Zerger, 34:1, 2003, 67, C, 9.5
How (Not) to Solve Quadratic Equations, Yves Nievergelt, 34:2, 2003, 90-104, 9.6
Clarifying Compositions with Cobwebs, Nial Neger and Michael Frame, 34:3, 2003, 196-204, 6.3
FFF #210. Summing squares by averages, Shailesh Shirali, 34:3, 2003, 224, F
FFF #211. A surd equation, Carl Libis, 34:3, 2003, 225, F
FFF #212. ab^k = (ab)^k, Carl Libis and Parviz Khalili, 34:3, 2003, 225, F
For What Functions Is $f^{-1}(x) = 1/f(x)$?, Sharon MacKendrick, 34:4, 2003, 304-311, 9.5
The Band Around a (non)Convex Set, Jack Stewart and Annalisa Crannell, 34:5, 2003, 377-379, 0.7, 9.4
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Finding the Tangent to a Conic Section Without Calculus, Sidney H. Kung, 34:5, 2003, 394-395, C, 5.1.3
An Inverse, Ted Ridgway, 35:2, 2004, 104, C
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The root mean square of a and b (Mathematics Without Words), Ruma Falk, 35:3, 2004, 170, C
FFF #224. The square root of -1 is real, Teik-Cheng Lim, 35:3, 2004, 214, F
FFF #225. Extraneous roots, Ed Barbeau, 35:3, 2004, 214-215, F
FFF #227. Who needs exponents?, Carl Libis, 35:4, 2004, 297-298, F
Algebra in Respiratory Care, David F. Snyder, 35:4, 2004, 300-302, C, 9.10
Introducing the Sums of Powers, Jeff A. Suzuki, 35:4, 2004, 303-304, C
FFF #228. An exponential equation, Ed Barbeau, 35:5, 2004, 382, F, 5.3.2
Discovering Roots: Ancient, Medieval, and Serendipitous, Bryan Dorner, 36:1, 2005, 35-43, 2.1, 4.5, 9.3
A Perplexing Polynomial Puzzle, I. B. Keene, 36:2, 2005, 100, C
FFF #235. A lot of values, Ed Barbeau, 36:2, 2005, 141-142, F
Roots of Integers, Revisited, Andrea Rothbart, 36:4, 2005, 317, C (see also 36:1, 56)
Truck Drivers, a Straw, and Two Glasses of Water, Kevin Iga and Kendra Kilpatrick, 37:2, 2006, 82-92, 6.3
FFF. BEDMAS, Jack Weiner, 37:2, 2006, 123-124, F

FFF #258. Right on target!, Larry Braden, 37:5, 2006, 381-383, F
FFF #260. Increasing a square to a square, Chris Fisher, 38:1, 2007, 43, F, 9.3
FFF #263. Reciprocating for success, M. A. Khan, 38:2, 2007, 131-132, F
Quirky Quadratics, Christopher S. Withers and Saralees Nadarajah, 38:3, 2007, 178, C, 0.7
Teaching Tip: A Function is a Bow, Salvatore Anastasio, 38:3, 2007, 184, C
FFF #266. The escaped criminal, Ed Barbeau, 38:3, 2007, 218, F
FFF #268. An algebra problem, anonymous, 38:3, 2007, 220, F
FFF. An "Artifice" of Hall and Knight, John Webb, 38:4, 2007, 297-299, F
FFF #269. "Very funny, Peter", Ed Barbeau, 38:5, 2007, 375, F
FFF #275. More striking results, Peter Schumer and Michael A. Jones, 39:1, 2008, 50, F, 5.1.1
Quote: Math as Metaphor, Ayaan Hirsi Ali, 39:4, 2008, 300, C
Missteps in Mathematics Books, Jerome Dancis, 39:5, 2008, 280-382, F, 0.1
FFF #287. Logging the solutions of an equation, Ed Barbeau, 39:5, 2008, 383-384, F, 5.3.2
Sam Loyd's Courier Problem with Diophantus, Pythagoras, and Martin Gardner, Owen O'Shea, 39:5, 2008, 387-391, C, 0.7, 9.2
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Squaring, Cubing, and Cube Rooting, Arthur T. Benjamin, 43:1, 2012, 58-63, 0.1, 9.2
Teaching Tip: How to Manipulate Test Scores, Colin Foster, 34:2, 2012, 121-122, C, 1.1
Proof Without Words: The Square of a Balancing Number is a Triangular Number, Michael A. Jones, 43:3, 2012, 212, C, 9.3
Teaching Tip: When does $f(g(x)) = x$ imply $g(f(x)) = x$?, Li Zhou, 43:4, 2012, 290, C
Teaching Tip: Are You Changing the Rules? Again?, Theodore Rice, 43:4, 2012, 304, C
On the Steiner Minimizing Point and the Corresponding Algebraic System, Ioannis M. Roussos, 43:4, 2012, 305-308, 0.3
Proof Without Words: Partial Sums of an Arithmetic Sequence, Anthony J. Crachiola, 43:4, 2012, 321, C
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0.3 Synthetic geometry

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Trisection of an Angle in an Infinite Number of Steps, Eric Kincanon, 21:5, 1990, 393, C
FFF #27. Trisecting an Angle with Ruler and Compasses, Ed Barbeau, 21:5, 1990, 394-395, F (also 22:1, 1991, 41 and 23:2, 1992, 143)

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FFF. The Spirit Is Willing But the Ham Is Rotten, John Kinloch and Rick Norwood, 26:1, 1995, 37, F
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FFF #89. A Case of Irregularity, Herb Bailey, 26:3, 1995, 221-222, F (see also 27:4, 1996, 284)
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Prelude to Musical Geometry, Brian J. McCartin, 29:5, 1998, 354-370, 9.4, 9.7
FFF #139. A Counterexample to Morley's Theorem, William Watkins, 30:2, 1999, 129, F
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A Simple Geometric Solution to De l'Hospital's Pulley Problem, Raymond Boute, 30:4, 1999, 311-314, C, 0.6
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On Lunda-Designs and the Construction of Associated Magic Squares of Order 4p, Paulus Gerdes, 31:3, 2000, 182-188, 9.2
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Barrow's Fundamental Theorem, Jack Wagner, 32:1, 2001, 58-59, C, 5.2.1
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A New Method of Trisection, David Alan Brooks, 38:2, 2007, 78-81
Rectangles, Parallelograms, or Trapezoids, Richard Syverson, 38:2, 2007, 81, 105, C (see also 38:4, 2007, 259)
An Iterative Angle Trisection, Donald L. Muench, 38:2, 2007, 82-84
A New and Improved Method for Finding the Center of Gravity of a Quadrilateral, Behzad Khorshidi, 38:3, 2007, 225-226, C
Christiaan Huygens and the Problem of the Hanging Chain, John Bukowski, 39:1, 2008, 2-11, 2.2, 5.3.3
The *Right* Right Triangle on the Sphere, William Dickinson and Mohammad Salmassi, 39:1, 2008, 24-33, 9.7
Universal Stoppers Are Rupert, Richard P. Jerrard and John E. Wetzel, 39:2, 2008, 90-94, 9.7
Proof Without Words: Carnot's Theorem for Acute Triangles, Claudi Alsina and Roger B. Nelsen, 39:2, 2008, 111, C, 9.7
The Perimeter of a Polyomino and the Surface Area of a Polycube, Wiley Williams and Charles Thompson, 39:3, 2008, 233-237, C, 9.7
Designing a Table Both Swinging and Stable, Greg N. Frederickson, 39:4, 2008, 258-266, 9.7
Factoring Heron, Vaughan Pratt, 40:1, 2009, 15-16
Diametric Quadrilaterals with Two Equal Sides, Raymond A. Beauregard, 40:1, 2009, 17-21, 0.4
Proving that Three Lines Are Concurrent, Daniel Maxin, 40:2, 2009, 128-130, C, 9.7
Pompeiu's Theorem Revisited, Arpad Benyi and Ioan Casu, 40:4, 2009, 252-258, 9.7
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When Are Two Figures Congruent?, John E. Wetzel, 41:3, 2010, 193-196, 9.7
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Visualizing Elections using Saari Triangles, Mariah Birgen, 41:4, 2010, 325-328, 0.1, 3.3
How Bound Tetrahedron Wraps a Real Tetrahedron, Roger Berry, 41:5, 2010, 356, C, 9.2
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Generalized Parabolas, Dan Joseph, Gregory Hartman, and Caleb Gibson, 42:4, 2011, 275-282, 0.5, 5.6.1, 5.7.3, 9.8 (see also 43:5, 429)
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Hexaflexagons, Martin Gardner, 43:1, 2012, 2-5, 3.2, 9.2, 9.4, 9.8
The V-flex, Triangle Orientation, and Catalan Numbers in Hexaflexagons, Ionut E. Iacob, Bruce McLean, and Hua Wang, 43:1, 2012, 6-10, 3.1, 3.2, 9.2, 5.4.1, 9.8
From Hexaflexagons to Edge Flexagons to Point Flexagons, Les Pook, 43:1, 2012, 11-14, 3.1, 9.2, 9.4, 9.8
Bracing Regular Polygons As We Race into the Future, Greg N. Frederickson, 43:1, 2012, 51-57, 9.2
A Platonic Sextet for Strings, Karl Schaffer, 3:1, 2012, 64-69, 3.1, 9.2
Polyomino Dissections, Tiina Hohn and Andy Liu, 43:1, 2012, 88-94, 9.2
Rediscovering Pascal's Mystic Hexagon, Michael Augros, 43:3, 2012, 194-202, 9.7
Proof Without Words: The Pythagorean Theorem with Equilateral Triangles, Claudi Alsina and Roger B. Nelsen, 43:3, 2012, 226, C
Viete's Product Proved in the Finest Ancient Style, Oscar Ciaurri, Emilio Fernandez, Rodolfo Larrea, and Luz Roncal, 43:4, 2012, 291-296
On the Steiner Minimizing Point and the Corresponding Algebraic System, Ioannis M. Roussos, 43:4, 2012, 305-308, 0.2
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A Different Angle on Perspective, Marc Frantz, 43:5, 2012, 354-360, 9.7
Proof Without Words: Ptolemy's Theorem, William Derrick and James Hirstein, 43:5, 2012, 386, C

0.4 Analytic geometry

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Geometric Parametrization of Pythagorean Triples, Alvin Tirman, 17:2, 1986, 168, C
Three Ways to Maximize the Area of an Inscribed Quadrilateral, Leroy F. Meyers, 17:3, 1986, 238-239, 5.5
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Behold! The Pythagorean Theorem via Mean Proportions, Michael Hardy, 17:5, 1986, 422, C
Drawing the Line Segment Connecting Two Points, Harley Flanders, 18:1, 1987, 53-57, 3.3, 8.1
Heron's Area Formula, Roger C. Alperin, 18:2, 1987, 137-138, C
Equiangular Lattice Polygons and Semiregular Lattice Polyhedra, Paul R. Scott, 18:4, 1987, 300-306
A Rational Approach to Lattice Polygons, Warren Page, 18:4, 1987, 316-317, C
Some Properties of Polygons Inside a Circle, Larry Hoehn, 18:5, 1987, 397-401
Newton's nth Root Method Without Derivatives, David A. Smith, 18:5, 1987, 403-406, C, 0.7
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Pythagorean Theorem: aa' + bb' = cc', Enzo R. Gentile, 20:1, 1989, 58, C
FFF #3. Tangency by Double Roots, Ed Barbeau, 20:2, 1989, 132, F (also 20:3, 1989, 227)
To View an Ellipse in Perspective, Charles G. Moore, 20:2, 1989, 134-136, C, 0.5
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Super Bat Meets the Word Problem, Dave Logothetti, 10:5, 1979, 371

Geometry is Alive and Well: The Coxeter Symposium in Toronto, Jean J. Pedersen, 11:1, 1980, 19-25, 0.3
Applications of Intermediate Algebra: A Possible Alternative, J. Michael Shaughnessy, 11:2, 1980, 94-101
Math Anxiety: Some Suggested Causes and Cures: Part 1, Peter Hilton, 11:3, 1980, 174-188
Math Anxiety: Sume Suggested Causes and Cures: Part 2, Peter Hilton, 11:4, 1980, 246-251
Mathematics by Fiat?, Philip J. Davis, 11:4, 1980, 255-263
Fixed Point Iteration—An Interesting Way to Begin a Calculus Course, Thomas Butts, 12:1, 1981, 2-7, 5.1.1, 9.6
Mathematical Proof: What It Is and What It Ought to Be, Peter Renz, 12:2, 1981, 83-103
A Digression on Proof, Yu I. Manin, 12:2, 1981, 104-107
The Nature of Proof: Limits and Opportunities, Kenneth Appel and Wolfgang Haken, 12:2, 1981, 118-119
Computer Use to Computer Proof: A Rational Reconstruction, Thomas Tymoczko, 12:2, 1981, 120-125
Teachers, Clocks, and Students, Sherman K. Stein, 12:3, 1981, 195-198
Shouldn't We Teach GEOMETRY?, Branko Grunbaum, 12:4, 1981, 232-237
The Thrills of Abstraction, P. R. Halmos, 13:4, 1982, 243-251, 0.2
A First Course in Continuous Simulation, Richard Bronson, 13:5, 1982, 300-310, 9.10
Imbedding the Metric, John D. Neff, 14:3, 1983, 197-202
Toward a Common Understanding of the Content of College Preparatory Mathematics, Joan R. Leitzel, 14:3, 1983, 206-209
Nonnumeric Computer Applications to Algebra, Trigonometry, and Calculus, David R. Stoutemyer, 14:3, 1983, 233-239
SSD Persistence: A Mathematical System for Student Investigation, John Scheding, 14:4, 1983, 309-312, 9.3
Integrating Writing into the Mathematics Curriculum, Dorothy Goldberg, 14:5, 1983, 421-424
Zork, RAMS and the Curse of Ra: Computo, ergo sum, Curt Suplee, 15:2, 1984, 158-159
Will Discrete Mathematics Surpass Calculus in Importance?, Anthony Ralston, 15:5, 1984, 371-373
Responses to: Will Discrete Mathematics Surpass Calculus, Saunders MacLane and Daniel H. Wagner and Peter J. Hilton and R. L. Woodriff and Daniel J. Kleitman and Peter D. Lax, 15:5, 1984, 373-380
The Introductory Mathematics Curriculum: Misleading, Outdated, and Unfair, Fred Roberts, 15:5, 1984, 383-385
Responses to the Introductory Mathematics Curriculum, William F. Lucas and R. W. Hamming and David Tall and Robert E. Davis and Wade Ellis, Jr. and Patrick Thompson and John Mason and Richard K. Guy, 15:5, 1984, 386-397
FORUM: The Algorithmic Way of Life is Best, Stephen B. Maurer, 16:1, 1985, 2-5
Responses to the FORUM on the Algorithmic Way of Life, R. G. Douglas and Bernhard Korte and Peter Hilton and Peter Renz and Craig Smorynski and J. M. Hammersley and P. R. Halmos, 16:1, 1985, 5-21
Testing Understanding and Understanding Testing, Jean Pedersen and Peter Ross, 16:3, 1985, 178-185, 0.2, 5.1.2, 5.2.2
Routine Problems, Sherman Stein, 16:5, 1985, 383-385, 0.2, 5.1.5
Interactive Graphics for Multivariable Calculus, Michael E. Frantz, 17:2, 1986, 172-181, 5.1.1, 5.1.4, 5.7.1
A Mathematics Software Database, R. S. Cunningham and David Smith, 17:3, 1986, 255-266
Computer Algebra Systems in Undergraduate Mathematics, Don Small, John Hosack and Kenneth Lane, 17:5, 1986, 423-433, 5.1.4, 5.1.5, 5.2.2, 5.4.2
Should Mathematicians Teach Statistics?, David S. Moore, 19:1, 1988, 3-7, 7.3
Should Mathematicians Teach Statistics (2)?, A. Blanton Godfrey, 19:1, 1988, 8-11, 7.3
No! But Who Should Teach Statistics?, Judith Tanur, 19:1, 1988, 11-12, 7.3
Statistics Teachers need Experience With Data, R. Gnanadesikan and J. R. Kettenring, 19:1, 1988, 12-14, 7.3
The Mathematicians' Statistics Has a Subsidiary Role, Barbara A. Bailar, 19:1, 1988, 14-15, 7.3
Growth and Advances in Statistics, Frederick Mosteller, 19:1, 1988, 15-16, 7.3
Statistician, Examine Thyself: Response, Gudmund R. Iversen, 19:1, 1988, 16-18, 7.3

It's Not "By Whom" But Rather "How", John E. Freund, 19:1, 1988, 18-19, 7.3
The Need for Good Teaching of Statistics, Henry L. Alder, 19:1, 1988, 20-21, 7.3
Let the Experts Teach and Judge, David L. Hanson, 19:1, 1988, 21-24, 7.3
Who Teaches What to Whom?, Michael Reed, 19:1, 1988, 24-26, 7.3
What Should the Introductory Statistics Course Contain?, Gerald J. Hahn, 19:1, 1988, 26-30, 7.3
Mathematics is Only One Tool that Statisticians Use, Ronald D. Snee, 19:1, 1988, 30-32, 7.3
Reaction to Responses to "Should Mathematicians Teach Statistics?", David S. Moore, 19:1, 1988, 32-35, 7.3
Readers' Responses to the January 1988 Forum: "Should Mathematicians Teach Statistics?", Joseph B. Kadane and William A. Golomsky and Daniel A. Sankowsky and Benjamin M. Perles, 19:2, 1988, 164-165, 7.3
A Computer in the Classroom: The Time is Right, David P. Kraines and David A. Smith, 19:3, 1988, 261-267
Teaching with CAL: A Mathematics Teaching and Learning Environment, James E. White, 19:5, 1988, 424-443, 5.1.5
The Simplex Method of Linear Programming on Microcomputer Spreadsheets, Frank S. T. Hsiao, 20:3, 1989, 153-160, 9.9
Copyright Law As It Applies to Computer Software, Michael Gemignani, 20:4, 1989, 332-338
Learning Mathematics Through Writing: Some Guidelines, J. J. Price, 20:5, 1989, 393-401
Notational Collisions, J. Hillel, 20:5, 1989, 418-422, C, 4.1
Graphing with the HP-28S, John Selden and Annie Selden, 20:5, 1989, 423-432, 5.1.5
Sum the Alternating Harmonic Series, Dave P. Kraines and Vivian Y. Kraines and David A. Smith, 20:5, 1989, 433-435, C, 5.4.2
Taylor Polynomials, David P. Kraines and Vivian Y. Kraines and David A. Smith, 20:5, 1989, 435-436, C, 5.4.2
Calculus Quiz, David P. Kraines and Vivian Y. Kraines and David A. Smith, 20:5, 1989, 437-438, C, 5.1.5
What's an Assignment Like You Doing in a Course Like This? Writing to Learn Mathematics, George D. Gopen and David A. Smith, 21:1, 1990, 2-19
Let's Teach Philosophy of Mathematics!, Reuben Hersh, 21:2, 1990, 105-111
Proofs by -Tion, John S. Robertson, 21:3, 1990, 220-222, C
Student Research Projects: Self-esteem in Mathematics, Herbert S. Wilf, 21:4, 1990, 274-277, 9.3
Recruitment and Retention of Students in Undergraduate Mathematics, Miriam P. Cooney and Jacqueline M. Dewar and Patricia Clark Kenschaft and Vivian Kraines and Brenda Latka and Barbara LiSanti, 21:4, 1990, 294-301
A Mathematical Field Day, S. C. Althoen and M. F. Wyneken, 21:5, 1990, 379-383
China's 1989 National College Entrance Examination, Bart Braden, 21:5, 1990, 390-393, 0.2, 0.4, 0.6
Forward Homework, Raymond A. McGivney, 21:5, 1990, 400-402, C
Teaching about Fractals, Stephen J. Willson, 22:1, 1991, 56-59
Physical Demonstrations in the Calculus Classroom, Tom Farmer and Fred Gass, 23:2, 1992, 146-148, C, 5.2.1, 6.1
The Joy of Mathematics: A Mary P. Dolciani Lecture, Peter Hilton, 23:4, 1992, 274-281, 0.2
How Should We Introduce Integration?, David M. Bressoud, 23:4, 1992, 296-298, 5.2.1
Gems of Exposition in Elementary Linear Algebra, David Carlson and Charles R. Johnson and David Lay and A. Duane Porter, 23:4, 1992, 299-303, 4.1, 4.5, 4.7
Studying Students Studying Calculus: A Look at the Lives of Minority Mathematics Students in College, Uri Treisman, 23:5, 1992, 362-372
The Growing Importance of Linear Algebra in Undergraduate Mathematics, Alan Tucker, 24:1, 1993, 3-9
Teaching Linear Algebra: Must the Fog Always Roll In?, David Carlson, 24:1, 1993, 29-40, 4.1
The Linear Algebra Curriculum Study Group Recommendations for the First Course in Linear Algebra, David Carlson and Charles R. Johnson and David C. Lay and A. Duane Porter, 24:1, 1993, 41-46, 4.1,

4.3, 4.2, 4.5
A Computer Lab for Multivariate Calculus, Casper R. Curjel, 24:2, 1993, 175-177, C, 5.7.1, 8.3
Old Calculus Chestnuts: Roast, or Light a Fire?, Margaret Cibes, 24:3, 1993, 241-243, C, 5.1.4
Great Problems of Mathematics: A Summer Workshop for High School Students, Reinhard C. Laubenbacher and Michael Siddoway, 25:2, 1994, 112-114
A Note from the Guest Editor and other ODE Resources, Beverly H. West, 25:5, 1994, 362-363
New Directions in Elementary Differential Equations, William E. Boyce, 25:5, 1994, 364-371, 6.2, 6.4
What It Means to Understand A Differential Equation, John H. Hubbard, 25:5, 1994, 372-384, 6.1, 6.2, 6.4
Teaching Differential Equations with a Dynamical Systems Viewpoint, Paul Blanchard, 25:5, 1994, 385-393, 6.1, 6.2, 6.4
Asking Good Questions about Differential Equations, Paul Davis, 25:5, 1994, 394-400, 1.1, 6.1
The Computer-oriented Calculus Course at Rensselaer Polytechnic Institute, William E. Boyce and Joseph G. Ecker, 26:1, 1995, 45-50
Mathematics Education: A Case for Balance, George E. Andrews, 27:5, 1996, 341-348
Mathematics Education: A Response to Andrews, David M. Mathews, 27:5, 1996, 349-353
George Andrews Replies, George Andrews, 27:5, 1996, 354-355
Is Mathematics Necessary?, Underwood Dudley, 28:5, 1997, 360-364
On “Rethinking Rigor in Calculus …,” or Why We Don’t Do Calculus on the Rational Numbers, Scott E. Brodie, 30:2, 1999, 135-138, C, 5.1.2
Verse, Marylou Zapf, 34:2, 2003, 169-170, C
A Survey of Online Mathematics Course Basics, G. Donald Allen, 34:4, 2003, 270-279

2 History of Mathematics

2.1 History of mathematics before 1400

The origin of our word "sine", Howard Eves, 1:1, 1970, 93, C
On the origin of ">" and "<", Howard Eves, 1:1, 1970, 94, C
The Genesis and Development of Set Theory, Phillip E. Johnson, 3:1, 1972, 55-62
An Informal History of Formal Proofs: From Vigor to Rigor?, Klaus Galda, 12:2, 1981, 126-140
Hippocrates and Archytas Double the Cube: A Heuristic Interpretation, Barnabas B. Hughes, 20:1, 1989, 42-48, 0.3
Misconceptions about the Golden Ratio, George Markowsky, 23:1, 1992, 2-19
The Algorists vs. the Abacists: An Ancient Controversy on the Use of Calculators, Barbara E. Reynolds, 24:3, 1993, 218-223
An Early Iterative Method for the Determination of Sine of One Degree, Farhad Riahi, 26:1, 1995, 16-21, 0.6
Did Plutarch Get Archimedes' Wishes Right?, Lester H. Lange, 26:3, 1995, 199-204, 5.2.7
Mathematics and the Liberal Arts, Hardy Grant, 30:2, 1999, 96-105
Mathematics and the Liberal Arts II, Hardy Grant, 30:3, 1999, 197-203, 2.2
Where Do Functions Come From?, Leigh Atkinson, 33:2, 2002, 107-112, 2.2
The “Origin” of Geometry, Reuben Hersh, 33:3, 2002, 207-211, 0.3, 9.2
Discovering Roots: Ancient, Medieval, and Serendipitous, Bryan Dorner, 36:1, 2005, 35-43, 0.2, 4.5, 9.3
When the Pope was a Mathematician, Leigh Atkinson, 36:5, 2005, 354-362
Fibonacci’s Forgotten Number, Ezra Brown and Jason C. Brunson, 39:2, 2008, 112-120, 0.7, 9.6
Solomon’s Sea and Pi, Andrew J. Simoson, 40:1, 2009, 22-32, 0.4, 9.2
Fibonacci’s Forgotten Number Revisited, Richard Maruszewski, 40:4, 2009, 248-251, 0.7, 5.1.3, 9.6
False Position, Double False Position and Cramer’s Rule, Eugene C. Boman, 40:4, 2009, 279-283, 0.2, 4.2

2.2 History of mathematics after 1400

The History of the Calculus, Carl B. Boyer, 1:1, 1970, 60-86
Kepler's Explanation of the Timaeus Associations, Howard Eves, 1:2, 1970, 31, C, 0.3
Mathematics of the Yoruba People and of Their Neighbors in Southern Nigeria, Claudia Zaslavsky, 1:2, 1970, 76-79
Terminology: logarithm, Howard Eves, 2:2, 1971, 27, C
Mathematician, Violinist, Fencer—Bolyai, Howard Eves, 3:1, 1972, 41, C
How Gauss was Won to Mathematics, Howard Eves, 3:1, 1972, 65, C
Eighteenth Century British Mathematics, Phillip E. Johnson, 7:2, 1976, 22-27
A Brief History of Logarithms, R. C. Pierce, Jr., 8:1, 1977, 22-26
Women Mathematicians, Debra Charpentier, 8:2, 1977, 73-79
Martin Gardner: Defending the Honor of the Human Mind, Irving Joshua Matrix, 10:4, 1979, 227-244
The Pentagram and the Discovery of an Irrational Number, James R. Choike, 11:5, 1980, 312-316, 0.3
On the History and Solution of the Four-Color Map Problem, John Mitchem, 12:2, 1981, 108-119, 3.1
An Informal History of Formal Proofs: From Vigor to Rigor?, Klaus Galda, 12:2, 1981, 126-140
The Universal Domination of Geometry, J. Dieudonne, 12:4, 1981, 227-231
Structure vs. Substance: The Fall and Rise of Geometry, Robert Osserman, 12:4, 1981, 239-246
A Profile of Ronald L. Graham, Gina Bari Kolata, 12:5, 1981, 290-301
A Machine as Smart as God, Rudy Rucker, 13:2, 1982, 115-121, 9.1
Paul Halmos: Maverick Mathologist, Donald J. Albers, 13:4, 1982, 226-242
John Horton Conway: Mathematical Magus, Richard K. Guy, 13:5, 1982, 290-299
The Thread, Philip J. Davis, 14:2, 1983, 98-104
Solomon Lefschetz: A Reminescence, Albert W. Tucker, 14:3, 1983, 225-227
A Glimpse at the Polya Picture Album, G. L. Alexanderson, 14:4, 1983, 274-294
Shiing-shen Chern: A Man and His Times, Willian G. Chinn and John Lewis, 14:5, 1983, 370-376
A Historical Sketch of Olympiads: USA and International, Nura D. Turner, 16:5, 1985, 330-335
The International Mathematical Olympiad Training Session, Cecil Rousseau and Gregg Patruno, 16:5, 1985, 362-365, 0.3, 9.3
The Autobiography of Julia Robinson, Constance Reid, 17:1, 1986, 2-21
Teaching Elementary Probability through its History, Sharon Kunoff and Sylvia Pines, 17:3, 1986, 210-219, 7.2
The Bernoullis and the Harmonic Series, William Dunham, 18:1, 1987, 18-23, 5.4.2
Charlotte Angas Scott 1858-1931, Patricia C. Kenschaft, 18:2, 1987, 98-110
Isaac Newton: Man, Myth, and Mathematics, V. Frederick Rickey, 18:5, 1987, 362-389
Evolution of the Function Concept: A Brief Survey, Israel Kleiner, 20:4, 1989, 282-300, 9.5
FFF #12. The Authority of the Written Word, Ed Barbeau, 20:5, 1989, 404, F
The Function sin x / x, William B. Gearhart and Harris S. Shultz, 21:2, 1990, 90-99, 5.1.2, 5.1.5
The Birth of the Eotvos Competition, Agnes Arvai Wieschenberg, 21:4, 1990, 286-293, 9.3
Two Surprising Theorems on Cavalieri Congruence, Howard Eves, 22:2, 1991, 118-124, 0.3
Reading Bombelli's x-purgated Algebra, Abraham Arcavi and Maxim Bruckheimer, 22:3, 1991, 212-219, 0.7
Euler and the Fundamental Theorem of Algebra, William Dunham, 22:4, 1991, 282-293, 0.7
Misconceptions about the Golden Ratio, George Markowsky, 23:1, 1992, 2, 0.3
The Algorists vs. the Abacists: An Ancient Controversy on the Use of Calculators, Barbara E. Reynolds, 24:3, 1993, 218-223
A "Very Pleasant Theorem", Roger Herz-Fischler, 24:4, 1993, 318-324, 0.3
Euler and Differentials, Anthony P. Ferzola, 25:2, 1994, 102-111, 5.1.3
Isaac Newton: Credit Where Credit Won't Do, Robert Weinstock, 25:3, 1994, 179-192, 0.5, 5.1.3, 5.4.3, 5.6.1
Newton's Orbit Problem: A Historian's Response, Curtis Wilson, 25:3, 1994, 193-200, 0.5, 6.4

In Defense of Newton: His Biographer Replies, Richard S. Westfall, 25:3, 1994, 201-205, 5.4.3
In Defense of Newton: A Physicist's View, A. P. French, 25:3, 1994, 206-209, 0.5, 5.6.1
Robert Weinstock Replies, Robert Weinstock, 25:3, 1994, 209-211
Newton's *Principia* and Inverse-Square Orbits, N. Nauenberg, 25:3, 1994, 212-221, 0.5, 6.4, 6.5
Robert Weinstock's Response to Nauenberg, Robert Weinstock, 25:3, 1994, 221-222, 0.5
Leibniz and the Spell of the Continuous, Hardy Grant, 25:4, 1994, 291-294, 9.5
An Invitation to Integration in Finite Terms, Elena Anne Marchisotto and Gholam-Ail Zakeri, 25:4, 1994, 295-308, 5.2.4, 5.2.5, 5.2.9
Functions of a Curve: Leibniz's Original Notion of Functions and Its Meaning for the Parabola, David Dennis and Jere Confrey, 26:2, 1995, 124-131, 0.3, 0.5
Mathematics and the Liberal Arts II, Hardy Grant, 30:3, 1999, 197-203, 2.1
The Witch of Agnesi, S. I. B. Gray and Tagui Malakyan, 30:4, 1999, 258-268, 5.1.3
Artemas Martin: An Amateur Mathematician of the Nineteenth Century, Patricia R. Allaire and Antonella Cupillari, 31:1, 2000, 22-34
On “The Witch of Agnesi”, Antonella Cupillari, 31:2, 2000, 144-145, C
Against the Odds, Martin Gardner, 32:1, 2001, 39-43, 3.2
Was Calculus Invented in India?, David Bressoud, 33:1, 2002, 2-13, 0.6, 5.4.3
Where Do Functions Come From?, Leigh Atkinson, 33:2, 2002, 107-112, 2.1
Spanish Colonial Mathematics: A Window on the Past, Ed Sandifer, 33:4, 2002, 266-278
A Very Brief History of Statistics, Howard W. Eves, 33:4, 2002
How Simple is Gravitation?, Paul Wolfson, 33:4, 2002, 350-352, C
The Bicentennial of American Mathematics Journals, David E. Zitarelli, 36:1, 2005, 2-15
Phoebe Floats!, Ezra Brown, 36:2, 2005, 114-122, 6.3, 9.6
Taylor Series – A Matter of Life or Death, The Observer (U.K.), 36:3, 2005, 237, C, 5.4.3
Jan Hudde and the Quotient Rule before Newton and Leibniz, Daniel J. Curtin, 36:4, 2005, 262-272
The Origins of Finite Mathematics: The Social Science Connection, Walter Meyer, 38:2, 2007 106-118
Mathematical Streets, Charles Marion, 38:4, 2007, 264, C
Pursuit Curves for the Man in the Moone, Andrew J. Simoson, 38:5, 2007, 330-338, 6.4, 9.10 (see also A Smoother Flight to the Moon, Stan Wagon, 39:1, 2008, 48)
Christiaan Huygens and the Problem of the Hanging Chain, John Bukowski, 39:1, 2008, 2-11, 0.3, 5.3.3
Tuning with Triangles, Leon Harkleroad, 39:5, 2008, 367-373, 9.2
Under-represented Then Over-represented: A Memoir of Jews in American Mathematics, Reuben Hersh, 41:1, 2010, 2-9
The Helen of Geometry, John Martin, 41:1, 2010, 17-28, 0.3, 5.6.1
Emmy Noether?, Michael Henle, 41:1, 2010, 27, C, 9.4
Biangular Coordinates Redux: Descovering a New Kind of Geometry, Michael Naylor and Brian Winkel, 41:1, 2010, 29-41, 9.7
Augustus De Morgan Behind the Scenes, Charlotte Simmons, 42:1, 2011, 33-39
Eradicating a Disease: Lessons from Mathematical Epidemiology, Matthew Glomski and Edward Ohanian, 43:2, 2012, 123-132, 6.4, 9.10

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George Polya, Interviewed on His Ninetieth Birthday, G. L. Alexanderson, 10:1, 1979, 13-19
An Interview with Morris Kline: Part 1, G. L. Alexanderson, 10:3, 1979, 172-178
A Conversation with Martin Gardner, Anthony Barcellos, 10:4, 1979, 233-244
An Interview with Morris Kline: Part 2, G. L. Alexanderson, 10:4, 1979, 259-264
An Interview with H. S. M. Coxeter, Dave Logothetti, 11:1, 1980, 2-19
An Interview with Constance Reid, G. L. Alexanderson, 11:4, 1980, 226-238
An Interview with Stan Ulam, Anthony Barcellos, 12:3, 1981, 182-189

An Interview with Paul Erdos, G. L. Alexanderson, 12:4, 1981, 249-259
A Conversation with Don Knuth: Part I, Donald J. Albers and Lynn Arthur Steen, 13:1, 1982, 2-18
A Conversation with Don Knuth, Part 2, Donald J. Albers and Lynn Arthur Steen, 13:2, 1982, 128-141
John G. Kemeny: Computer Pioneer, Lynn Arthur Steen, 14:1, 1983, 18-35
A Conversation with Garrett Birkhoff, G. L. Alexanderson and Carroll Wilde, 14:2, 1983, 126-145
An Interview with Albert W. Tucker, Stephen B. Maurer, 14:3, 1983, 210-214
An Interview with Herbert Robbins, Warren Page, 15:1, 1984, 2-24
A Conversation with Henry Pollak, Donald J. Albers and Michael J. Thibodeaux, 15:3, 1984, 194-219
An Interview with the 1985 USA Team to the International Mathematical Olympiad, Warren Page, 16:5, 1985, 336-360
An Interview with George B. Dantzig: The Father of Linear Programming, Donald J. Albers and Constance Reid, 17:4, 1986, 292-304, 9.6
An Interview with Lipman Bers, Donald J. Albers and Constance Reid, 18:4, 1987, 266-290
An Interview with Mary Ellen Rudin, Donald J. Albers and Constance Reid, 19:2, 1988, 114-137
A Conversation with Saunders Mac Lane, Gerald L. Alexanderson, 20:1, 1989, 2-26
A Conversation with Robin Wilson, D. J. Albers and G. L. Alexanderson, 21:3, 1990, 178-195
Interview with Irving Kaplansky, Donald J. Albers, 22:2, 1991, 98-117
A Conversation with Ivan Niven, Donald J. Albers and G. L. Alexanderson, 22:5, 1991, 370-402
A Conversation with Leon Bankoff, G. L. Alexanderson, 23:2, 1992, 98-117
A Conversation with Richard K. Guy, Donald J. Albers and Gerald L. Alexanderson, 24:2, 1993, 122-148
Freeman Dyson: Mathematician, Physicist, and Writer, Donald J. Albers, 25:1, 1994, 2-21
Still Questioning Authority: An Interview with Jean Taylor, Don Albers, 27:4, 1996, 250-266
An Interview with Tom Apostol, Donald J. Albers, 28:4, 1997, 250-270
An Interview with Lars V. Ahlfors, Donald J. Albers, 29:2, 1998, 82-92
In Love with Geometry, Dan Pedoe, 29:3, 1998, 170-188
Coming to America: The Journey of an Immigrant Scholar, Clifford H. Wagner, 30:1, 1999, 2-17
An Interview with Dame Mary L. Cartwright, D.B.E., F.R.S., James Tattersall and Shawnee McMurran, 32:4, 2001, 242-254
An Interview with Dirk Struik on the Eve of His One Hundredth Birthday, James J. Tattersall, 33:3, 2002, 178-187
In Touch With God: An Interview with Paul Halmos, Don Albers, 35:1, 2004, 2-14
Saari, with no Apologies, Deanna Haunsperger, 36:2, 2005, 90-100
On the Way to "Mathematical Games"; Part I of an Interview with Martin Gardner, Don Albers, 36:3, 2005, 178-190
"Mathematical Games" and Beyond: Part II of an Interview with Martin Gardner, Don Albers, 36:4, 2005, 301-314
David Gale: Restless Pioneer, Walter Meyer, 37:1, 2006, 29-38
An Interview with H. W. Gould, Scott H. Brown, 37:5, 2006, 370-379
John Todd – Numerical Mathematics Pioneer, Don Albers, 38:1, 2007, 2-23
A Break for Mathematics: An Interview with Joe Gallian, Deanna Haunsperger, 39:3, 2008, 174-190
Interview with Martin Gardner, Michael Henle, 40:3, 2009, 158-161
An Interview with Steven J. Brams, Michael A. Jones, 41:4, 2010, 262-267

3 Discrete Mathematics

3.1 Graph theory

Shapes of the Future, Victor Klee, 2:2, 1971, 14-27, 0.3
Topological Regular Solids, Stewart S. Cairns, 4:1, 1973, 74-76, C
Partitions of the Plane, Nathan Hoffman, 5:2, 1974, 71-73, C, 0.3

Mathematics—Is It Any of Your Business?, Ralph Mansfield, 6:3, 1975, 20-26, 1.2, 9.1
The Game of Sprouts, Gordon D. Prichett, 7:4, 1976, 21-25, 9.2
Binary Grids and a Related Counting Problem, Nathan Hoffman, 9:4, 1978, 267-272, 6.3
The Pigeonhole Principle, Kenneth R. Rebman, 10:1, 1979, 3-13, 9.3
Who Stole the Apples and The Sticks?, Ross Honsberger, 10:1, 1979, 30-32, 3.3
The Challenge of Classifying Polyhedra, Jean J. Pedersen, 11:3, 1980, 162-173 (also 18:5, 1987, 410)
An Application of Turan's Theorem, Ross Honsberger, 11:3, 1980, 196-200
On the History and Solution of the Four-Color Map Problem, John Mitchem, 12:2, 1981, 108-119. 2.2
Chain Letters: A Poor Investment Unless..., David J. Thuente, 13:1, 1982, 28-35, 7.2
Semi-Regular Lattice Polygons, Ross Honsberger, 13:1, 1982, 36-44, 9.3
Computer-Generated Knight Tours, Michael Gilpin, 13:4, 1982, 252-259, 3.3, 9.2
Labeling of Graphs, J. L. Brenner, 14:1, 1983, 36-41
Connect-It Games, Frank Harry and Robert W. Robinson, 15:5, 1984, 411-419, 9.2
Realization of Parity Visits in Walking a Graph, Robert C. Bugham and Ronald D. Dutton and Phyllis Z. Chinn and Frank Harary, 16:4, 1985, 280-282, C
A Discrete Look at 1 + 2 + ... + n, Loren C. Larson, 16:5, 1985, 369-382, 0.2, 0.9, 3.2, 5.4.2, 6.3
Trees and Tennis Rankings, Curtis Cooper, 17:1, 1986, 76-78, C, 3.2
Coloring Points in the Unit Square, Charles H. Jepsen, 17:3, 1986, 231-237, 5.1.4
Combinatorics by Coin Flipping, Joel Spencer, 17:5, 1986, 407-412, 3.2, 7.2
Facility Location Problems, Fred Buckley, 18:1, 1987, 24-32, 9.10
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An Application from Combinatorics to Dice-Sum Frequencies, David L. Pugh, 11:5, 1980, 331-333, C, 7.1
An Alternative Proof to Dirac's Theorem, Penelope Barlow, 12:1, 1981, 57-58, C
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Point-and-Line Proof for the Sum of Cubes, Barbara Turner, 12:4, 1981, 270-271, C
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A Chessboard Coloring Problem, May Beresin and Eugene Levine and John Winn, 20:2, 1989, 106-114
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Using Euler's Formula to Solve Plane Separation Problems, Thomas L. Moore, 22:2, 1991, 125-130, 3.1
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The Pascal Pyramid, Hans Walser, 31:5, 2000, 383-392, 0.3
The Sum of min(i,j) Equals the Sum of the First k Integers Squared (Mathematics Without Words), Abraham Arcavi and Alfinio Flores, 31:5, 2000, 392, C
Against the Odds, Martin Gardner, 32:1, 2001, 39-43, 2.2
Slicing Space, Seth Zimmerman, 32:2, 2001, 126-128, C
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The Interior Diagonals of a Polygon, Margaux Marie Siegel, 32:3, 2001, 239-240, C
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n-Card Tricks, Hang Chen and Curtis Cooper 40:3, 2009, 196-201, 9.2
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The Rascal Triangle, Alif Anggoro, Eddy Liu, and Angus Tulloch, 41:5, 2010, 393-395, 0.1
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The Secretary Problem from the Applicant's Point of View, Darren Glass, 43:1, 2012, 76-81, 7.2
30 Years of Bulgarian Solitaire, Brian Hopkins, 43:2, 2012, 135-140, 9.2, 9.3
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3.3 Other topics in discrete mathematics (also see 6.3)

Who Stole the Apples and The Sticks?, Ross Honsberger, 10:1, 1979, 30-32, 3.1
Computer-Generated Knight Tours, Michael Gilpin, 13:4, 1982, 252-259, 3.1, 9.2
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Card Shuffling in Discrete Mathematics, Steve M. Cohen and Paul R. Coe, 26:3, 1995, 224-227, C, 9.4
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Madden, 28:3, 1997, 172-181, 0.3
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In Search of a Missing Link: A Case Study in Error-Correcting Codes, Andy Liu, 32:5, 2001, 343-347
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Miscellanea: A Ballot Count Surprise, N. S. Mendelsohn, 33:5, 2002, 431-432, C, 7.2
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Two-Person Pie-Cutting: The Fairest Cuts, Julius B. Barbanel and Steven J. Brams, 42:1, 2011, 25-32
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On One-Sided Inverses of Matrices, Elmar Zemgalis, 2:1, 1971, 45-48
On Transformations and Matrices, Marc Swadener, 4:3, 1973, 44-51, 4.4
Computer-Generated Problem Sets: Simultaneous Equations and Matrices, Samuel W. Spero and Mary Koehler, 8:3, 1977, 182-187
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Why Should We Pivot in Gaussian Elimination?, Edward Rozema, 19:1, 1988, 63-72, 4.6
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Software Review: Linear Algebra Software for the IBM PC, David P. Kraines and Vivian Y. Kraines, 21:1, 1990, 57-64, 4.8
FFF #16. Nonsquare Invertible Matrices, Ed Barbeau, 21:2, 1990, 127, F (also 22:3, 1991, 223 and 23:3, 1992, 204)
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Gems of Exposition in Elementary Linear Algebra, David Carlson and Charles R. Johnson and David Lay and A. Duane Porter, 23:4, 1992, 299-303, 1.2, 4.5, 4.7
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5 Calculus

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An Unexpected Appearance of the Golden Ratio, George Manuel and Amalia Santiago, 19:2, 1988, 168-170, C, 0.4
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5.1.2 The derivative and mean value theorems

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5.1.3 Tangents, differentials, and differentiation

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5.2 Integration

5.2.1 Definition of integrals and the fundamental theorem

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Saddle Points and Inflection Points, Felix Martinez de la Rosa, 38:5, 2007, 380-383, C, 5.1.5
The Depletion Ratio, C. W. Groetsch, 39:1, 2008, 43-48, 5.1.1, 9.10
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Circumference of a Circle—The Hard Way, David P. Kraines and Vivian Y. Kraines and David A. Smith, 21:2, 1990, 142-144, C, 5.2.10
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Simpson's Rule with Constant Weights, R. S. Pinkham, 32:2, 2001, 91-93, 9.6
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5.2.3 Change of variable (substitution)

Some Problems of Utmost Gravity, William C. Stretton, 3:1, 1972, 72-75, C, 5.7.2
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Calculus by Mistake, Louise S. Grinstein, 5:4, 1974, 49-53, C, 5.1.2, 5.1.4, 5.2.2, 5.2.5, 5.2.10, 5.4.2, 5.6.1, 5.7.2
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A Direct Proof of the Integral Formula for Arctangent, Arnold J. Insel, 20:3, 1989, 235-237, C, 5.1.2, 5.2.6
Four Crotchets on Elementary Integration, Leroy F. Meyers, 22:5, 1991, 410-413, C, 5.2.5, 5.3.2, 6.1
Reduction Formulas Revisited, T. N. Subramaniam and D. E. G. Malm, 22:5, 1991, 421-429, 5.2.5
Gather; Don't Strew, Bob Weinstock, 23:5, 1992, 372, C
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FFF #101. The Disappearing Factor, James C. Kirby, 27:2, 1996, 117, F, 5.2.10 (see also 30:2, 1999, 131)
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Antiderivative Formulas, Jingcheng Tong, 29:1, 1998, 32, C
The Average Distance of the Earth from the Sun, David Deever, 30:3, 1999, 218-220, C, 0.5, 5.2.8

FFF #165. Two separate answers?, Ken Taylor, 31:5, 2000, 396, F, 5.2.5
FFF #180. Integration Discrepancies, Roger B. Nelsen, 32:5, 2001, 365-366, F
FFF #281. Making an integrand completely imaginary, John K. Osoinach, 39:4, 2008, 299, F
FFF #284. A funky change of variables, Allen J. Schwenk, 39:5, 2008, 382, F
Four Ways to Skin a Definite Integral, Joseph B. Dence and Thomas P. Dence, 41:2, 2010, 134-144, 5.2.4, 9.5
Teaching Tip: Practice Integration on Problem Triplets, Meg B. Huddleston, 42:3, 2011, 214, C, 5.2.4, 5.2.5
A Fifth Way to Skin a Definite Integral, Satyanand Singh, 43:5, 2012, 377-378, 5.2.4, 5.2.10

5.2.4 Partial fraction decomposition

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Efficient Techniques for Partial Fractions, Padmini T. Joshi, 14:2, 1983, 110-118
An Algebraic Approach to Partial Fractions, Phillip Schultz, 14:4, 1983, 346-348, C
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FFF #278. The integral of a positive function equals 0, Hongwei Chen, 39:3, 2008, 227-228, F, 5.3.1
Teaching Tip: Partial Fractions or No Partial Fractions?, Sidney Kung, 39:4, 2008, 306, C
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Teaching Tip: Another Way to Break Up Partial Fractions, William Paulsen, 41:3, 2010, 221, C
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A Fifth Way to Skin a Definite Integral, Satyanand Singh, 43:5, 2012, 377-378, 5.2.3, 5.2.10

5.2.5 Integration by parts

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A Discovery Approach to Integration by Parts, John Staib and Howard Anton, 10:5, 1979, 353-354, C
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Creative Teaching by Mistakes, Andrejs Dunkels and Lars-Erik Persson, 11:5, 1980, 296-300, 6.1

Differential Operators Applied to Integration, Kong-Ming Chong, 13:2, 1982, 155-157, C, 6.2
Evaluating Integrals by Differentiation, Joseph Wiener, 14:2, 1983, 168-169, C, 5.3.1
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A Note on Integration by Parts, Andre L. Yandl, 16:4, 1985, 282-283, C
Numerical Integration via Integration by Parts, Frank Burk, 17:5, 1986, 418-422, C, 5.2.2
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FFF #17. cosh x = sinh x and 1 = 0, Ed Barbeau, 21:2, 1990, 128, F, 5.3.3
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FFF. Integration by parts, Karl Havlak, 33:2, 2002, 139, F
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A Quotient Rule Integration by Parts Formula, Jennifer Switkes, 36:1, 2005, 58-60, C
FFF #285. An integration by parts, Stephen Scarborough, 39:5, 2008, 382-383, F
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Teaching Tip: Practice Integration on Problem Triplets, Meg B. Huddleston, 42:3, 2011, 214, C, 5.2.3, 5.2.4
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5.2.6 Area

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The Surveyor's Area Formula, Bart Braden, 17:4, 1986, 326-337, 4.2, 5.2.8
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A Direct Proof of the Integral Formula for Arctangent, Arnold J. Insel, 20:3, 1989, 235-237, C, 5.1.2, 5.2.3
Exploring the Volume-Surface Area Relationship, Keith A. Struss, 21:1, 1990, 40-43, C, 5.2.7
Relations between Surface Area and Volume in Lakes, Daniel Cass and Gerald Wildenberg, 21:5, 1990, 384, 5.2.7
FFF #99. Polar Increment of Area, Peter Jarvis and Paul Schuette, 27:2, 1996, 117, F, 5.6.1
Things I Have Learned at the AP Reading, Dan Kennedy, 30:5, 1999, 346-355, 0.2, 5.1.1, 5.1.2, 5.2.1,

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Do Most Cubic Graphs Have Two Turning Points?, Robert Fakler, 30:5, 1999, 367-369, 0.7, 7.2
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The Parable of the Lucky Student?, Vince Matsko, 33:3, 2002, 230-232, C, 5.7.1
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Symmetry at Infinity, Richard Winton, 36:3, 2005, 228-231, C
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Can You Paint a Can of Paint?, Robert M. Gethner, 36:5, 2005, 400-402, C, 5.2.7
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5.2.7 Volume

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Another Way of Looking at n!, David Hsu, 11:5, 1980, 333-334, C, 5.7.2
A Note on the Surface of a Sphere, Arthur C. Segal, 13:1, 1982, 63-64, C
The Grazing Goat in n Dimensions, Marshall Fraser, 15:2, 1984, 126-134
A Sequel to "Another Way of Looking at n!", William Moser, 15:2, 1984, 142-143, C, 3.2, 5.7.2
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Another Way to Graph a Sequence, David Olson, 27:3, 1996, 208-209, C
Proofs Without Words: Galileo's Ratios Revisited, Alfinio Flores, 36:3, 2005, 198, C, 9.5
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5.4.2 Numerical series (convergence tests and summation)

Encouraging Mathematical Inquisitiveness, Carl L. Main, 1:1, 1970, 32-36, 5.2.2
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An Interesting Use of Generating Functions, Aron Pinker, 6:4, 1975, 39-45, 0.6, 9.5
A Helpful Device: or One More Use for Pascal's Triangle, Robert Rosenfeld, 8:3, 1977, 188-191, C, 0.9
A Coin Game, Thomas P. Dence, 8:4, 1977, 240-246, 9.9, 9.10
Geometric Series on the Gridiron, Andris Niedra, 9:1, 1978, 18-20
A Note on Infinite Series, Louise S. Grinstein, 9:1, 1978, 46-47, C
A Note on the Integral Test, Peter A. Lindstrom, 9:2, 1978, 105-106, C
Flow Chart for Infinite Series, Thomas W. Shilgalis, 9:3, 1978, 191, C
On Sum-Guessing, Mangho Ahuja, 10:2, 1979, 95-99
The Sum of the Reciprocals of the Primes, W. G. Leavitt, 10:3, 1979, 198-199, C
Calculator-Demonstrated Math Instruction, George McCarty, 11:1, 1980, 42-48, 5.1.1, 5.2.2, 9.6
An Investment Approach to Geometric Series, Robert Donaghey and Warren Gordon, 11:2, 1980, 120-121, C
A Precalculus Approximation of n!, Norman Schaumberger, 11:3, 1980, 202-204, C, 0.2
Summation of Finite Series—A Unified Approach, Shlomo Libeskind, 12:1, 1981, 41-50, 6.3
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The Saint Petersburg Paradox and Some Related Series, Allan J. Ceasar, 12:5, 1981, 306-308
Infinite Series Flow Chart for the Sum of a(n), Franklin Kemp, 13:3, 1982, 199, C
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A Simple Explicit Formula for the Bernoulli Numbers, F. Lee Cook, 13:4, 1982, 273-274, C
The Sums of Zeroes of Polynomial Derivatives, Michael W. Ecker, 13:5, 1982, 328-329, C, 0.7, 5.1.2
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On Problems with Solutions Attainable in More Than One Way, Jean Pedersen and George Polya, 15:3, 1984, 218-228, 0.2, 0.4
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Approximate Angle Trisection, David Gauld, 15:5, 1984, 420-422, 0.6
Inverse Functions, Ralph P. Boas, 16:1, 1985, 42-47, 5.2.1, 5.3.2
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Sums of Rearranged Series, Paul Schaefer, 17:1, 1986, 66-70
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A Case of True Interest, Soo Tang Tan, 17:3, 1986, 247-248, C, 0.8
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Generating Functions, William Watkins, 18:3, 1987, 195-211, 6.3, 9.3
Computing Pi, Harley Flanders, 18:3, 1987, 230-235, 5.2.3, 8.1
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Estimating the Sum of Alternating Series, James D. Harper, 19:2, 1988, 149-154
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Evaluating the Sum of the Series Sum(k^j / M^k), Alan Gorfin, 20:4, 1989, 329-331, C
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Using the Finite Difference Calculus to Sum Powers of Integers, Lee Zia, 22:4, 1991, 294-300, 5.2.1, 5.4.1
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Summation by Parts, Gregory Fredricks and Roger B. Nelsen, 23:1, 1992, 39-42, C, 5.1.2, 5.4.1, 9.3
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Six Ways to Sum a Series, Dan Kalman, 24:5, 1993, 402-421, 9.5
The Series n^m times x^n and a Pascal-like Triangle, David Neal, 25:2, 1994, 99-101
Sum of Squares via the Centroid, Sydney H. Kung, 25:2, 1994, 111, C
Approaches to the Formula for the nth Fibonacci Number, Russell Jay Hendel, 25:2, 1994, 139-142, C, 0.2, 4.5, 9.3, 9.5
FFF #76. Telescoping Series, Eleanor A. Maddock, 25:4, 1994, 309, F

FFF. Pi is approximately ln 4, Frank Burk, 25:4, 1994, 311, F
Sum of Alternating Series (proof by picture), Guanshen Ren, 26:3, 1995, 213, 0.9
Divergence of a Series (by picture), Sidney H. Kung, 26:4, 1995, 301, C
Sums of General Geometric Series (by picture), John Mason, 26:5, 1995, 381, C
FFF #106. The Derivative of the Sum Is the Sum of the Derivatives, Ed Barbeau, 27:4, 1996, 282, F
Bargaining Theory, or Zeno's Used Cars, James C. Kirby, 27:4, 1996, 285-286, C, 6.3
FFF #111. The Bouncing Ball, Daniel J. Scully, 27:5, 1996, 372-373, F
Some Sums of Some Significance, Martha E. Dasef and Steven M. Kautz, 28:1, 1997, 52-55, C
Divergence of the Harmonic Series by Rearrangement, Michael W. Ecker, 28:3, 1997, 209-210, C
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Using Simpson's Rule to Approximate Sums of Infinite Series, Rick Kreminski, 28:5, 1997, 368-376
Can You Sum This Familiar Series? (Proof Without Words), Dennis Gittinger, 28:5, 1997, 393, C
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Who Cares if X^2 + 1 = 0 Has a Solution?, Viet Ngo and Saleem Watson, 29:2, 1998, 141-144, C, 0.7, 5.2.5, 6.2
FFF #135. Positive Series with a Negative Sum, William A. Simpson, 29:5, 1998, 407, F
A Novel Approach to Geometric Series, Michael W. Ecker, 29:5, 1998, 419-420, C
Harmonic Series, Andrew Cusumano, 30:1, 1999, 34, C
Gabriel's Wedding Cake, Julian F. Fleron, 30:1, 1999, 35-38, 5.2.10
FFF #141. Evaluation of a Sum, Joe Howard, 30:2, 1999, 130-131, F
Natural Logarithms via Long Division, Frank Burk, 30:4, 1999, 309-311, C
Things I Have Learned at the AP Reading, Dan Kennedy, 30:5, 1999, 346-355, 0.2, 5.1.1, 5.1.2, 5.2.1, 5.2.6, 6.1
The Series for e via Integration, Marc Chamberland, 30:5, 1999, 397, C
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Sum of Infinite Series (Mathematics Without Words), Rick Mabry, 32:1, 2001, 19, C
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A series for ln k, James Lesko, 32:2, 2001, 119-122, C
What's Harmonic About the Harmonic Series?, David Kullman, 32:3, 2001, 201-203 , C
Convergence-Divergence of p-Series, Rasul Khan, 32:3, 2001, 206-208, C
Arctangent Sums, Louis Bragg, 32:4, 2001, 255-257, 5.3.1
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Geometric Progressions – A Geometric Approach, Michael Strizhevsky and Dmitry Kreslavskiy, 32:5, 2001, 359-362, 0.6
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FFF #182. New exponent laws, Carl Libis, 33:1, 2002, 38, F
A Tale of Two Series, Thomas J. Osler and Marcus Wright, 33:2, 2002, 99-106, 7.2
Designing a Calculus Mobile, Tom Farmer, 33:2, 2002, 131-136, 5.2.4
The Alternating Harmonic Series, Leonard Gillman, 33:2, 2002, 143-145, C
An Application of Condensation, Sidney Kung, 33:2, 2002, 168, C
Divergence of Series by Rearrangement, Bernard August and Thomas J. Osler, 33:3, 2002, 233-234, C
Convergence-Divergence of *p*-Series, Xianfu Wang, 33:4, 2002, 314-316, C
Investigating Possible Boundaries Between Convergence and Divergence, Frederick Hartmann and David Sprows, 33:5, 2002, 405-406, C, 9.5
FFF #200. A lopsided interval of convergence, Ed Barbeau, 34:1, 2003, 50, F
FFF #206. A series that converges and diverges, Doug Kuhlman, 34:2, 2003, 135, F

Column Integration and Series Representations, Thomas P. Dence and Joseph B. Dence, 34:2, 2003, 144-148, C, 5.2.5
The Calculus Mobile Simplification, A. K. Jobbings, 34:3, 2003, 223, C
Calculus, Pi, and the Machine Age, Susan Jane Colley, 34:4, 2003, 264-269, 5.2.4, 9.6
FFF #217. A Riemann sum, Holly M. Hoover, 34:4, 2003, 314, F, 9.5
An Improved Remainder Estimate for Use With the Integral Test, Roger B. Nelsen, 34:5, 2003, 397-399, C, 9.6
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FFF #218. Alternating madness, Ollie Nanyes, 35:1, 2004, 40-41, F
A Visual Approach to Geometric Series, Beata Randrianantoanina, 35:1, 2004, 43-47, C
FFF #223. Product of sums equal sum of products, Dan Kalman, 35:2, 2004, 123, F
Sums of Harmonic-Type Series, James Lesko, 35:3, 2004, 171-182, 5.3.4
Almost Alternating Harmonic Series, Curtis Feist and Ramin Naimi, 35:3, 2004, 183-191, 9.5
Finding the Sums of Harmonic Series of Even Order, Arpad Benyi, 36:1, 2005, 44-48
Alternating Series Test (Proof Without Words), Richard Hammack and David Lyons, 36:1, 2005, 72, C
A Geometric Series from Tennis, James Sandefur, 36:3, 2005, 224-226, C, 7.2
Another Proof for the *p*-Series Test, Yang Hansheng and Bin Lu, 36:3, 2005, 235-237, C
In Need of Analysis, Kevin Ferland, 26:5, 2005, 365, C
Series for the Square Root of 2, Sidney Kung, 36:5, 2005, 387, C
FFF #245. The harmonic series converges, Hongwei Chen, 37:1, 2006, 40-41, F
FFF #253. Hospitalization, Michael Caulfield, 37:4, 2006, 291, F
The Divergence of Balanced Harmonic-like Series, Carl V. Lutzer and James E. Marengo, 37:5, 2006, 364-369
Another Look at Some *p*-Series, Ethan Berkove, 37:5, 2006, 385-386, C
FFF #264. When the limit comparison test fails, Franciszek Prus-Wisniowski, 38:2, 2007, 132-133, F
On the Convergence of Some Modified *p*-Series, Dongling Deng, 38:3, 2007, 223-225, C
Proof Without Words: Geometric Series Formula, James Tanton, 39:2, 2008, 106, C
Squaring a Circular Segment, Russell A. Gordon, 39:3, 2008, 212-220, 0.4, 9.6
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Proof Without Words: Sum of an Infinite Series, Hasan Unal, 40:1, 2009, 39, C
Series Involving Iterated Logarithms, J. Marshall Ash, 40:1, 2009, 40-42, C
Proof Without Words: Powers of Two, James Tanton, 40:2, 2009, 86, C, 0.1
Teaching Tip: Partial Sums of Geometric Series, Roger B. Nelsen, 40:4, 2009, 278, C
An Empirical Approach to the St. Petersburg Paradox, Dominic Klyve and Anna Lauren, 42:4, 2011, 260-263, 7.1, 7.2, 9.10
Series with Inverse Function Terms, Sergei Ovchinnikov, 42:4, 2011, 283-288, 5.3.1, 5.3.3, 9.5
The Shad-Fack Transom, Annalisa Crannell, 42:4, 2011, 309-316, 0.3, 0.4
Convergence of a Catalan Series, Thomas Koshy and Zhenguang Gao, 43:2, 2012, 141-146, 3.2, 9.3
Harmonic Series Meets Fibonacci Sequence, Hongwei Chen and Chris Kennedy, 43:3, 2012, 237-243, 9.5
The Basel Problem as a Telescoping Series, David Benko, 43:3, 2012, 244-250, 5.4.3
Extending the Alternating Series Test, Hidefumi Katsuura, 43:4, 2012, 325-330, 9.5
Series that Converge Absolutely but Don't Converge, Robert Kantrowitz and Michael Schramm, 43:4, 2012, 331-333, C, 9.5
Proof Without Words: An alternating Series, Roger B. Nelsen, 43:5, 2012, 370, C

5.4.3 Taylor polynomials and power series

Uniqueness of Power Series Representations, Garfield C. Schmidt, 12:1, 1981, 54-56, C, 9.5

Power Series for Practical Purposes, Ralph Boas, 13:3, 1982, 191-195, 9.5
Extending the Series for ln 2, Norman Schaumberger, 18:3, 1987, 223-225, C
More on the Series for ln 2, Leonard Gillman, 19:3, 1988, 252-253, C
Spreadsheets, Power Series, Generating Functions, and Integers, Donald R. Snow, 20:2, 1989, 143-152, 6.3
Power Series and Exponential Generating Functions, G. Ervynck and P. Igodt, 20:5, 1989, 411-415, C, 9.5
Taylor Polynomials, David P. Kraines and Vivian Y. Kraines and David A. Smith, 20:5, 1989, 435-436, C, 1.2
FFF #20. A Power Series Representation of 1=0, Ed Barbeau, 21:3, 1990, 217, F
FFF #28. More fun with Series, log 2 = 1/2 log 2, Ed Barbeau, 21:5, 1990, 395-396, F (also 23:1, 1992, 38 and 24:3, 1993, 231)
Who Needs the Sine Anyway?, Carlos C. Huerta, 23:1, 1992, 43-44, C
Approximating Series, Raymond J. Collins, 23:2, 1992, 153-157, C
Taylor Polynomial Approximations in Polar Coordinates, Sheldon P. Gordon, 24:4, 1993, 325-330, 5.6.1
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Isaac Newton: Credit Where Credit Won't Do, Robert Weinstock, 25:3, 1994, 179-192, 0.5, 2.2, 5.1.3, 5.6.1
In Defense of Newton: His Biographer Replies, Richard S. Westfall, 25:3, 1994, 201-205, 2.2
FFF #83. Power Series Thinning, David Rose, 26:1, 1995, 35, F (also 26:5, 1995, 384)
Newton's Method for Resolving Affected Equations, Chris Christensen, 27:5, 1996, 330-340, 0.7, 5.1.2
On Dividing Coconuts: A Linear Diophantine Problem, Sahib Singh and Dip Bhattacharya, 28:3, 1997, 203-204, C, 9.3
A Note on Taylor's Series for sin(ax+b) and cos(ax+b), Russell Euler, 28:4, 1997, 297-298, C
Taylor Polynomials for Rational Functions, Mike O'Leary, 29:3, 1998, 226-228, C
Novel Maclaurin Series-Based Approximation to e, John Knox and Harlan Brothers, 30:4, 1999, 269-275
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Was Calculus Invented in India?, David Bressoud, 33:1, 2002, 2-13, 0.6, 2.2
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Taylor Series – A Matter of Life or Death, The Observer (U.K.), 36:3, 2005, 237, C, 2.2
Taylor-Made Problems (poem), Jeremy Gorman, 37:5, 2006, 384, C
The Taylor Polynomials of sin θ (Proofs Without Words), John Quintanilla, 38:1, 2007, 58-59, C
Teaching Tip: An Introduction to e^{ix} without Series, James Tanton, 39:1, 2008, 23, C, 5.3.2, 6.1
Finding Matrices that Satisfy Functional Equations, Scott Duke Kominers, 40:4, 2009, 289-292, C, 4.1
On the Remainder in the Taylor Theorem, Lior Bary-Soroker and Eli Leher, 40:5, 2009, 373-374, C
Taylor’s Theorem: The Elusive *c* is Not So Elusive, Rick Kreminski, 41:3, 2010, 186-192, 9.5
Animating Nested Taylor Polynomials to Approximate a Function, Eric F. Mazzone and Bruce R. Piper, 41:5, 2010, 405-408, C
A Generalization of the Parabolic Chord Property, John Mason, 42:4, 2011, 326-328, C, 5.1.3
Derivative Sign Patterns, Jeffrey Clark, 42:5, 2011, 379-381, C, 5.1.2, 9.5
The Basel Problem as a Telescoping Series, David Benko, 43:3, 2012, 244-250, 5.4.2

5.5 Vector algebra and geometry (including 2x2 and 3x3 determinants)

Correlation—A Vector Approach, Kenneth R. Kundert, 11:1, 1980, 52, C, 7.3
A Note on the Vector Triple Product, Thomas A. McCullough, 11:3, 1980, 206-207, C

From an Inequality to Inversion, Man-Keung Siu, 12:2, 1981, 149-151, C, 0.4
Partial and Semipartial Correlation-A Vector Approach, John Huber, 12:2, 1981, 151-153, C, 7.3
Vector Identities from Quaternions, William C. Schultz, 12:4, 1981, 271-273, C, 9.4
Generalized Pythagorean Triples, W. J. Hildebrand, 16:1, 1985, 48-52, 0.6, 9.3
Tetrahedra, Skew Lines and Volume, James Smith and Mason Henderson, 16:2, 1985, 138-140, C
An Alternate Proof of the Vector Triple Product Formula, William C. Schultz, 17:1, 1985, 73-74, C
Three Ways to Maximize the Area of an Inscribed Quadrilateral, Leroy F. Meyers, 17:3, 1986, 238-239, C, 0.3
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Kepler Orbits *More Geometrico*, Andrew Lenard, 25:2, 1994, 90-98, 0.3
On the Distance from a Point to a Curve, Mark Schwartz, 25:4, 1994, 317-319, C
Formulas of Linear Geometry, Heinrich W. Guggenheimer, 27:1, 1996, 24-32
A Geometric View of a Vector Identity, Yukio Kobayashi, 29:4, 1998, 309-310, C
Differential Forms for Constrained Max-Min Problems: Eliminating Lagrange Multipliers, Frank Zizza, 29:5, 1998, 387-396, 5.7.1
Computation of Planetary Orbits, Donald A. Teets and Karen Whitehead, 29:5, 1998, 397-404, 5.6.1
FFF #145. The Height of a Trapezoid, Dale R. Buske, 30:3, 1999, 210, F
Related Rates Collide with Vectors, Stephen Fulling, 31:2, 2000, 116-119, 5.1.3
N-Site Insights, Bret Draayer, 31:4, 2000, 250-258, 4.1
How Long Was Your Day?, Albert Schueller, 35:1, 2004, 31-33
FFF #272. Rotating a vector, Elliot Cohen, 39:1, 2008, 49, F
The Pearson and Cauchy-Schwarz Inequalities, David Rose, 39:1, 2008, 64, C, 7.3, 9.5
FFF #277. The all-inclusive span, Ayoub B. Ayoub, 39:2, 2008, 136, F
The Cross Product as a Polar Decomposition, Gotz Trenkler, 39:3, 2008, 237-239, C, 4.1, 4.3
Teaching Tip: A Vector Proof of the Addition Law for Cosines, Zhibo Chen, 41:5, 2010, 415, C, 0.6
Lattice Cubes, Richard Parris, 42:2, 2011, 118-125

5.6 Curves and surfaces

5.6.1 Parametric and polar curves

Calculus by Mistake, Louise S. Grinstein, 5:4, 1974, 49-53, C, 5.1.2, 5.1.4, 5.2.2, 5.2.3, 5.2.5, 5.2.10, 5.4.2, 5.7.2
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Mathematical Discovery via Computer Graphics: Hypocycloids and Epicycloids, Florence S. Gordon and Sheldon P. Gordon, 15:5, 1984, 440-443
On Hypocycloids and their Diameters, I. J. Schoenberg, 16:4, 1985, 262-267, 9.5
Vectors in a LOGO Learning Environment, Will Watkins, 16:4, 1985, 286-300
Defining Areas in Polar Coordinates, Frances W. Lewis, 17:5, 1986, 414-416, C
Transitions, Jeanne L. Agnew and James R. Choike, 18:2, 1987, 124-133, 0.7, 5.1.3, 9.10
FFF #4. Area of an Ellipse, Ed Barbeau, 20:2, 1989, 132-133, F, 0.5 (also 20:3, 1989, 227)
Connecting the Dots Parametrically: An Alternative to Cubic Splines, Wilbur J. Hildebrand, 21:3, 1990, 208-215, 4.6, 9.6
Moments on a Rose Petal, Douglass L. Grant, 21:3, 1990, 225-227, C, 5.2.5
Single Equations Can Draw Pictures, Keith M. Kendig, 22:2, 1991, 134-139, C, 0.4, 0.5, 5.1.5, 5.6.2
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Rotation of Axes—Not Just for Conics, Steven Schonefeld, 23:5, 1992, 418-425, 0.5
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Does a Parabola Have an Asymptote?, David Bange and Linda Host, 24:4, 1993, 331-342, 5.1.1, 5.1.5
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6 Differential Equations and Dynamical Systems

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FFF #171. Chance of meeting, the editor, 32:1, 2001, 49-50, F
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A Tale of Two Series, Thomas J. Osler and Marcus Wright, 33:2, 2002, 99-106, 5.4.2
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Sums of Uniformly Distributed Variables: A Combinatorial Approach, Jeanne Albert, 33:3, 2002, 201-206, 3.2
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Tossing a Fair Coin, Leonard Lipkin, 34:2, 2003, 128-133
Coin ToGa: A Coin-Tossing Game, Osvaldo Marrero and Paul C. Pasles, 34:3, 2003, 183-193, 9.3
FFF. Random obtuse-angled triangles, Ruma Falk, 34:3, 2003, 226, F
Dice Distributions Using Combinatorics, Recursion, and Generating Functions, Janet M. McShane and Michael I. Ratliff, 34:5, 2003, 370-376, 3.2
FFF #220. Blind sampling, Jerry M. Stelmaszak, 35:1, 2004, 42, F (see also James C. Alexander, Raymond N. Greenwall, Stan Lipovetsky, Barthel Wayne Huff, 35:4, 2004, 298-299)
A Tale of Two Tickets, Marc Brodie, 35:3, 2004, 217-220, C
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The Probability that an Amazing Card Trick Is Dull, Christopher Swanson, 36:3, 2005, 209-212, 3.2
A Geometric Series from Tennis, James Sandefur, 36:3, 2005, 224-226, C, 5.4.2
A Birthday Problem Revisited, Eric Malm, Gail Nord, James Colin Hill, John Nord, 37:2, 2006, 125-128, C
Exhaustive sampling and related binomial identities, Jim Ridenhour and David Grimmett, 37:4, 2006, 296-299, C, 3.2
FFF #257. A certain match, Linda Wagner, 37:5, 2006, 381, F (see also Dale K. Hathaway, 38:5, 2007, 376-377, F)
Maximizing the Probability of a Big Sweepstakes Win, Michael W. Ecker, 38:1, 2007, 32-36
Tennis with Markov, Roman Wong and Megan Zigarovich, 38:1, 2007, 53-55, C, 4.5, 9.9, 9.10
Tennis (and Volleyball) Without Geometric Series, Bruce Jay Collings, 38:1, 2007, 55-57, C, 9.10
Bernstein's Examples on Independent Events, Czeslaw Stepniak, 38:2, 2007, 140-142, C
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Caps and Robbers: What Can You Expect?, Laura A. Zager and George C. Verghese, 38:3, 2007, 185-191
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Dependent Probability Spaces, William F. Edwards, Ray C. Shiflett, and Harris S. Shultz, 39:3, 2008, 221-226, 9.1
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Gerrymandering and Convexity, Jonathan K. Hodge, Emily Marshall, and Geoff Patterson, 41:4, 2010, 312-324, 9.5
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Teaching Tip: Actuarial Science and Gompertz's Law of Mortality, Jesse Byrne, 42:1, 2011, 40-42, 6.1
Mathematical Minute: Removing a Dot, Michael A. Jones, 42:2, 2011, 139 (see also 4. A mathematical minute, 42:5, 2011, 430)
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An Empirical Approach to the St. Petersburg Paradox, Dominic Klyve and Anna Lauren, 42:4, 2011, 260-263, 5.4.2, 7.1, 9.10
Martin Gardner's Mistake, Tanya Khovanova, 43:1, 2012, 20-24, 9.2
The Secretary Problem from the Applicant's Point of View, Darren Glass, 43:1, 2012, 76-81, 3.2
Lake Wobegon Dice, Jorge Moraleda and David G. Stork, 43:2, 2012, 152-159, 3.3, 9.2, 9.9
Designing Medical Tests: The Other Side of Bayes' Theorem, Andrew M. Ross, 43:3, 2012, 251-253, C,

9.10
Winning a Racquetball Match, Tom Brown and Brian Pasko, 43:5, 2012, 395-400, 9.10

7.3 Statistics (also see 9.10)

Cauchy's Inequality and the Least Squares Line, William Stenger, 6:1, 1975, 2-4
Random Charity: A Stochastic Sieving Problem and its Connection with the Euclidean Algorithm, Roland Engdahl and Karl Greger, 6:4, 1975, 4-9
Statistical Inference for the General Education Student—It Can Be Done, Allen H. Holmes, Walter Sanders and John LeDuc, 8:4, 1977, 223-230
The Use of Sports Data for Integrating Topics in Introductory Statistics, Robert L. Heiny, 9:1, 1978, 28-33
Classroom Demonstration of a Confidence Interval, Wayne Andrepont and Peter Dickinson, 9:1, 1978, 34-36
The Range of the Standard Deviation, Lawrence Sher, 10:1, 1979, 33, C
How Close are the Mean and the Median?, Stephen A. Book, 10:3, 1979, 202-204, C
An Expected Value Problem, Harris S. Schultz, 10:4, 1979, 277-278, C
Why n-1 in the Formula for the Sample Standard Deviation?, Stephen A. Book, 10:5, 1979, 330-333
Bounds for the Sum of Absolute Standard Scores, Lawrence Sher, 10:5, 1979, 351-353, C
Correlation—A Vector Approach, Kenneth R. Kundert, 11:1, 1980, 52, C, 5.5
An Expected Value Problem Revisited, W. J. Hall, 11:3, 1980, 204-205
An Analytic Geometry Approach to the Least Squares Line of Best Fit, Stewart Venit and Richard Katz, 11:4, 1980, 270-272, C, 0.5
A Bound for Standard Scores, Lawrence Sher, 11:2, 1980, 334-335, C
A Mean Generating Function, Jack C. Slay and J. L. Solomon, 12:1, 1981, 27-29, 5.1.2
Partial and Semipartial Correlation—A Vector Approach, John Huber, 12:2, 1981, 151-153, C
Another Look at the Mean, Median, and Standard Deviation, Ruma Falk, 12:3, 1981, 207-208, C
Bounds for the Ratio of the Arithmetic Mean to the Geometric Mean, M. Perisastry and V. N. Murty, 13:2, 1982, 160-161, C
Nearness Relations Among Measures of Central Tendency and Dispersion: Part 1, Warren Page and V. N. Murty, 13:5, 1982, 315-326
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Interfractile Ranges, Warren Page, 14:2, 1983, 170-172, C
Uncertainty in Science and Statistics, Clifford H. Wagner, 14:4, 1983, 360-363
Computer Simulations to Clarify Key Ideas of Statistics, Thomas Kersten, 14:5, 1983, 416-420
Some Breakthroughs in Statistical Methodology, Herbert Robbins, 15:1, 1984, 25-29
On the Mean and Standard Deviation of a Random Sample, Vedula N. Murty, 15:1, 1984, 60-62
A Geometrical Interpretation of the Weighted Mean, Larry Hoehn, 15:2, 1984, 135-139, 0.2, 0.4
The Electronic Spreadsheet and Mathematical Algorithms, Deane E. Arganbright, 15:2, 1984, 148-157, 4.1, 5.4.1, 9.6
On the Natural Density of the Niven Numbers, Robert E. Kennedy and Curtis N. Cooper, 15:4, 1984, 309-312, 9.3
Accurate Computation of Variance, Jerry A. Roberts, 16:2, 1985, 149-150
Instances of Simpson's Paradox, Thomas R. Knapp, 16:3, 1985, 209-211, C, 0.2
The Probability that the "Sum of the Rounds" Equals the "Round of the Sum", Roger B. Nelsen and James E. Schultz, 18:5, 1987, 390-396, 7.2, 9.10
Should Mathematicians Teach Statistics?, David S. Moore, 19:1, 1988, 3-7, 1.2
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No! But Who Should Teach Statistics?, Judith Tanur, 19:1, 1988, 8-32, 1.2
Statistics Teachers need Experience With Data, R. Gnanadesikan and J. R. Kettenring, 19:1, 1988, 8-32, 1.2
The Mathematicians' Statistics Has a Subsidiary Role, Barbara A. Bailar, 19:1, 1988, 8-32, 1.2
Growth and Advances in Statistics, Frederick Mosteller, 19:1, 1988, 8-32, 1.2
Statistician, Examine Thyself, Gudmund R. Iversen, 19:1, 1988, 8-32, 1.2
It's Not "By Whom" But Rather "How", John E. Freund, 19:1, 1988, 8-32, 1.2
The Need for Good Teaching of Statistics, Henry L. Alder, 19:1, 1988, 8-32, 1.2
Let the Experts Teach and Judge, David L. Hanson, 19:1, 1988, 8-32, 1.2
Who Teaches What to Whom?, Michael Reed, 19:1, 1988, 8-32, 1.2
What Should the Introductory Statistics Course Contain?, Gerald J. Hahn, 19:1, 1988, 8-32, 1.2
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Theory, Simulation and Reality, Peter Flusser, 19:3, 1988, 210-222, 9.10, 7.2
Using Leverage and Influence to Introduce Regression Diagnostics, David C. Hoaglin, 19:5, 1988, 387-401
Conditional Expectations and the Correlation Function, Barthel W. Huff, 20:1, 1989, 55-57, C
A Note on Pascal's Triangle and Simple Random Sampling, Tommy Wright, 20:1, 1989, 59-66
Using Median Splits to Motivate Learning, David P. Doane, 20:3, 1989, 228-229, C
Sensitive Questions and Randomized Response Techniques, Kenneth R. Kundert, 20:5, 1989, 409-411, C
The Longest Run of Heads, Mark F. Schilling, 21:3, 1990, 196-207
Bernoulli Trials and the Central Limit Theorem, David P. Kraines and Vivian Y. Kraines and David A. Smith, 21:5, 1990, 415-416, C
Using Simulation to Study Linear Regression, LeRoy A. Franklin, 23:4, 1992, 290-295, 9.10
Least Squares and Quadric Surfaces, Donald Teets, 24:3, 1993, 243-244, C, 5.7.1, 5.6.2
Determining Sample Sizes for Monte Carlo Integration, David Neal, 24:3, 1993, 254-262, C, 5.2.2, 9.10
Quadratic Confidence Intervals, Neil C. Schwertman and Larry R. Dion, 24:5, 1993, 453-457, C
Chebyshev's Theorem: A Geometric Approach, Pat Touhey, 26:2, 1995, 139-141, C
MAD Property of Medians: An Induction Proof, Eugene F. Schuster, 26:5, 1995, 387-389, C, 0.9
Will the Real Best Fit Curve Please Stand Up?, Helen Skala, 27:3, 1996, 220-223, C, 5.7.1
What is the Margin of Error of a Poll?, Bennett Eisenberg, 28:3, 1997, 201-203, C
Student’s t and Crackers, Paul M. Sommers, 30:1, 1999, 32-34
Recommendations for Teaching the Reasoning of Statistical Inference, Allan Rossman and Beth Chance, 30:4, 1999, 297-305, 1.1
Getting Normal Probability Approximations Without Using Normal Tables, Peter Thompson and Lorrie Lendvoy, 31:1, 2000, 51-54, C
The Super Bowl Theory: Fourth and Long, Paul Sommers, 31:3, 2000
The Geometry of Statistics, David Farnsworth, 31:3, 2000, 200-204
t-Probabilities as Finite Sums, Neil Eklund, 31:3, 2000, 217-218, C
The Lognormal Distribution, Brian E. Smith and Francis Merceret, 31:4, 2000, 259-261
Food and Drug Interaction: What Role Does Statistics Play?, Thomas Bradstreet, 31:4, 2000, 268-273
Well-Rounded Figures, Yves Nievergelt, 32:1, 2001, 30-32, 9.6
The Average Speed on the Highway, Larry Clevenson, Mark Schilling, Ann Watkins, and William Watkins, 32:3, 2001, 169-171
Is Presidential Greatness Related to Height?, Paul M. Sommers, 33:1, 2002, 14-16
Symmetric or Skewed?, Joseph G. Eisenhauer, 33:1, 2002, 48-51, C

Winning Games in Canadian Football: A Logistic Regression Analysis, Keith A. Willoughby, 33:3, 2002, 215-220
Almost-Binomial Random Variables, Peter Thompson, 33:3, 2002, 235-237, C
Chasing Hank Aaron's Home Run Record, Steven P. Bisgaier, Benjamin S. Bradley, Peter D. Harwood, and Paul M. Sommers, 33:4, 2002, 293-295
Observations on the Indeterminacy of the Sample Correlation Coefficient, Owen Byer, 33:4, 2002, 316-318, C
Baseball's All-Stars: Birthplace and Distribution, Paul M. Sommers, 34:1, 2003, 24-30
A Calculus Theorem Motivated by a Statistics Problem, David L. Farnsworth, 35:2, 2004, 126-129, C
FFF. Teenagers, Sex and Accidents, Joseph G. Eisenhauer, 35:3, 2004, 213-214, F
A Quick Proof that the Least Squares Formulas Give a Local Minimum, W. M. Dunn III, 36:1, 2005, 64-65, C, 5.7.1
A Painless Approach to Least Squares, Eric S. Key, 36:1, 2005, 65-67, C
A Recursive Formula for Moments of a Binomial Distribution, Arpad Benyi and Saverio M. Manago, 36:1, 2005, 68-72, C
The Sample Correlation Coefficient from a Linear Algebra Perspective, C. Ray Rosentrater, 37:1, 2006, 47-50, C, 4.3
An Elegant Mode for Determining the Mode, D. S. Broca, 37:2, 2006, 134-137, C
FFF #252. A snafu, Kenneth Schilling, 37:4, 2006, 290, F
Distortion of average class size: The Lake Wobegon effect, Allen Schwenk, 37:4, 2006, 293-296, C
More Mathematics in the Bedroom: A Paradoxical Probability, Paul K. Stockmeyer, 38:5, 2007, 339-344, 9.4
A Waiting-Time Surprise, Richard Parris, 39:1, 2008, 59-63, C
The Pearson and Cauchy-Schwarz Inequalities, David Rose, 39:1, 2008, 64, C, 5.5, 9.5
Average Perceived Class Size and Average Perceived Population Density, Clifford H. Wagner, 40:4, 2009, 284-287, C
Teaching Tip: The Median is a Balance Point, Mark Lynch, 40:4, 2009, 292, C
Correlation of the Union of Two Bivariate Data Sets, Robert A. Fontenot, 40:5, 2009, 370-373, C
An Upper Bound for the Expected Range of a Random Sample, Manuel Lopez and James Marengo, 41:1, 2010, 42-48
The Distribution of the Sum of Signed Ranks, Brian Albright, 43:3, 2012, 232-236

7.4 Software for probability and statistics

A Mathematics Software Database, R. S. Cunningham and David A. Smith, 17:3, 1986, 255-266, 0.10, 3.4, 4.8, 5.8, 6.7, 9.11
A Mathematics Software Database Update, R. S. Cunningham and David A. Smith, 18:3, 1987, 242-247, 0.10, 3.4, 4.8, 5.8, 6.7, 9.11
The Compleat Mathematics Software Database, R. S. Cunningham and David A. Smith, 19:3, 1988, 268-289, 0.10, 3.4, 4.8, 5.8, 6.7, 9.11
Software Reviews: *Activstats*, Norman Preston, 32:2, 2001, 138-140

8 Computer Science

8.1 Programming and algorithms

Drawing the Line Segment Connecting Two Points, Harley Flanders, 18:1, 1987, 53-57, 0.4, 3.3
Enhancing the Value of Graphics Programs, Clifford H. Wagner, 18:2, 1987, 142-152, 8.3
Controlling Roundoff Errors in Sums, Harley Flanders, 18:2, 1987, 153-156, 9.6
Computing Pi, Harley Flanders, 18:3, 1987, 230-235, 5.2.3, 5.4.2

Fibonacci Numbers and Computer Algorithms, John Atkins and Robert Geist, 18:4, 1987, 328-336, 5.1.4, 6.3
Computing mth Roots, Keith Mathews, 19:2, 1988, 174-176
Sieving Primes on a Micro, Harley Flanders and Alan F. Tomala, 19:4, 1988, 364-367, 9.3
How Mathematicians Know What Computers Can't Do, Leon Harkleroad, 27:1, 1996, 37-42
CORDIC: Elementary Function Computation Using Recursive Sequences, Neil Eklund, 32:5, 2001, 330-333, 9.6
FFF #234. Multiplication algorithms, Yves Nievergelt, 39:2, 2008, 137-138, F, 0.1
The Tower and Glass Marbles Problem, Richard Denman, David Hailey, and Michael Rothenberg, 41:5, 2010, 350-356, 3.2

8.2 Data structures

Generating Posets, Harley Flanders, 18:4, 1987, 323-327, 9.4
The Flowering of String Rewriting Systems, Anne M. Burns, 23:3, 1992, 225-235, 8.3

8.3 Computer graphics

Enhancing the Value of Graphics Programs, Clifford H. Wagner, 18:2, 1987, 142-152, 8.1
Drawing a Circle, Harley Flanders, 19:1, 1988, 72-78
Parametric Surfaces, Harley Flanders, 19:5, 1988, 444-447, 5.6.1
The Curious Fate of an Applied Problem, Alan H. Schoenfeld, 20:2, 1989, 115-123, 5.1.5, 9.5
The Matrix of a Rotation, Roger C. Alperin, 20:3, 1989, 230, C, 4.3
Image Expansion in Integer Arithmetic, Mark Bridger, 22:5, 1991, 429-435
Calculus and Computer Vision, Mark Bridger, 23:2, 1992, 132-141, 5.7.1
The Flowering of String Rewriting Systems, Anne M. Burns, 23:3, 1992, 225-236, 8.2
Fireworks, J. M. A. Danby, 23:3, 1992, 237-240, C, 6.2
Complex Vectors and Image Identification, Lyndell Kerley and Jeff Knisley, 24:2, 1993, 166-174, 9.6
A Computer Lab for Multivariate Calculus, Casper R. Curjel, 24:2, 1993, 175-177, C, 1.2, 5.7.1
Making Mountains from a Sum of Molehills, Anne M. Burns, 26:1, 1995, 51-57
Modeling Trees with a Stochastic Matrix, Anne M. Burns, 29:3, 1998, 230-236, 3.1
Breaking the Holiday Inn Priority Club CAPTCHA, Edward Aboufadel, Julia Olsen, and Jesse Windle, 36:2, 2005, 101-108, 4.7, 9.10

8.4 Other topics in computer science

Of Memories, Neurons, and Rank-One Corrections, Kevin G. Kirby, 28:1, 1997, 2-19, 4.6

9 Other Topics

9.1 Set theory and logic (also see 0.9)

If...Some Suggestions on Presenting the Connector "if...then", Aaron Seligman, 1:2, 1970, 22-26, 0.9
Factoring Functions, J. C. Bodenrader, 2:1, 1971, 23-26, 0.6, 5.1.2, 3.2
Some Applications of the Law of the Contrapositive, Morton J. Hellman, 4:3, 1973, 86-88, C, 0.9
The Equivalence of the Well-Ordering Principle and Dirichlet's Box Principle, Aron Pinker, 5:1, 1974, 76-77, C
Who Dunnit?, Lawrence G. Gilligan and Robert B. Nenno, 5:1, 1974, 78-79, C
Godel's Theorem (Part I), Richard Wiebe, 6:2, 1975, 13-17
Godel's Theorem (Part II), Richard Wiebe, 6:3, 1975, 4-7

Mathematics—Is It Any of Your Business?, Ralph Mansfield, 6:3, 1975, 20-26, 3.1, 1.2
Solving Whodunits by Symbolic Logic, Lawrence Sher, 6:4, 1975, 36-38
On the Definition of Implication: Classroom Discussion and Justification, Ray F. Snipes, 8:4, 1977, 247-252, C
Types of Relations, Kenneth Slonneger, 8:5, 1977, 267-269
Boolean Algebra as a Proof Paradigm, Lawrence Sher, 9:3, 1978, 186-190
Analogies and Metaphors to Explain Godel's Theorem, Douglas R. Hofstadter, 13:2, 1982, 98-114
A Machine as Smart as God, Rudy Rucker, 13:2, 1982, 115-121, 2.2
The Asylum of Doctor Tarr and Professor Fether, Raymond Smullyan, 13:2, 1982, 142-146
Probabilistic Dependence Between Events, Ruma Falk and Maya Bar-Hillel, 14:3, 1983, 240-247, 7.2
A Computational Approach to Logical Statements, J. N. Boyd and P. N. Raychowdhury, 14:4, 1983, 326-341
Is the Venn Diagram Good Enough?, Mou-Liang Kung and George C. Harrison, 15:1, 1984, 48-50, 0.2
The Construction of Venn Diagrams, Branko Grunbaum, 15:3, 1984, 238-247
An Odd Induction Proof, Karl David, 15:3, 1984, 251, C
How to Live to be 100, Robert Geist, 15:4, 1984, 256-263
On Venn Diagrams and the Counting of Regions, Branko Grunbaum, 15:5, 1984, 433-435, C
Satan, Cantor, and Infinity, Raymond M. Smullyan, 16:2, 1985, 118-121
FFF #9. The Countability of the Reals, Ed Barbeau, 20:5, 1989, 403, F, 9.5 (also 21:1, 1990, 36 and 22:5, 1991, 405)
FFF # 10. The Uncountability of the Plane, Ed Barbeau, 20:5, 1989, 403-404, F, 9.5 (also 21:1, 1990, 36)
FFF #36. A Logical "Paradox", Ed Barbeau, 22:2, 1991, 132, F (also 23:3, 1992, 205)
FFF #40. Perron's Paradox, Ed Barbeau, 22:3, 1991, 221, F, 0.2 (also 23:3, 1992, 205 and 24:3, 1993, 231)
Programs for a Logic Course, Richard F. Maruszewski, Jr., 22:3, 1991, 235-240
FFF. Red Hats, Ed Barbeau, 22:4, 1991, 307, F
FFF. Equal Unions, Ed Barbeau, 23:4, 1992, 304-305, F
The Linear Transformation Associated with a Graph: Student Research Project, Irl C. Bivens, 24:1, 1993, 76-78, 3.1, 4.3
Using PROLOG in Discrete Mathematics, Antonio M. Lopez, Jr., 24:4, 1993, 357-365, 3.1, 3.4
FFF #93. An Invalid Argument, Annie Selden and John Selden, 27:1, 1996, 43-44, F
FFF #98. Doggedly Bisexual, Ed Catherall, 27:2, 1996, 116, F
A New Theorem on Cardinality, Charles J. Kicey, 30:1, 1999, 66, C
FFF. There are no contradictions, Theodore G. Ammon, 31:1, 2000, 48-49, F
A Game-Like Activity for Learnng Cantor's Theorem, Shay Gueron, 32:2, 2001, 122-125, C
Comment on *There are no contradictions*, Calvin Jongma, 32:3, 2001, 199-200, F
Comparing Sets of the Empty Set, Allen J. Schwenk, 33:3, 2002, 232-233, C, 9.5
Sets of Sets: A Cognitive Obstacle, Lawrence Brenton, 34:1, 2003, 31-38, 9.4
What Did Lincoln Really Mean?, Paul K. Stockmeyer, 35:2, 2004, 103-104
An Elementary Resolution of the Liar Paradox, James S. Walker, 35:2, 2004, 105-111
Mind Your $\forall$'s and $\exists$'s, Stephen M. Walk, 35:5, 2004, 362-369, 4.3
Mathematics in *War and Peace*, Arthur Neuman, 39:3, 2008, 202, C
Dinner Tables and Concentric Circles: A Harmony of Mathematics, Music, and Physics, Jack Douthett and Richard J. Krantz, 39:3, 2008, 203-211, 3.2, 9.10
Dependent Probability Spaces, William F. Edwards, Ray C. Shiflett, and Harris S. Shultz, 39:3, 2008, 221-226, 7.2
Two Applications of a Hamming Code, Andy Liu, 40:1, 2009, 2-5, 9.2, 9.3
Flaws, Fallacies, and Flimflam: The Limits of Reason, Andrea Rothbart, 42:4, 2011, 264, F
Is Parallelism an Equivalence Relation?, Andy Liu, 42:5, 2011, 372, C, 0.3

9.2 Recreational mathematics (also see 7.1)

The Game of Sprouts, Gordon D. Prichett, 7:4, 1976, 21-25, 3.1
Connect-It Games, Frank Harry and Robert W. Robinson, 15:5, 1984, 411-419, 3.1
Pascal's Triangle, Karl J. Smith, 4:1, 1973, 1-13, 0.6, 3.2
Fibonacci Numbers and Pineapple Phyllotaxy, Judithlynne Carson, 9:3, 1978, 132-136, 5.4.1
Computer-Generated Knight Tours, Michael Gilpin, 13:4, 1982, 252-259, 3.1, 3.3
Isomorphisms on Magic Squares, Ali R. Amir-Moez, 14:1, 1983, 48-51, 0.2, 9.3, 9.4
Sequences, Series, and Pascal's Triangle, Lenny K. Jones, 14:3, 1983, 253-256, C, 5.4.2, 6.3
Paths and Pascal Numbers, John F. Lucas, 14:4, 1983, 329-341, 3.2
A Tiling of the Plane with Triangles, Paul T. Mielke, 14:5, 1983, 377-381, 0.3, 9.3
Pascal's Triangle, Difference Tables and Arithmetic Sequences of Order N, Calvin Long, 15:4, 1984, 290-298, 3.2, 5.4.1, 6.3
The Pascal Polytope: An Extension of Pascal's Triangle to N Dimensions, John F. Putz, 17:2, 1986, 144-155, 3.2, 5.4.1, 6.3
Pascal Triangles and Combinations Where Repetitions Are Allowed, Kendell Hyde, 19:1, 1988, 60-62, C, 3.2
Musical Notes, Angela B. Shiflet, 19:4, 1988, 345-347, C, 7.2, 3.2
It's Magic! Multiplication Theorems for Magic Squares, Daniel Widdis and R. Bruce Richter, 20:4, 1989, 301-306, 3.2, 9.3
A Complete Solution to the Magic Hexagram Problem, Harold Reiter and David Ritchie, 20:4, 1989, 307-316, 9.2, 9.4
Permutation Puzzles: Student Research Project, John H. Wilson, 24:2, 1993, 163-165, 3.2
FFF. A Centennial Tribute to Sam Loyd, Dean Clark, 23:5, 1992, 402-404, F
A Mathematical Crossword Puzzle, James Leslie, 29:4, 1998, 295, C
Digits in Triangular Squares, Dipendra Sengupta, 30:1, 1999, 31, C
Modeling Mathematics With Playing Cards, Martin Gardner, 31:3, 2000, 173-177
On Lunda-Designs and the Construction of Associated Magic Squares of Order 4p, Paulus Gerdes, 31:3, 2000, 182-188, 0.3
Numerology Marches On, David Singmaster, Lawrence Braden, Peter Y. Woo and Brian Stewart Watts, 31:3, 2000, 236-237, C
Some New Results on Magic Hexagrams, Martin Gardner, 31:4, 2000, 274-280, 3.2
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The Lord Over Better and Worse Births, John Fossa and Glenn Erickson, 32:3, 2001, 185-193, 9.3
Magic Squares, Finite Planes, and Points of Inflection on Elliptic Curves, Ezra Brown, 32:4, 2001, 260-267, 5.1.3, 9.3
Miscellanea: Clock Arithmetic, Carlton A. Lane, 32:4, 2001, 317, C
A Visit With Six, Monte J. Zerger, 33:2, 2002, 74-87, 9.3
A Poem: A Meeting with Sunya, V. V. Dixit, 33:2, 2002, 166-167, C
Nine Cubits or Simple Soma, Richard K. Guy and Marc M. Paulhus, 33:3, 2002, 188-195, 9.7
The “Origin” of Geometry, Reuben Hersh, 33:3, 2002, 207-211, 0.3, 2.1
Alice in Numberland: An Informal Dramatic Presentation in 8 fits, Robin Wilson, 33:5, 2002, 354-377
Lewis Carroll’s Amazing Number-Guessing Game, Richard F. McCoart, 33:5, 2002, 378-383, 0.2
A 51-star U. S. Flag, Gary Kennedy, 34:2, 2003, 170-171, C
Linearizing Mile Run Times, Garrett I. Ash, J. Marshall Ash, and Stefan Catoiu, 35:5, 2004, 370-374, 0.1
FFF #233. Measuring humour, Timandra Harkness and Helen Pilcher, 36:1, 2005, 50-51, F
How to Ensure That Level Heads Prevail, Shmuel Zamir and Ruma Falk, 36:5, 2005, 396, 418, C
Graeco-Latin Squares and a Mistaken Conjecture of Euler, Dominic Klyve and Lee Stemkoski, 37:1, 2006, 2-15, 3.2, 9.4
A Card Trick and the Mathematics Behind It, Gabriela R. Sanchis, 37:2, 2006, 103-109, 9.5
The Non-Attacking Queens Game, Hassan Noon and Glen Van Brummelen, 37:3, 2006, 223-227, C

We Didn't Start Mathematics (song lyrics), Brian Beasley, 38:3, 2007, 204, 209, C
The Number-Pad Game, Alex Fink and Richard Guy, 38:4, 2007, 260-264
Hermit Points on a Box, Richard Hess, Charles Grinstead, Marshall Grinstead, and Deborah Bergstrand, 39:1, 2008, 12-23, 0.4, 5.7.1
Number Place – The First Sudoku, Ed Pegg, Jr., 39:1, 2008, 33, C
Finding All Solutions to the Magic Hexagram, Alexander Karabegov and Jason Holland, 39:2, 2008, 102-106, 3.2
They Say Mathematics is Beautiful (poem), Kung-Ming Tiong, 39:2, 2008, 128, C
Poem: Mathematical Slumber, Lee Ann Leung, 39:4, 2008, 298, C
Fetching Water with Least Residues, Herb Bailey, 39:4, 2008, 304-306, C, 9.3
You *Can* Teach an Old Magician New Tricks, John P. Bonomo, 39:5, 2008, 346-356
Tuning with Triangles, Leon Harkleroad, 39:5, 2008, 367-373, 2.2
FFF #286. Lines of cubes in a block, Ed Barbeau, 39:5, 2008, 383, F, 3.2
Sam Loyd's Courier Problem with Diophantus, Pythagoras, and Martin Gardner, Owen O'Shea, 39:5, 2008, 387-391, C, 0.2, 0.7
Two Applications of a Hamming Code, Andy Liu, 40:1, 2009, 2-5, 9.1, 9.3
Solomon's Sea and Pi, Andrew J. Simoson, 40:1, 2009, 22-32, 0.4, 2.1
Winning at Rock-Paper-Scissors, Derek Eyler, Zachary Shalla, Andrew Doumaux, and Tim McDevitt, 40:2, 2009, 125-128, C, 7.1, 7.2
L-Tromino Tiling of Mutilated Chessboards, Martin Gardner, 40:3, 2009, 162-168, 9.7
Polyomino Problems to Confuse Computers, Stewart Coffin, 40:3, 2009, 169-172, 9.7
Puzzling Mechanisms, M. Oskar van Deventer, 40:3, 2009, 173, 180-181, 193-195, 201-203, 211
Set of Mutually Orthogonal Sudoku Latin Squares, Ryan M. Pedersen and Timothy L. Vis, 40:3, 2009, 174-180, 9.4
Jeeps Penetrating a Hostile Desert, Herb Bailey, 40:3, 2009, 182-188, 9.9, 9.10
Three Poems, Caleb Emmons, 40:3, 2009, 188, 0.1
Flipping Triangles!, Marc Zucker, 40:3, 2009, 189-193, 3.1
n-Card Tricks, Hang Chen and Curtis Cooper 40:3, 2009, 196-201, 3.2
Reflections on the $N + k$ Queens Problem, R. Douglas Chatham, 40:3, 2009, 204-210, 3.2, 4.1
Crossword Puzzle: $\pi_1 \cong Z \oplus Z$, Gary Kennedy, 40:3, 2009, 212
We shall find the Cube of the Rainbow (poem), Emily Dickinson, 40:5, 2009, 336, C
MoonPi, Bathsheba Grossman, 40:5, 2009, 344, C
To Divine Proportion (poem), Rafael Alberti, 40:5, 2009, 375, C
Brown Sharpie: Advanced Frisbee Calculus, Courtney ??, 41:1, 2010, 16, C
Grobner Basis Representations of Sudoku, Elizabeth Arnold, Stephen Lucas, and Laura Taalman, 41:2, 2010, 101-111, 9.4
Sonnet (poem), Susan Colley, 41:2, 2010, 144, C
Three Poems, Nicole Yunger Halpern, 41:3, 2010, 233-234, C
How Bound Tetrahedron Wraps a Real Tetrahedron, Roger Berry, 41:5, 2010, 356, C, 0.3
Poem: A Little Love Story, Bonnie Shulman, 41:5, 2010, C
Chutes and Ladders for the Impatient, Leslie A. Cheteyan, Stewart Hengeveld, and Michael A. Jones, 42:1, 2011, 2-8, 6.3, 7.2, 9.10
How *Iterated Mobius* was constructed, Anne Burns, 42:1, 2011, 14, C
Mathematical Jeopardy?, Andy Liu, 42:1, 2011, 24, C
Boundary Conditions (poem), Ursula Whitcher, 42:1, 2011, 56, C
Mathematics at the Movies, Martin J. Erickson, 42:3, 2011, 228, C
Folding Polyominoes from One Level to Two, Greg N. Frederickson, 42:4, 2011, 265-274, 0.3, 9.7
The Easiest Lights Out Games, Bruce Torrence, 42:5, 2011, 361-371, 4.1, 4.3
Student Research Project: One-dimensional Czedli-type Islands, Eszter K. Horvath, Attila Mader, and Andreja Tepavcevic, 42:5, 2011, 374-378, C, 0.9, 3.2, 9.3

Averaging Sums of Powers of Integers, Thomas J. Pfaff, 42:5, 2011, 402-403, C, 3.2, 9.3
Hexaflexagons, Martin Gardner, 43:1, 2012, 2-5, 0.3, 3.2, 9.4, 9.8
The V-flex, Triangle Orientation, and Catalan Numbers in Hexaflexagons, Ionut E. Iacob, Bruce McLean, and Hua Wang, 43:1, 2012, 6-10, 0.3, 3.1, 3.2, 5.4.1, 9.8
From Hexaflexagons to Edge Flexagons to Point Flexagons, Les Pook, 43:1, 2012, 11-14, 0.3, 3.1, 9.4, 9.8
Cups and Downs, Ian Stewart, 43:1, 2012, 15-19, 3.2, 4.1
Martin Gardner's Mistake, Tanya Khovanova, 43:1, 2012, 20-24, 7.2
Mad Tea Party Cyclic Partitions, Robert Bekes, Jean Pedersen, and Bin Shao, 43:1, 2012, 25-36, 3.2, 9.3
Triangular Numbers, Gaussian Integers, and KenKen, John J. Watkins, 43:1, 2012, 37-42, 0.1, 9.3
Carryless Arithmetic Mod 10, David Applegate, Marc LeBrun, and N. J. A. Sloane, 43:1, 2012, 43-50, 0.1, 5.4.1, 9.4
Bracing Regular Polygons As We Race into the Future, Greg N. Frederickson, 43:1, 2012, 51-57, 0.3
Squaring, Cubing, and Cube Rooting, Arthur T. Benjamin, 43:1, 2012, 58-63, 0.1, 0.2
A Platonic Sextet for Strings, Karl Schaffer, 3:1, 2012, 64-69, 0.3, 3.1
The Play's the Thing! (crossword puzzle), Gary Kennedy and Stephen Kennedy, 43:1, 2012, 70-71, 9.2
Magic Knight's Tours, John D. Beasley, 43:1, 2012, 72-75, 9.2
Polyomino Dissections, Tiina Hohn and Andy Liu, 43:1, 2012, 88-94, 0.3
30 Years of Bulgarian Solitaire, Brian Hopkins, 43:2, 2012, 135-140, 3.2, 9.3
Retrolife and the Pawns Neighbors, Yossi Elran, 43:2, 2012, 147-151, 3.3, 9.10
Lake Wobegon Dice, Jorge Moraleda and David G. Stork, 43:2, 2012, 152-159, 3.3, 7.2, 9.9
RATWYT, Aviezri S. Fraenkel, 43:2, 2012, 160-164, 3.1, 3.2
The Spider and the Fly, Keith E. Mellinger and Raymond Viglione, 43:2, 2012, 169-172, C, 0.4

9.3 Number theory (also see 0.1)

The Irrationality of Certain Numbers, Peter A. Lindstrom, 1:1, 1970, 30-31, 0.2
F(1) Rejection Theorem, Howard Sarr, 1:2, 1970, 39-40
F(1) and F(d) Rejection Theorems, William I. Miller, 2:2, 1971, 95-96
Pythagorean Triples by Geometry, Steven L. Kleiman, 3:1, 1972, 39-41
Anomalous Cancellation, R. P. Boas, Jr., 3:2, 1972, 21-24
ab=c, Sidney Penner, 4:2, 1973, 86-87, C
Fermat Numbers, W. G. Leavitt, 4:3, 1973, 7-10
Random Sieving and the Prime Number Theorem, Karl Greger, 5:1, 1974, 41-46, 5.3.2
The Computer as an Aid to Discovery, Frederick H. Young, 5:3, 1974, 55-57
On Generalized h-Base, Norman Woo, 6:3, 1975, 16-17
Quasi-Pythagorean Triples for an Oblique Triangle, Kay Dundas, 8:3, 1977, 152-155, 0.6
Methods of Random Number Generation, Edwin G. Landauer, 8:5, 1977, 296-303
A Note on Angle Construction, Richard L. Francis, 9:2, 1978, 73-75
The Pigeonhole Principle, Kenneth R. Rebman, 10:1, 1979, 3-13, 3.1
Triangular Squares, Bill Leonard and Harris S. Schultz, 10:3, 1979, 169-171
Two Distinguished Integers, Ross Honsberger, 10:3, 1979, 195-197
Billiard Balls and a Number Theory Result, Charles H. Jepsen, 10:5, 1979, 306-312
The Use of Generating Functions to Discover and Prove Partition Identities, Henry L. Alder, 10:5, 1979, 318-329
On Sets of Points in the Plane and A Property of the Binomial Coefficients, Ross Honsberger, 11:2, 1980, 116-119, 0.3
A Combinatorial Proof of Euler's Formula, Iain T. Adamson, 11:4, 1980, 272-273, C, 3.2
Another Derivation of a Double Inequality, Norman Schaumberger, 11:4, 1980, 273, C
An Elementary Gem Concerning pi(n), the Number of Primes less than or equal to n, Ross Honsberger, 11:5, 1980, 305-312

Factoring Factorials, Richard J. Friedlander, 12:1, 1981, 12-20
A Geometric Motivation of Fermat's Factoring Method, Michael Ratliff, 12:1, 1981, 24-27
Short Stories in Number Theory, Ross Honsberger, 12:1, 1981, 34-40
Some Conjectures on Fermat's Last Conjecture, Lawrence Sher and David Sher, 12:1, 1981, 51-52, C
Applying Complex Arithmetic, Herbert L. Holden, 12:3, 1981, 190-194, 0.6, 5.3.1, 9.5
Short Stories in Number Theory—Part II, Ross Honsberger, 12:4, 1981, 280-282
Forward and Backward with Euclid, Gary E. Stevens, 12:5, 1981, 302-306
How Many Positive Integers Have Nines in Their Decimal Representations?, Calvin T. Long, 12:5, 1981, 320-324
Short Stories in Number Theory—Part III, Ross Honsberger, 12:5, 1981, 325-329
A Classroom Approach to x^2 + y^2 + z^2 = w^2, Norman Schaumberger, 12:5, 1981, 331-332, C, 0.4
Synthetic Division Shortened, Warren Page and Leo Chosid, 12:5, 1981, 334-336, C, 0.7
Smith Numbers, A. Wilansky, 13:1, 1982, 21, 0.1
Semi-Regular Lattice Polygons, Ross Honsberger, 13:1, 1982, 36-44, 3.1
A Simple Divisibility Algorithm, David Y. Hsu, 13:1, 1982, 58-59, C, 0.2
Remark on an Elementary Gem Concerning PI(n), Branislav Martic, 13:2, 1982, 158-159, C
Sums of Powers of the First n Integers, David Y. Hsu, 13:3, 1982, 196-197, C
Representable Integers, Ross Honsberger, 13:4, 1982, 260-265
Isomorphisms on Magic Squares, Ali R. Amir-Moez, 14:1, 1983, 48-51, 0.2, 5.4.1, 9.2, 9.4
A Prime-Generating Function, Donald D. Elliot, 14:1, 1983, 57, C
The Alluring Lore of Cyclic Numbers, Michael W. Ecker, 14:2, 1983, 105-109
License Numbers and Divisibility Rules, Harry Hutchins, 14:2, 1983, 122-125
Minimization Based on the Greatest Common Divisor, David Y. Hsu, 14:2, 1983, 165-166, C
Congruences of Cyclotomic Polynomials, Phyllis Lefton, 14:3, 1983, 257-258, C
SSD Persistence: A Mathematical System for Student Investigation, John Scheding, 14:4, 1983, 309-312, 1.2
A Tiling of the Plane with Triangles, Paul T. Mielke, 14:5, 1983, 377-381, 0.3, 9.2
The Address Problem, Michael Tennor, 14:5, 1983, 407-414, 0.2
Digital Roots of Mersenne Primes and Even Perfect Numbers, Syed Asadulla, 15:1, 1984, 53-54, C
Integer-Sided Triangles with One Angle Twice Another, R. S. Luthar, 15:1, 1984, 55-56, C, 0.6
The Distribution of First Digits, Stephen H. Friedberg, 15:2, 1984, 120-125, 7.2
Repeating Decimals, W. G. Leavitt, 15:4, 1984, 299-308
On the Natural Density of the Niven Numbers, Robert E. Kennedy and Curtis N. Cooper, 15:4, 1984, 309-312, 7.3
Pythagorean Systems of Numbers, Joseph Wiener, 15:4, 1984, 324-326, C, 0.2, 0.4
An Approach to Problem-Solving Using Equivalence Classes Modulo n, James E. Schultz and William F. Burger, 15:5, 1984, 401-405, 0.2
The Computation of Repeating Decimals, T. E. Ganter, 15:5, 1984, 436-440
What Do I Know? A Study of Mathematical Self-Awareness, Philip J. Davis, 16:1, 1985, 22-41, 0.2
Generalized Pythagorean Triples, W. J. Hildebrand, 16:1, 1985, 48-52, 0.6, 5.5
Medical Cozenage on Fermat's Last Theorem, Lee Whitt, 16:1, 1985, 55-56, C
The House Number Problem and its Variations, Joey Paul, 16:2, 1985, 108-117
A New Divisibility Algorithm, Joseph Whittaker, 16:4, 1985, 268-276, 0.2
The International Mathematical Olympiad Training Session, Cecil Rousseau and Gregg Patruno, 16:5, 1985, 362-365, 0.3, 2.2
Computing Large Factorials, Gerard Kiernan, 16:5, 1985, 403-412, 9.6
Angling for Pythagorean Triples, Dan Kalman, 17:2, 1986, 167-168, C, 0.4
From None to Infinity: Challenging Problems in Cardinality Classification, Richard L. Francis, 17:3, 1986, 226-230
The Distribution of First j Digits, S. A. Patil and V. R. R. Uppuluri, 17:3, 1986, 240-243, C

Cryptology: From Ceasar Ciphers to Public-Key Cryptosystems, Dennis Luciano and Gordon Prichett, 18:1, 1987, 2-17, 7.2, 0.1
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Generating Functions, William Watkins, 18:3, 1987, 195-211, 6.3, 5.4.2
The Chinese Remainder Problem and Polynomial Interpolation, Isaac J. Schoenberg, 18:4, 1987, 320-322, C
On Partitioning a Real Number, William Staton, 19:1, 1988, 53-54, C, 5.1.4
Mathematical Haystacks: Another Look at Repunit Numbers, Richard L. Francis, 19:3, 1988, 240-246
Involutions and Problems Involving Perimeters and Area, Joseph Wiener and Henjin Chi and Hushang Poorkarimi, 19:3, 1988, 250-252, C, 9.5
Sieving Primes on a Micro, Harley Flanders and Alan F. Tomala, 19:4, 1988, 364-367, 8.1
Amalgamation fo Formulae for Sequences, N. S. Mendelsohn, 19:5, 1988, 421-424, C
Pseudorandom Number Generators and a Four-Bit Computer System, James C. Reber, 20:1, 1989, 54-55, C, 6.3, 9.10
Finding Rational Roots of Polynomials, Don Redmond, 20:2, 1989, 139-141, C, 0.7
It's Magic! Multiplication Theorems for Magic Squares, Daniel Widdis and R. Bruce Richter, 20:4, 1989, 301-306, 3.2, 9.2
Locating Multiples of Primes in Pascal's Triangle, Lawrence O. Cannon, 20:4, 1989, 324-328, C
Strings of Strongly Composite Integers and Invisible Lattice Points, Peter Schumer, 21:1, 1990, 37-40, C
Computer-Aided or Analytic Proof?, Herve Lehning, 21:3, 1990, 228-239
Student Research Projects: Self-esteem in Mathematics, Herbert S. Wilf, 21:4, 1990, 274-277, 1.2
Triangles with Integer Sides and Sharing Barrels, David Singmaster, 21:4, 1990, 278-285, 0.4
The Birth of the Eotvos Competition, Agnes Arvai Wieschenberg, 21:4, 1990, 286-293, 2.2
Polar Summation, Loretta McCarty, 21:5, 1990, 397-398, C
Another Proof of the Irrationality of the Square Root of 2, Enzo R. Gentile, 22:2, 1991, 143, C
Secrets of the Faro: Student Research Project, Irl C. Bivens, 22:2, 1991, 144-147, 9.4
The Mathematics of Identification Numbers, Joseph A. Gallian, 22:3, 1991, 194-202, 9.4
Reward of the Rings: Student Research Projects, Irl C. Bivens, 22:5, 1991, 418-420, 9.4
Summation by Parts, Gregory Fredricks and Roger B. Nelsen, 23:1, 1992, 39-44, C, 5.1.2, 5.4.1, 5.4.2
The Probability that (a, b)=1, Aaron D. Abrams and Matteo J. Paris, 23:1, 1992, 47, C
Number Theory and Linear Algebra: Exact Solutions of Integer Systems, George Mackiw, 23:1, 1992, 52-58, 4.1
A Serendipitous Application of the Pythagorean Triplets, Susan Forman, 23:4, 1992, 312-314, C, 0.2
Primitive Pythagorean Triples: Student Research Project, Ernest J. Eckert, 23:5, 1992, 413-417
Sums of Triangular Numbers, Roger B. Nelsen, 23:5, 1992, 417, C
Geometry: A Gateway to Understanding, Peter Hilton and Jean Pedersen, 24:4, 1993, 298-317, 0.3
Towers of Powers Modulo m, Robert J. MacG. Dawson, 25:1, 1994, 22-28
Eisenstein's Misunderstood Geometric Proof of the Quadratic Reciprocity Theorem, Reinhard C. Laubenbacher and David J. Pengelley, 25:1, 1994, 29-34
Frequencies of Digits in Factorials: An Experimental Approach, Michael L. Treuden, 25:1, 1994, 48-55
Euclid's (Gaussian) Algorithm: A Lattice Approach, Steve Benson, 25:2, 1994, 118-124
Approaches to the Formula for the nth Fibonacci Number, Russell Jay Hendel, 25:2, 1994, 139-142, C, 0.2, 4.5, 5.4.2, 9.5
Sums of Odd Squares, Roger B. Nelsen, 25:3, 1994, 246, C
Prime Number Records, Paulo Ribenboim, 25:4, 1994, 280-290
Investigation of a Recurrence Relation: Student Research Project, Dmitri Thoro and Linda Valdes, 25:4, 1994, 322-324, 3.2, 6.3
A Mathematica'l Magic Trick, Stan Wagon, 25:4, 1994, 325-326, C
FFF #79. A Divisibility Property, Ed Barbeau, 25:5, 1994, 433, F
FFF #82. Why Wiles' Proof of the Fermat Conjecture is False, Ed Barbeau, 25:5, 1994, 434-435, F, 9.7

The Repeating Integer Paradox, Paul Fjelstad, 26:1, 1995, 11-15
A Taylor-made Plug for Wiles' Proof, Nigel Boston, 26:2, 1995, 100-105
More Mathematical Gems, Ross A. Honsberger, 26:4, 1995, 281-283, 9.5
A Surprise Regarding the Equation phi(x) = 2(6n+1), Joseph B. Dence and Thomas P. Dence, 26:4, 1995, 297-301
Exploring Fibonacci Numbers Mod M, Jack Ryder, 27:2, 1996, 122-124, C, 3.3
The Square of Any Odd Number is the Difference Between Two Triangular Numbers (Proof Without Words), Roger B. Nelsen, 27:2, 1996, 118, C, 0.1
Fractions with Cycling Digit Patterns, Dan Kalman, 27:2, 1996, 109-115, 0.1
Pythagorean Triples: The Hyperbolic View, Raymond A. Beauregard and E. R. Suryanarayan, 27:3, 1996, 170-181, 9.4
FFF #108. All Perfect Numbers Are Even, Ari Turner, 27:4, 1996, 283, F
Generalizations of a Mathematical Olympiad Problem, Joe Klerlein and Scott Sportsman, 27:4, 1996, 296-297, 3.2
Three Applications of a Familiar Formula, Robert A. Fontenot, 27:5, 1996, 356-360
Periodic Points of the Difference Operator, Chris Bernhardt and Thomas Yuster, 2:1, 1997, 20-26
Digital Permutations, Bryan Dawson, 28:1, 1997, 26, C
A Long Sequence of Composite Numbers, Ed Pegg, Jr., 28:2, 1997, 121, C
Fibonacci Powers and a Fascinating Triangle, Dale K. Hathaway and Stephen L. Brown, 28:2, 1997, 124-128, C, 3.3, 6.3
Two Identities for Triangular Numbers (proof by picture), Roger B. Nelsen, 28:3, 1997, 197, C
On Dividing Coconuts: A Linear Diophantine Problem, Sahib Singh and Dip Bhattacharya, 28:3, 1997, 203-204, C, 5.4.3
Are There Functions That Generate Prime Numbers?, Paulo Ribenboim, 28:5, 1997, 352-359
The Brahmagupta Triangles, Raymond A. Beauregard and E. R. Surynarayan, 29:1, 1998, 13-17, 0.4
A Class of Pleasing Periodic Designs, Federico Fernandez, 29:1, 1998, 18-26, 4.3, 9.4
Making Squares from Pythagorean Triangles, Charles Jepsen and Roc Yang, 29:4, 1998, 284-288, 9.7
On Factoring n with the b-algorithm, Vincent Lucarelli, 29:4, 1998, 289-295
Egyptian Fractions and the Inheritance Problem, Premchand Anne, 29:4, 1998, 296-300
More Coconuts, Sidney H. Kung, 29:4, 1998, 312-313, C, 0.1
Square Roots From 1;24,51,10 to Dan Shanks, Ezra Brown, 30:2, 1999, 82-95
From Euler to Fermat, Hidefumi Katsuura, 30:2, 1999, 118-119, 9.5
Palindromic Primes, Harvey Dubner, 30:4, 1999, 292, C
Powers as Uniform Sums of Positive Squares, Robert J. Wisner, 30:4, 1999, 293-296
Progress on the Tarry-Escott-Prouhet Problem, the editor, 31:1, 2000, 68, C
Recursions That Produce Pythagorean Triples, Peter W. Wade and William R. Wade, 31:2, 2000, 98-101
General Arithmetic Triangles and Bhaskara's Equation, Raymond Beauregard and E. R. Surynarayan, 31:2, 2000, 111-115
Three Fermat Trails to Elliptic Curves, Ezra Brown, 31:3, 2000, 162-172
Meta-Problems in Mathematics, Al Cuoco, 31:5, 2000, 373-378, 0.7, 5.1.2
A Polynomial with a Root Mod *m* for Every *m*, Allen J. Schwenk, 31:5, 2000, 403-405, C, 9.4
The Lord Over Better and Worse Births, John Fossa and Glenn Erickson, 32:3, 2001, 185-193, 9.2
Magic Squares, Finite Planes, and Points of Inflection on Elliptic Curves, Ezra Brown, 32:4, 2001, 260-267, 5.1.3, 9.2
Powers Made Easy, James Kirby, 32:5, 2001, 329, C, 0.1
Close!, Noam Elkies, 33:1, 2002, 16, C
A Visit With Six, Monte J. Zerger, 33:2, 2002, 74-87, 9.2
It's Perfectly Rational, Philip K. Hotchkiss, 33:2, 2002, 113-117, 5.1.4
A Ramanujan Result Viewed From Matrix Algebra, Raymond A. Beauregard and E. R. Suryanarayan, 33:3, 2002, 212-214, 4.1, 9.4

Fermat's Little Theorem From the Multinomial Theorem, Thomas J. Osler, 33:3, 2002, 239, C
A Generalized Chinese Remainder Theorem, Fredric T. Howard, 33:4, 2002, 279-282
A Numerical Introduction to Partial Fractions, Eric L. McDowell, 33:5, 2002, 400-403, C, 5.2.4
A Magic Trick from Fibonacci, James Smoak and Thomas J. Osler, 34:1, 2003, 58-60, C
Recursive Enumeration of Pythagorean Triples, Darryl McCullough and Elizabeth Wade, 34:2, 2003, 107-111
Rational Boxes, Sidney Kung, 34:3, 2003, 182, C, 5.1.4
Coin ToGa: A Coin-Tossing Game, Osvaldo Marrero and Paul C. Pasles, 34:3, 2003, 183-193, 7.2
Variations on a Theme from Pascal's Triangle, Thomas J. Osler, 34:3, 2003, 216-223
Partitioning Triangular Numbers, Matthew Haines and Michael Jones, 34:4, 2003, 295, C
A large square consisting only of digits 7, 8 and 9, Hisanori Mishima, 34:4, 2003, 303, C, 0.1
On a Diophantine Equation and its Ramifications, Titu Andreescu and Dorin Andrica, 35:1, 2004, 15-21
Midy's (Nearly) Secret Theorem – An Extension After 165 Years, Brian D. Ginsberg, 35:1, 2004, 26-30
Five Mathematicians, a Bunch of Coconuts, a Monkey, and a Coin, John E. Morrill, 35:4, 2004, 256-257
On a Three-Dimensional Generalization of Fermat's Area Theorem, Raymond A. Beauregard and Konstantine D. Zelator, 35:4, 2004, 289-291
Discovering Roots: Ancient, Medieval, and Serendipitous, Bryan Dorner, 36:1, 2005, 35-43, 0.2, 2.1, 4.5
Irrational Roots of Integers, Ayshhyah Khazad and Allen J. Schwenk, 36:1, 2005, 56-57, C (see also 36:4, 317)
An Upper Bound on the *n*th Prime, John H. Jaroma, 36:2, 2005, 158-159, C
M&m Sequences, Harris S. Shultz and Ray C. Shiflett, 36:3, 2005, 191-198, 6.3
On Sums of Cubes, Hajrudin Fejzic, Dan Rinne, and Bob Stein, 36:3, 2005, 226-228, C
Curious Consequences of a Miscopied Quadratic, Jeffrey L. Poet and Donald L. Vestal, Jr., 36:4, 2005, 273-277
On Primes, Density Measures, and Statistical Independence, Yung-Pin Chen, 36:4, 2005, 284-288, 7.2
A Perplexing Polynomial Puzzle, Revisited, Folkmar Bernemann and Stan Wagon, 36:4, 2005, 288, C
Visibles Revisited, Mark Bridger and Andrei Zelevinsky, 36:4, 2005, 289-300
FFF #241. A triangle condition, Ed Barbeau, 36:4, 2005, 315-316, F (see also Ken McCaffrey, 37:3, 2006, 215-216, F)
A Variant of the Partition Function, John F. Loase, David Lansing, Cassie Hryczaniuk, and Jamie Cahoon, 36:4, 2005, 320-321, C
Exactly When Is $(a+b)^n$ equivalent to $a^n + b^n \pmod{n}$?, Pratibha Ghatage and Brian Scott, 36:4, 2005, 322, C
Ramanujan's Continued Fraction for a Puzzle, Poo-Sung Park, 36:5, 2005, 363-365 (Errata on 37:5, 2006, 369)
A Paper-and-Pencil gcd Algorithm for Gaussian Integers, Sandor Szabo, 36:5, 2005, 374-380, 9.4
A Two-Parameter Trigonometry Series, Xiang-Qian Chang, 36:5, 2005, 408-412, C, 9.5
Using Random Tilings to Derive a Fibonacci Congruence, Keith Neu and Paul Deiermann, 37:1, 2006, 44-47, C
Parity and Primality of Catalan Numbers, Thomas Koshy and Mohammad Salmassi, 37:1, 2006, 52-53, C, 3.2
Student Research Project: Integer Points on a Hyperboloid of One Sheet, Margaret Beattie and Chester Weatherby, 37:1, 2006, 54-58, C
No Arithmetic Cyclic Quadrilaterals, Raymond A. Beauregard, 37:2, 2006, 110-113
Searching for Mobius, Al Cuoco, 37:2, 2006, 137-142, C
Where are the zeros of zeta of s? (poem), Tom M. Apostol, 37:2, 2006, 163, C
What Tom Apostol Didn't Know (poem), Saunders MacLane, 37:2, 2006, 164, C
Fibonacci Identities via the Determinant Sum Property, Michael Z. Spivey, 37:4, 2006, 286-289, 3.2, 4.2
FFF. Sums of 12^{th} powers, Ed Barbeau, 37:4, 2006, 292, F
More Designer Decimals: The Integers and Their Geometric Extensions, O-Yeat Chan and Jim Smoak,

37:5, 2006, 355-363
FFF #260. Increasing a square to a square, Chris Fisher, 38:1, 2007, 43, F, 0.2
Freaky fractions, Rick Kreminsky, 38:1, 2007, 46, C, 0.1
Fibonacci-Like Sequences and Pell Equations, Ayoub B. Ayoub, 38:1, 2007, 49-53, C
Sums of Consecutive Integers, Wai Yan Pong, 38:2, 2007, 119-123
Pythagorean Triples with Square and Triangular Sides, Sharon Brueggeman, 38:2, 2007, 138-140, C
Surprising Connections between Partitions and Divisors, Thomas J. Osler, Abdulkadir Hassan, and Tirupathi R. Chandrupatla, 38:4, 2007, 278-287
Student Research Project: From Cyclic Sums to Projective Planes, Roger Zarnowski, 38:4, 2007, 304-308, 9.7
Partial Fractions in Calculus, Number Theory, and Algebra, C. A. Yackel and J. K. Denny, 38:5, 2007, 362-374, 5.2.4, 9.4
Summing Up the Euler phi Function, Paul Loomis, Michael Plytage, and John Polhill, 39:1, 2008, 34-42
A Quick Change of Base Algorithm for Fractions, Juan B. Gil and Michael D. Weiner, 39:1, 2008, 56-59, C
A New Property of Repeating Decimals, Jane Arledge and Sarah Tekansik, 39:2, 2008, 107-111
Remainder Wheels and Group Theory, Lawrence Brenton, 39:2, 2008, 129-135, 0.1, 9.4
On the Number of Trailing Zeros in *n*!, David S. Hart, James E. Marengo, Darren A. Narayan and David S. Ross, 39:2, 2008, 139-141, C
Centaurs: Here, There, Everywhere!, Dimitri Dziabenko and Oleg Ivrii, 39:4, 2008, 267-272, 6.3, 9.5
Fetching Water with Least Residues, Herb Bailey, 39:4, 2008, 304-306, C, 9.2
Leftist Numbers, Andrew Rich, 39:5, 2008, 330-336, 9.4
Report from the Ambassador to Cida-2, Clifton Cunningham, 39:5, 2008, 337-345, 9.5
An Elementary Trigonometric Equation, Victor H. Moll, 39:5, 2008, 395-399, C, 0.6
Two Applications of a Hamming Code, Andy Liu, 40:1, 2009, 2-5, 9.1, 9.2
An Interesting Property of $x/\pi(x)$, Robert T. Harger and William L. Hightower, 40:3, 2009, 213-214, 9.5
Minimal Solutions to the Box Problem, Jer-Chin (Luke) Chuang, 40:5, 2009, 354-360, 5.1.4
341 is a Brilliant Number, P. D. James, 40:5, 2009, 368, C, 0.1
Fermat's Last Theorem for Fractional and Irrational Exponents, Frank Morgan, 41:3, 2010, 182-185, 0.2
A Pumping Lemma for Invalid Reductions of Fractions, Michael N. Fried and Mayer Goldberg, 41:5, 2010, 357-364, 0.1
Cubic Polynomials with Rational Roots and Critical Points, Shiv K. Gupta and Waclaw Szymanski, 41:5, 2010, 365-369, 0.2, 0.7
Finding Rational Parametric Curves of Relative Degree One or Two, Dave Boyles, 41:5, 2010, 371-382, 5.6.1, 9.4
On a Perplexing Polynomial Puzzle, Bettina Richmond, 41:5, 2010, 400-403, C, 0.7
Sum-Difference Numbers, Yixun Shi, 41:5, 2010, 404-405, C, 0.1
Faulhaber's Triangle, Mohammad Torabi-Dashti, 42:2, 2011, 96-97 (see also 3. Faulhaber's Trapezoid, 42:5, 2011, 430)
One Problem, Nine Student-Produced Proofs, Geoffrey Birky, Connie M. Campbell, Manya Raman, James Sandefur, and Kay Somers, 42:5, 2011, 355-360, 0.2, 0.9
Student Research Project: One-dimensional Czedli-type Islands, Eszter K. Horvath, Attila Mader, and Andreja Tepavcevic, 42:5, 2011, 374-378, C, 0.9, 3.2, 9.2
Averaging Sums of Powers of Integers, Thomas J. Pfaff, 42:5, 2011, 402-403, C, 3.2, 9.2
Mad Tea Party Cyclic Partitions, Robert Bekes, Jean Pedersen, and Bin Shao, 43:1, 2012, 25-36, 3.2, 9.2
Triangular Numbers, Gaussian Integers, and KenKen, John J. Watkins, 43:1, 2012, 37-42, 0.1, 9.2
30 Years of Bulgarian Solitaire, Brian Hopkins, 43:2, 2012, 135-140, 3.2, 9.2
Convergence of a Catalan Series, Thomas Koshy and Zhenguang Gao, 43:2, 2012, 141-146, 3.2, 5.4.2
Proof Without Words: The Square of a Balancing Number is a Triangular Number, Michael A. Jones, 43:3, 2012, 212, C, 0.2

Partitioning Pythagorean Triangles Using Pythagorean Angles, Carl E. Swenson and Andre L. Yandl, 43:3, 2012, 220-225, 0.6, 0.7
Why the Faulhaber Polynomials Are Sums of Even or Odd Powers of (n + ½), Reuben Hersh, 43:4, 2012, 322-324, 0.2
Two Semigroup Elements Can Commute with Any Positive Rational Probability, Vadim Ponomarenko and Natalie Selinski, 43:4, 2012, 334-336, C, 9.4
Rational Exponentials and Continued Fractions, J. K. Denny, 43:5, 2012, 405-407, C
Geometry of Sum-Difference Numbers, Paul Yiu, 43:5, 2012, 408-409, C, 0.4

9.4 Abstract algebra

A Condition Equivalent to Associativity for Finite Groups, Roy Dobyns, 3:1, 1972, 10-13
Sneaking Up On a Group, Jean J. Pedersen, 3:2, 1972, 9-12
Complex Numbers as Residue Classes of Polynomials mod(x^2+1), Rosemary Schmalz, S.P., 3:2, 1972, 78-80, C
Rings, Subrings, Identities and Homomorphisms, Pasquale J. Arpaia, 5:1, 1974, 25-28
An Alternative to Euclidean Algorithm, Sidney H. L. Kung, 5:2, 1974, 8-11
A Finite Field—A Finite Geometry and Triangles, Marc Swadener, 5:3, 1974, 22-26, 0.3
Factoring Functions and Relations, Thomas J. Brieske, 6:3, 1975, 8-12, 1.2
Exploring the Gaussian Integers, Robert G. Stein, 7:4, 1976, 4-10
An Algorithm and Its Connection with Abelian Groups, W. G. Leavitt, 7:2, 1976, 16-21
Counterexamples from the Algebra of Polynomials over a Nonfield, Janet B. Pomeranz, 8:1, 1977, 11-14
Can This Polynomial Be Factored?, Harold L. Dorwart, 8:2, 1977, 67-72, 0.7
An Arithmetic Description of the Dihedral Group, L. N. Somanchi, 11:5, 1980, 327-329, C
Compounding Energy Savings, Leo Chosid, 12:1, 1981, 56-57, C, 0.8
Vector Identities from Quaternions, William C. Schultz, 12:4, 1981, 271-273, C, 5.5
Constructing "Different" Examples for Beginning Abstract Algebra Students, Eddie Boyd, Jr., 12:5, 1981, 333-334, C
Teaching Mathematics with Rubik's Cube, Tom Davis, 13:3, 1982, 178-185
Isomorphisms on Magic Squares, Ali R. Amir-Moez, 14:1, 1983, 48-51, 0.2, 5.4.1, 9.2, 9.3
Doubling: Real, Complex, Quaternion and Beyond ... Well, Maybe, Robert C. Moore, 17:4, 1986, 342-343, C
Generating Posets, Harley Flanders, 18:4, 1987, 323-327, 8.2
Is the Distributive Property Redundant?, Douglas L. Cashing, 18:5, 1987, 402-403, C
Rencontres Reencountered, Karl David, 19:2, 1988, 133-148, 3.2
Codes that Detect and Correct Errors, Chester J. Salwach, 19:5, 1988, 402-416, 9.5
Simple Groups (poem), Anonymous, 20:1, 1989, 26
A Complete Solution to the Magic Hexagram Problem, Harold Reiter and David Ritchie, 20:4, 1989, 307-316, 9.2
Minimum Dimension for a Square Matrix of Order n, Robert Hanson, 21:1, 1990, 28-34, 4.1
A Zero-Row Reduction Algorithm for Obtaining the gcd of Polynomials, Sidney H. Kung and Yap S. Chua, 21:2, 1990, 138-141, 0.7, 4.1
FFF #21. Groups with Separate Identities, Ed Barbeau, 21:3, 1990, 217, F (also 21:5, 1990, 396)
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Binary Operations, David P. Kraines and Vivian Y. Kraines and David A. Smith, 21:3, 1990, 240-241, C, 9.11
Secrets of the Faro: Student Research Project, Irl C. Bivens, 22:2, 1991, 144-147, 9.3
The Mathematics of Identification Numbers, Joseph A. Gallian, 22:3, 1991, 194-202, 9.3
FFF #43. The Number of Conjugates of a Group Element, Ed Barbeau, 22:3, 1991, 222, F
Coset Products in Rings: Student Research Projects, Dennis Kletzing, 22:4, 1991, 323-326

FFF #48. All Groups are Simple, Ed Barbeau, 22:5, 1991, 404, F
Reward of the Rings: Student Research Projects, Irl C. Bivens, 22:5, 1991, 418-420, 9.3
A Number-Theoretic Approach to Counting Subgroups of Dihedral Groups: Student Research Project, David W. Jensen and Eric R. Bussian, 23:2, 1992, 150-152
FFF #55. Even and Odd Permutations, Ed Barbeau, 23:3, 1992, 204, F, 4.2 (also 23:4, 1992, 305 and 24:4, 1993, 346 and 26:4, 1995, 303-304)
A Sliding Block Problem: Student Research Project, George T. Gilbert and Loren C. Larson, 23:4, 1992, 315-319
FFF #80. Factoring Homogeneous Polynomials, John Webb and Graeme West, 25:5, 1994, 433, F
Visualizing the Group Homomorphism Theorem, Robert C. Moore, 26:2, 1995, 143, C
Card Shuffling in Discrete Mathematics, Steve M. Cohen and Paul R. Coe, 26:3, 1995, 224-227, C, 3.3
FFF #90. The Impossibility of Angle Bisection, Eric Chandler, 26:4, 1995, 302, F
Computing in Abstract Algebra, George Mackiw, 27:2, 1996, 136-142
Pythagorean Triples: The Hyperbolic View, Raymond A. Beauregard and E. R. Suryanarayan, 27:3, 1996, 170-181, 9.3
FFF #105. The Remainder Theorem, Richard Laatsch, 27:4, 1996, 282, F, 0.2
The Generalized Spectral Decomposition of a Linear Operator, Garret Sobczyk, 28:1, 1997, 27-38, 4.6
Adventure Games, Permutations, and Spreadsheets, Paul Vodola, 28:4, 1997, 301-309
A Class of Pleasing Periodic Designs, Federico Fernandez, 29:1, 1998, 18-26, 4.3, 9.3
An Application of Elementary Group Theory to Central Solitaire, Arie Bialostocki, 29:3, 1998, 208-212
Prelude to Musical Geometry, Brian J. McCartin, 29:5, 1998, 354-370, 0.3, 9.7
An Attempt to Foster Students' Construction of Knowledge During a Semester Course in Abstract Algebra, Thomas G. Edwards and Lawrence Brenton, 30:2, 1999, 120-128, 1.1
Group Operation Tables and Normalizers, Colonel Johnson Jr., 31:1, 2000, 50-51, C
A Project for Discovery, Extension, and Generalization in Abstract Algebra, Bo Green, 31:4, 2000, 329-332
FFF #159. Reciprocals in finite rings, Michelle Manes, 31:5, 2000, 393, F
A Polynomial with a Root Mod *m* for Every *m*, Allen J. Schwenk, 31:5, 2000, 403-405, C, 9.3
On a Theorem of Clay, Hassan Azad and A. Laradji, 31:5, 2000, 405-406, C
Another Look at Factoring Polynomials, Scott J. Beslin and Douglas J. Baney, 32:4, 2001, 273-275, 0.2
Elementary Linear Algebra and the Division Algorithm, Airton von Sohsten de Medeiros, 33:1, 2002, 51-52, C, 4.3
A Ramanujan Result Viewed From Matrix Algebra, Raymond A. Beauregard and E. R. Suryanarayan, 33:3, 2002, 212-214, 4.1, 9.3
Extensions of a Logarithmic Equation, Bill Frederick and N. S. K. Hellerstein, 33:4, 2002, 348, C
Sets of Sets: A Cognitive Obstacle, Lawrence Brenton, 34:1, 2003, 31-38, 9.1
Another Exercise, Monte Zerger, 34:3, 2003, 204, C
More Binary Operations, Nathaniel Hellerstein, 34:5, 2003, 366, C
The Band Around a (non)Convex Set, Jack Stewart and Annalisa Crannell, 34:5, 2003, 377-379, 0.2, 0.7
A Rational Root Theorem for Imaginary Roots, Sharon Barrs, James Braselton, and Lorraine Braselton, 34:5, 2003, 380-382, 0.2, 0.7
When Does a Quadratic Extension Field Contain the Square Root of –1?, Walden Freedman, 35:1, 2004, 52-54, C
To a ***Z*** (poem), Jeff Suzuki, 35:2, 2004, 124, C
The Arithmetic of Algebraic Numbers: an Elementary Approach, Chi-Kwong Li, 35:4, 2004, 307-309, C
The Platonic Solids from their Rotation Groups, Larry Grove, 36:4, 2005, 278-283
A Paper-and-Pencil gcd Algorithm for Gaussian Integers, Sandor Szabo, 36:5, 2005, 374-380, 9.3
Graeco-Latin Squares and a Mistaken Conjecture of Euler, Dominic Klyve and Lee Stemkoski, 37:1, 2006, 2-15, 3.2, 9.2
The Existence of Multiplicative Inverses, Ricardo Alfaro and Steven C. Althoen, 37:3, 2006, 227-228, C

Names in Boxes Puzzle, Peter Winkler, 37:4, 2006, 260, 285, 289, C, 3.2
More Mathematics in the Bedroom: A Paradoxical Probability, Paul K. Stockmeyer, 38:5, 2007, 339-344, 7.3
Partial Fractions in Calculus, Number Theory, and Algebra, C. A. Yackel and J. K. Denny, 38:5, 2007, 362-374, 5.2.4, 9.3
Remainder Wheels and Group Theory, Lawrence Brenton, 39:2, 2008, 129-135, 0.1, 9.3
Leftist Numbers, Andrew Rich, 39:5, 2008, 330-336, 9.3
The Probability that Two Semigroup Elements Commute Can Be Almost Anything, Berit Givens, 39:5, 2008, 399-400
An Independent Axiom System for the Real Numbers, Greg Oman, 40:2, 2009, 78-86
Student Research Projects: Goursat's Other Theorem, Joseph Petrillo, 40:2, 2009, 119-124
Set of Mutually Orthogonal Sudoku Latin Squares, Ryan M. Pedersen and Timothy L. Vis, 40:3, 2009, 174-180, 9.2
Fundamental Theorems of Algebra for the Perplexes, Robert D. Poodiack and Kevin J. LeClair, 40:5, 2009, 322-336
How to Differentiate an Integer Modulo n, Caleb Emmons, Mike Krebs, and Anthony Shaheen, 40:5, 2009, 345-353, 5.1.2
Emmy Noether?, Michael Henle, 41:1, 2010, 27, C, 2.2
The Other Reason Why *Not* Unique Factorization, Andrea Rothbart, 41:1, 2010, 76, C
Grobner Basis Representations of Sudoku, Elizabeth Arnold, Stephen Lucas, and Laura Taalman, 41:2, 2010, 101-111, 9.2
Taking Turns, Brian Hopkins, 41:4, 2010, 289-297, 3.2, 3.3
Finding Rational Parametric Curves of Relative Degree One or Two, Dave Boyles, 41:5, 2010, 371-382, 5.6.1, 9.3
Student Research Project: Graphs and Zero-Divisors, M. Axtell and J. Stickles, 41:5, 2010, 396-399, 3.1
The Symmetry Group of the Permutahedron, Karl-Dieter Crisman, 42:2, 2011, 135-138
Student Research Project: Golden Matrix Families, Anne Fontaine and Susan Hurley, 42:2, 2011, 140-147, 4.1, 4.5
Counting Subgroups in a Direct Product of Finite Cyclic Groups, Joseph Petrillo, 42:3, 2011, 215-222
An Application of Group Theory to Change Ringing, Michele Intermont and Aileen Murphy, 42:3, 2011, 223-228, 3.2
Uncountably Generated Ideals of Functions, B. Sury, 42:5, 2011, 404-406, C, 9.5
Hexaflexagons, Martin Gardner, 43:1, 2012, 2-5, 0.3, 3.2, 9.2, 9.8
From Hexaflexagons to Edge Flexagons to Point Flexagons, Les Pook, 43:1, 2012, 11-14, 0.3, 3.1, 9.2, 9.8
Carryless Arithmetic Mod 10, David Applegate, Marc LeBrun, and N. J. A. Sloane, 43:1, 2012, 43-50, 0.1, 5.4.1, 9.2
The Finite Lamplighter Groups: A Guided Tour, Jacob A. Siehler, 43:3, 2012, 203-211
When Abelian = Hausdorff, Timothy Kohl, 43:3, 2012, 213-215, 9.8
Two Semigroup Elements Can Commute with Any Positive Rational Probability, Vadim Ponomarenko and Natalie Selinski, 43:4, 2012, 334-336, C, 9.3
Student Research Project: Idempotents a la Mod, Thomas Q. Sibley, 43:5, 2012, 401-404

9.5 Analysis

On the Sum of Two Periodic Functions, John M. H. Olmsted and Carl G. Townsend, 3:1, 1972, 33-38
The Quadratic Polynomial and Its Zeroes, C. A. Long, 3:2, 1972, 23-29, 5.1.5
On the Use of Functions, William E. Hartnett, 3:2, 1972, 25-28, 9.8
A Geometric Approach to the Orders of Infinity, Harold L. Schoen, 3:2, 1972, 74-76, C, 0.2
A Construction of the Real Numbers, E. A. Maier and David Maier, 4:1, 1973, 31-35
Riemann Integration in Ordered Fields, John M. Olmsted, 4:2, 1973, 34-40

A Further Note on the Orders of Infinity, Harold L. Schoen, 5:1, 1974, 80-81, C, 0.2
A Linear Integral Transform with a Simple Kernel, Walter W. Bolton and Sterling C. Crim, 6:1, 1975, 5-7
The Countability of the Rationals Revisited, Keith Gant and Dean B. Priest, 6:3, 1975, 41-42, C
An Interesting Use of Generating Functions, Aron Pinker, 6:4, 1975, 39-45, 0.6, 5.4.2
Can the Complex Numbers Be Ordered?, Richard C. Weimer, 7:4, 1976, 10-12
Newton's Inequality and a Test for Imaginary Roots, Carl G. Wagner, 8:3, 1977, 145-147
Another Proof of the Arithmetic-Geometric Mean Inequality, Elmar Zemgalis, 10:2, 1979, 112-113, C
The Generalized Arithmetic-Geometric Mean Inequality, David H. Anderson, 10:2, 1979, 113-114, C
Testing a Graph's Symmetry, V. N. Murty, 10:2, 1979, 116-117, C
A Note on the Cauchy-Schwartz Inequality, Jack C. Slay and J. L. Solomon, 10:4, 1979, 280-281, C
A Rational Approximation to SQR(n), Carl P. McCarty, 11:2, 1980, 123-124, C
Extending Bernoulli's Inequality, Ervin Y. Rodin, 11:2, 1980, 124-125, C
Elementary Derivation of a Formula for Approximating n!, David H. Anderson, 11:3, 1980, 201-202, C
A Quick Test for Rational Roots of a Polynomial, Leo Chosid, 11:3, 1980, 205-206, C, 0.7
How Close are the Riemann Sums to the Integral They Approximate?, V. N. Murty, 11:4, 1980, 268-270, C
Altitudes ad Infinitum, Martin Berman, 11:5, 1980, 300-304
Uniqueness of Power Series Representations, Garfield C. Schmidt, 12:1, 1981, 54-56, C, 5.4.2
Applying Complex Arithmetic, Herbert L. Holden, 12:3, 1981, 190-194, 0.6, 5.3.1, 9.3
Corrections to an Earlier Capsule, Richard Johnsonbaugh, 12:3, 1981, 204-206, C
A Note on Parallel Curves, Allan J. Kroopnick, 13:1, 1982, 59-61, C
Continued Fractions and Iterative Processes, Jean H. Bevis and Jan L. Boal, 13:2, 1982, 122-127, 0.7
Still Another Proof of the Arithmetic-Geometric Mean Inequality, Norman Schaumberger, 13:2, 1982, 159-160, C
Power Series for Practical Purposes, Ralph Boas, 13:3, 1982, 191-195, 5.4.2
A First Course in Continuous Simulation, Richard Bronson, 13:5, 1982, 300-310, 1.2
Products of Sets of Complex Numbers, Byron L. McAllister, 14:5, 1983, 390-397
Mean Inequalities, Frank Burk, 14:5, 1983, 431-434, C
Convexity in Elementary Calculus: Some Geometric Equivalences, Victor A. Belfi, 15:1, 1984, 37-41
Income Tax Averaging and Convexity, Michael Henry and G. E. Trapp, Jr., 15:3, 1984, 253-255, 0.8, 5.1.5, 5.7.1
The Maximum and Minimum of Two Numbers Using the Quadratic Formula, Dan Kalman, 15:4, 1984, 329-330, C, 5.1.4
Income Averaging Can Increase Your Tax Liability, Gino T. Fala, 16:1, 1985, 53-55, C, 0.8
Picturing Functions of a Complex Variable, Bart Braden, 16:1, 1985, 63-73
Geometrically Asymptotic Curves, Dan Kalman, 16:3, 1985, 199-206, 5.1.5
Graphing the Complex Roots of a Quadratic Equation, Floyd Vest, 16:4, 1985, 257-261, 0.2, 0.7
On Hypocycloids and their Diameters, I. J. Schoenberg, 16:4, 1985, 262-267, 5.6.1
Relating Differentiability and Uniform Continuity, Irl C. Bivens and L. R. King, 16:4, 1985, 283, C
Why is a Restaurant's Business Worse in the Owner's Eyes Than in the Customers'?, Wong Ngoi Ying, 18:4, 1987, 315-316, C
Another Proof of the Inequality Between Power Means, Norman Schaumberger, 19:1, 1988, 56-58, C
A General Form of the Arithmetic-Geometric Mean Inequality via the Mean Value Theorem, Norman Schaumberger, 19:2, 1988, 172-173, C, 5.1.2
Parameter-generated Loci of Critical Points of Polynomials, F. Alexander Norman, 19:3, 1988, 223-229, 0.7, 5.1.5
A Classroom Approach to Involutions, Joseph Wiener and Will Watkins, 19:3, 1988, 247-250, C
Involutions and Problems Involving Perimeters and Area, Joseph Wiener and Henjin Chi and Hushang Poorkarimi, 19:3, 1988, 250-252, C, 9.3
A Discrete l'Hopital's Rule, Xun-Cheng Huang, 19:4, 1988, 321-329, 5.1.1

Random Walks on Z, Robert I. Jewett and Kenneth A. Ross, 19:4, 1988, 330-342, 7.2
Bounds on the Perimeter of an Ellipse via Minkowski Sums, Richard E. Pfiefer, 19:4, 1988, 348-350, C
Equivalent Inequalities, Jim Howard and Joe Howard, 19:4, 1988, 350-352, C
Looking at the Mandelbrot Set, Mark Bridger, 19:4, 1988, 353-363, 9.8
Codes that Detect and Correct Errors, Chester J. Salwach, 19:5, 1988, 402-416, 9.4
The Fundamental Periods of Sums of Periodic Functions, James Caveny and Warren Page, 20:1, 1989, 32-41, 0.6
Another Proof of Jensen's Inequality, Norman Schaumberger and Bert Kabak, 20:1, 1989, 57-58, C
Graphing the Complex Zeros of Polynomials Using Modulus Surfaces, Clff Long and Thomas Hern, 20:2, 1989, 98-105, 0.7, 5.1.5
The Curious Fate of an Applied Problem, Alan H. Schoenfeld, 20:2, 1989, 115-123, 5.1.5, 8.3
Another Proof of Chebysheff's Inequality, Norman Schaumberger, 20:2, 1989, 141-142, C
Subharmonic Series, Arthul C. Sogal, 20:3, 1989, 194-200, 5.4.2
Two Elementary Proofs of an Inequality (and 1 1/2 Better Ones), William C. Waterhouse, 20:3, 1989, 201-205
The Root Mean Square—Arithmetic Mean—Geometric Mean—Harmonic Mean Inequality, Roger B. Nelsen, 20:3, 1989, 231, C, 0.4
Evolution of the Function Concept: A Brief Survey, Israel Kleiner, 20:4, 1989, 282-300, 2.2
The AM-GM Inequality via x^(1/x), Norman Schaumberger, 20:4, 1989, 320, C
Discrete Dirichlet Problems, Convex Coordinates, and a Random Walk on a Triangle, J. N. Boyd and P. N. Raychowdhury, 20:5, 1989, 385-392
FFF #9. The Countability of the Reals, Ed Barbeau, 20:5, 1989, 403, F, 9.1
FFF # 10. The Uncountability of the Plane, Ed Barbeau, 20:5, 1989, 403-404, F, 9.1
Power Series and Exponential Generating Functions, G. Ervynck and P. Igodt, 20:5, 1989, 411-415, C, 5.4.2
Generalizations of a Complex Number Identity, M. S. Klamkin and V. N. Murty, 20:5, 1989, 415-416, C
A Generalization of the limit of [(n!)^(1/n)]/n = e^(-1), Norman Schaumberger, 20:5, 1989, 416-418, C, 5.1.1
FFF #15. Another Proof that 1 = 0, Ed Barbeau, 21:1, 1990, 36, F (also 21:2, 1990, 128)
Ways of Looking at n!, Diane Johnson and Roy Dowling, 21:3, 1990, 219-220, C
Harmonic, Geometric, Arithmetic, Root Mean Inequality, Sidney Kung, 21:3, 1990, 227, C, 0.4
Tabular Integration by Parts, David Horowitz, 21:4, 1990, 307-313, C, 5.2.5, 5.4.2
The Cauchy Integral Formula, David P. Kraines and Vivian Y. Kraines and David A. Smith, 21:4, 1990, 327-329, C
A Chaotic Search for i, Gilbert Strang, 22:1, 1991, 3-12, 6.3, 5.1.3
FFF #29. A Simple Description of Sets of Reals, Ed Barbeau, 22:1, 1991, 39, F
FFF #30. Is There a Nonmeasurable Set?, Ed Barbeau, 22:1, 1991, 39, F
FFF #31. Is There a Nonmeasurable Set (Part 2)?, Ed Barbeau, 22:1, 1991, 40, F
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325
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Introducing Hyperbolicity via Piecewise Euclidean Complexes, Jessica Benashaski, John Meier, Kevin O'Brien, Paige Reinheimer and Margaret Skarbek, 31:3, 2000, 213-217, C
The Asymmetric Propeller Revisited, Gillian Saenz and Chris Jackson and Ryan Crumley, 31:5, 2000, 347-349, 0.4

A Variety of Triangle Inequalities, Herbert Bailey and Yanir Rubinstein, 31:5, 2000, 350-355, 9.5
Straightedge Constructions: Given a Parabola, Peter Y. Woo, 31:5, 2000, 362-372
Conformality, the Exponential Function, and World Map Projections, Timothy G. Feeman, 32:5, 2001, 334-342, 9.8
Classifying Frieze Patterns Without Using Groups, sarah-marie belcastro and Thomas C. Hull, 33:2, 2002, 93-98
Nine Cubits or Simple Soma, Richard K. Guy and Marc M. Paulhus, 33:3, 2002, 188-195, 9.2
Mathematics in Music: Mobius Strip, Sally Picciotto, 33:3, 2002, 214, C
Constructing a Poincare Line with Straightedge and Compass, David Hecker, 34:5, 2003, 362-366, 0.3
On Determining the Non-Circularity of a Plane Curve, Lane F. Burgette and Russell A. Gordon, 35:2, 2004, 74-83, 5.1.3, 5.2.8
Heron's Area Formula: What About a Tetrahedron?, Reuben Hersh, 35:2, 2004, 112-114, 0.2, 0.4
When Is Euler's Line Parallel to a Side of a Triangle?, Wladimir G. Boskoff and Bogdan D. Suceava, 35:4, 2004, 292-296, 0.3
Revisiting Spherical Trigonometry with Orthogonal Projectors, Sudipto Banerjee, 35:5, 2004, 375-381, 9.8
How To View A Flatland Painting, Mark Schlatter, 37:2, 2006, 114-120, 0.4
Folding Beauties, Leah Wrenn Berman, 37:3, 2006, 176-186, 0.5, 5.6.1
Newton's Method and the Wada Property: A Graphical Approach, Michael Frame and Nial Neger, 38:3, 2007, 192-204, 6.3, 9.5
The Normals to a Parabola and the Real Roots of a Cubic, Manjinder S. Bains and J. B. Thoo, 38:4, 2007, 272-277, 0.4, 0.5
Student Research Project: From Cyclic Sums to Projective Planes, Roger Zarnowski, 38:4, 2007, 304-308, 9.3
Commensurable Triangles, Richard Parris, 38:5, 2007, 345-355 (see also correction 39:5, 2008, 386)
The *Right* Right Triangle on the Sphere, William Dickinson and Mohammad Salmassi, 39:1, 2008, 24-33, 0.3
Universal Stoppers Are Rupert, Richard P. Jerrard and John E. Wetzel, 39:2, 2008, 90-94, 0.3
Proof Without Words: Carnot's Theorem for Acute Triangles, Claudi Alsina and Roger B. Nelsen, 39:2, 2008, 111, C, 0.3
From Mixed Angles to Infinitesimals, Jacques Bair and Valerie Henry, 39:3, 2008, 230-233, C, 9.5
The Perimeter of a Polyomino and the Surface Area of a Polycube, Wiley Williams and Charles Thompson, 39:3, 2008, 233-237, C, 0.3
Designing a Table Both Swinging and Stable, Greg N. Frederickson, 39:4, 2008, 258-266, 0.3
Sets That Contain Their Circle Centers, Greg Martin, 39:5, 2008, 357-366, 9.8
Proving that Three Lines Are Concurrent, Daniel Maxin, 40:2, 2009, 128-130, C, 0.3
L-Tromino Tiling of Mutilated Chessboards, Martin Gardner, 40:3, 2009, 162-168, 9.2
Polyomino Problems to Confuse Computers, Stewart Coffin, 40:3, 2009, 169-172, 9.2
Mechanical Circle-Squaring, Barry Cox and Stan Wagon, 40:4, 2009, 238-247, 0.4, 5.6.1, 9.10
Pompeiu's Theorem Revisited, Arpad Benyi and Ioan Casu, 40:4, 2009, 252-258, 0.3
Biangular Coordinates Redux: Descovering a New Kind of Geometry, Michael Naylor and Brian Winkel, 41:1, 2010, 29-41, 2.2
When Are Two Figures Congruent?, John E. Wetzel, 41:3, 2010, 193-196, 0.3
Viviani's Theorem and Its Extension, Elias Abboud, 41:3, 2010, 203-211, 0.3
The FedEx Problem, Kent E. Morrison, 41:3, 2010, 222-232, 9.5, 9.10
A Geometric Approach to Fair Division, Julius Barbanel, 41:4, 2010, 268-280, 3.3, 9.5
Dynamics of Folds in the Plane, Nikolai A. Krylov and Edwin L. Rogers, 42:2, 2011, 108-114, 6.3
The Symmedian Point: Constructed and Applied, Robert K. Smither, 42:2, 2011, 115-117, 0.3, 0.4
Guards, Galleries, Fortresses, and the Octoplex, T. S. Michael, 42:3, 2011, 191-200, 3.1, 3.2
Folding Polyominoes from One Level to Two, Greg N. Frederickson, 42:4, 2011, 265-274, 0.3, 9.2
Rediscovering Pascal's Mystic Hexagon, Michael Augros, 43:3, 2012, 194-202, 0.3

Viviani Polytopes and Fermat Points, Li Zhou, 43:4, 2012, 309-312, 0.3
A Different Angle on Perspective, Marc Frantz, 43:5, 2012, 354-360, 0.3

9.8 Topology and differential geometry

One-Sided Surfaces and Orientability, John W. Woll, Jr., 2:1, 1971, 5-18
On the Use of Functions, William E. Hartnett, 3:2, 1972, 25-28, 9.5
Approximations of Square Roots, Leon Wejntrob, 14:5, 1983, 427-430, 0.2, 0.7
The Fractal Geometry of Mandelbrot, Anthony Barcellos, 15:2, 1984, 98-114, 0.4
Antoine's Necklace or How to Keep a Necklace From Falling Apart, Beverly L. Brechner and John C. Mayer, 19:4, 1988, 306-320
Looking at the Mandelbrot Set, Mark Bridger, 19:4, 1988, 353-363, 9.5
FFF #33. A Topological Spoof, Ed Barbeau, 22:1, 1991, 41, F (also 22:5, 1991, 405)
Zorn's Llama (cartoon), David Egley, 22:3, 1991, 234, C
FFF. The Continuum Hypothesis, Ed Barbeau, 24:4, 1993, 346, F
Independence of Path and All That, Robert E. Terrell, 27:4, 1996, 272-276, 5.7.3
Mobius or Almost Mobius, Cliff Long, 27:4, 1996, 277, C
Visualizing the Geometry of Lissajous Knots, John Meier and Jessica Wolfson, 28:3, 1997, 211-216, 5.6.1
Numerically Parametrizing Curves, Steven Wilkinson, 29:2, 1998, 104-119, 5.6.1, 5.6.2
Looking at Order of Integration and a Minimal Surface, Thomas Hern and Cliff Long and Andy Long, 29:2, 1998, 128-133, 5.7.2
Normal Lines and Curvature, Kirby C. Smith, 31:1, 2000, 54-56, C, 5.1.3
Conformality, the Exponential Function, and World Map Projections, Timothy G. Feeman, 32:5, 2001, 334-342, 9.7
Lissajous Figures and Chebyshev Polynomials, Julio Castineira Merino, 34:2, 2003, 122-127, 5.6.1
An Illuminating Example of the Gauss Map, David Richeson, 35:1, 2004, 14, C
The Growth of Trees (Student Research Projects), Philip K. Hotchkiss and John Meier, 35:2, 2004, 143-151, 3.1
Revisiting Spherical Trigonometry with Orthogonal Projectors, Sudipto Banerjee, 35:5, 2004, 375-381, 9.7
A Non-Smooth Band Around a Non-Convex Region, J. Aarao, A. Cox, C. Jones, M. Martelli, and A. Westfahl, 37:4, 2006, 269-278, 5.1.1, 5.7.3
Which Way Is Jerusalem? Navigating on a Spheroid, Murray Schechter, 38:2, 2007, 96-105, 5.7.3
Pairs of Equal Surface Functions, Daniel Cass and Gerald Wildenberg, 30:1, 2008, 51-54, C, 5.2.6, 5.6.2
Sets That Contain Their Circle Centers, Greg Martin, 39:5, 2008, 357-366, 9.7
Topology Explains Why Automobile Sunshades Fold Oddly, Curtis Feist and Ramin Naimi, 40:2, 2009, 93-98
A Midsummer Knot’s Dream, A. Henrich, N. MacNaughton, S. Narayan, O. Pechenik, R. Silversmith, and J. Townsend, 42:2, 2011, 126-134
Generalized Parabolas, Dan Joseph, Gregory Hartman, and Caleb Gibson, 42:4, 2011, 275-282, 0.3, 0.5, 5.6.1, 5.7.3
Hexaflexagons, Martin Gardner, 43:1, 2012, 2-5, 0.3, 3.2, 9.2, 9.4
The V-flex, Triangle Orientation, and Catalan Numbers in Hexaflexagons, Ionut E. Iacob, Bruce McLean, and Hua Wang, 43:1, 2012, 6-10, 0.3, 3.1, 3.2, 5.4.1, 9.2
From Hexaflexagons to Edge Flexagons to Point Flexagons, Les Pook, 43:1, 2012, 11-14, 0.3, 3.1, 9.2, 9.4
About *Iterated Trefoil Knot*, R. Fathauer, 43:2, 2012, 134, C
When Abelian = Hausdorff, Timothy Kohl, 43:3, 2012, 213-215, 9.4

9.9 Operations research, including linear programming

A Strategy for a Class of Games, R. S. Pierce, 2:2, 1971, 55-62

A Coin Game, Thomas P. Dence, 8:4, 1977, 244-246, 5.4.2, 9.10
The Mathematics of Tucker: A Sampler, Albert W. Tucker, 14:3, 1983, 228-232, 4.1, 9.10
Three Person Winner-Take-All Games with McCarthy's Revenge Rule, Philip D. Straffin, Jr., 16:5, 1985, 386-394
A Division Game: How Far Can You Stretch Mathematical Induction?, William H. Ruckle, 18:3, 1987, 212-218, 0.9, 3.2
The Simplex Method of Linear Programming on Microcomputer Spreadsheets, Frank S. T. Hsiao, 20:2, 1989, 153-160, 1.2
A Tool for Teaching Linear Programming within MATLAB, David R. Hill, 21:1, 1990, 55-56, C, 4.1
Optimal Locations, Bennett Eisenberg and Samir Khabbaz, 23:4, 1992, 282-289, 0.4, 3.1
Integer Programming, Joe F. Wampler and Stephen E. Newman, 27:2, 1996, 95-100
Presenting the Kuhn-Tucker Conditions Using a Geometric Approach, Patrick J. Driscoll and William P. Fox, 27:2, 1996, 101-108, 5.7.1
How to Pump a Swing, Stephen Wirkus and Richard Rand and Andy Ruina, 29:4, 1998, 266-275, 6.6
The Bus Driver's Sanity Problem, Todd G. Will, 30:3, 1999, 187-194
FFF #226. Braess' Paradox, Eva Tardos, 35:4, 2004, 297, F
Win, Lose, or Draw: A Markov Chain Analysis of Overtime in the National Football League, Michael A. Jones, 35:5, 2004, 330-336
An Introduction to Simulated Annealing, Brian Albright, 38:1, 2007, 37-42, 5.1.4
Tennis with Markov, Roman Wong and Megan Zigarovich, 38:1, 2007, 53-55, C, 4.5, 7.2, 9.10
Jeeps Penetrating a Hostile Desert, Herb Bailey, 40:3, 2009, 182-188, 9.2, 9.10
Student Research Project: Making Change Efficiently, Jack E. Graver, 42:4, 2011, 317-322, 0.1, 3.2, 5.1.4
Lake Wobegon Dice, Jorge Moraleda and David G. Stork, 43:2, 2012, 152-159, 3.3, 7.2, 9.2

9.10 Mathematical modelling and simulation

A Program for Keno, Karl J. Smith, 3:2, 1972, 16-20, 7.1
Dividing Inheritances, Howard E. Reinhardt, 4:2, 1973, 30-33
A Geometric Approach to Linear Programming in the Two-Year College, Pat Semmes, 5:1, 1974, 37-40, 0.2
Some Applications of Modeling in Mathematics for Two-Year Colleges, Robert S. Fisk, 6:4, 1975, 10-13
What is an Application of Mathematics?, Clifford Sloyer, 7:3, 1976, 19-26, 5.1.4
Some Effects of Rationing, James A. Burns, 8:4, 1977, 203-206
A Coin Game, Thomas P. Dence, 8:4, 1977, 244-246, 5.4.2, 9.9
An Environmental Problem, Roland H. Lamberson, 8:4, 1977, 252-253
Biorythms: A Computer Program, James G. Troutman, 9:2, 1978, 101-103
Foresight-Insight-Hindsight, James C. Frauenthal and Thomas L. Saaty, 10:4, 1979, 245-254
Binomial Baseball, Eugene M. Levin, 12:4, 1981, 260-266, 7.2
Minimally Favorable Games, Michael W. Chamberlain, 14:2, 1983, 159-164, 7.2
The Mathematics of Tucker: A Sampler, Albert W. Tucker, 14:3, 1983, 228-232, 4.1, 9.9
A Monte Carlo Simulation Related to the St. Petersburg Paradox, Allan J. Ceasar, 15:4, 1984, 339-342, 5.4.2, 7.2
Differential Equations and the Battle of Trafalgar, 16:2, 1985, 98-102, 6.1, 6.2
Harvesting a Grizzly Bear Population, Michael Caulfield and John Kent and Daniel McCaffery, 17:1, 1986, 34-46, 4.1, 4.6
The Problem of Managing a Strategic Reserve, David Cole and Loren Haarsma and Jack Snoeyink, 17:1, 1986, 48-60, 5.1.4, 6.1
How to Balance a Yardstick on an Apple, Herbert R. Bailey, 17:3, 1986, 220-225, 6.5
Facility Location Problems, Fred Buckley, 18:1, 1987, 24-32, 3.1
Positioning of Emergency Facilities in an Obstructed Traffic Grid, Jeff Cronk and Duff Howell and Keith

Saints, 18:1, 1987, 34-43, 7.2
Transitions, Jeanne L. Agnew and James R. Choike, 18:2, 1987, 124-133, 0.7, 5.1.3, 5.6.1
The Probability that the "Sum of the Rounds" Equals the "Round of the Sum", Roger B. Nelsen and James E. Schultz, 18:5, 1987, 390-396, 7.2, 7.3
Constructing a Map from a Table of Intercity Distances, Richard J. Pulskamp, 19:2, 1988, 154-163, 3.1, 4.5
Theory, Simulation and Reality, Peter Flusser, 19:3, 1988, 210-222, 7.2, 7.3
Ties at Rotation, Howard Lewis Penn, 19:3, 1988, 230-239, 3.2
Pseudorandom Number Generators and a Four-Bit Computer System, James C. Reber, 20:1, 1989, 54-55, C, 6.3, 9.3
Spiders, Computers, and Markov Chains, Jim R. Ridenhour, 21:4, 1990, 323-326, 8.1
Discrete Dynamical Modeling, James T. Sandefur, 22:1, 1991, 13-22, 6.3
The Orbit Diagram and the Mandelbrot Set, Robert L. Devaney, 22:1, 1991, 23-38, 6.3
Theory vs. Computation in Some Very Simple Dynamical Systems, Larry Blaine, 22:1, 1991, 42-44, C, 6.3
Using Simulation to Study Linear Regression, LeRoy A. Franklin, 23:4, 1992, 290-295, 7.3
A Random Ladder Game: Permutations, Eigenvalues, and Convergence of Markov Chains, Lester H. Lange and James W. Miller, 23:5, 1992, 373-385, 4.1, 4.5
Does What Goes Up Take the Same Time to Come Down?, P. Glaister, 24:2, 1993, 155-158, C, 5.2.3
Inverse Problems and Torricelli's Law, C. W. Groetsch, 24:3, 1993, 210-217, 9.5
The Best Shape for a Tin Can, P. L. Roe, 24:3, 1993, 233-236, C, 5.1.4
Fitting a Logistic Curve to Data, Fabio Cavallini, 24:3, 1993, 247-253, 9.6
Determining Sample Sizes for Monte Carlo Integration, David Neal, 24:3, 1993, 254-262, C, 5.2.2, 7.3
Quenching a Thirst with Differential Equations, Martin Ehrismann, 25:5, 1994, 413-418, 6.4
A Progression of Projectiles: Examples from Sports, Roland Minton, 25:5, 1994, 436-442, C, 6.2, 6.4
A Balloon Experiment in the Classroom, Thomas Gruszka, 25:5, 1994, 442-444, C, 6.1, 6.4
Experiments with Probes in the Differential Equations Classroom, David O. Lomen, 25:5, 1994, 453-457, 6.2, 6.4
Projectile Motion with Arbitrary Resistance, Tilak de Alwis, 26:5, 1995, 361-367, 6.2
The Meeting of the Plows: A Simulation, Jerome L. Lewis, 26:5, 1995, 395-400
A Home Heating Model for Calculus Students, Prashant S. Sansgiry and Constance C. Edwards, 27:5, 1996, 394-397, C, 6.2
Take a Walk on the Boardwalk, Stephen D. Abbott and Matt Richey, 28:3, 1997, 162-171, 4.5
The Average Distance Between Points in Geometric Figures, Steven R. Dunbar, 28:3, 1997, 187-197, 7.2
Discovering Differential Equations in Optics, William Mueller and Richard Thompson, 28:3, 1997, 217-223, 6.1
The Long Arm of Calculus, Ethan Berkove and Rich Marchand, 29:5, 1998, 376-386, 5.7.1
The Probability of Passing a Multiple-Choice Test, Milton P. Eisner, 29:5, 1998, 421-426, 7.2
Spirals and Conchospirals in the Flight of Insects, Khristo N. Boyadzhiev, 30:1, 1999, 23-31, 5.6.1
Minimizing Aroma Loss, Robert Barrington Leigh and Richard Travis Ng, 30:5, 1999, 356-358, 3.2
Optimal Card-Collecting Strategies for Magic: The Gathering, Robert A. Bosch, 31:1, 2000, 15-21
Modeling the Gaitpath of a Running Animal, John Lorch, 31:2, 2000, 93-97
Punxsutawney’s Phenomenal Phorecaster, Michael A. Aaron, Brewster B. Boyd, Jr., Melanie J. Curtis, and Paul M. Sommers, 32:1, 2001, 26-29
Perfecting the Analog of a Deck of Cards or Why Evolution Can’t Be Left to Chance, J. G. Simmonds, 33:1, 2002, 17-20, 7.2
On Running in the Rain, Herb Bailey, 33:2, 2002, 88-92
Why cars in the next lane seem to go faster, Sung Soo Kim, 33:3, 2002, 228-229, C
Can a Bicycle Create a Unicycle Track?, David L. Finn, 33:4, 2002, 283-292, 5.6.1
FFF. Lively Cities, Jacques Laforgue, 33:4, 2002, 311-312, F, 6.5

Taking the Sting out of Wasp Nests: A Dialogue on Modeling in Mathematical Biology, Jennifer C. Klein and Thomas Q. Sibley, 34:3, 2003, 207-215, 3.2
A Modified Discrete SIR Model, Jennifer M. Switkes, 34:5, 2003, 399-402, C
First Order Differential Equations and the Atmosphere, Gerhard Strohmer, 35:2, 2004, 93-96, 6.1
Rocket Math, Daniel Plath, Cliff Stoll, and Stan Wagon, 35:4, 2004, 262-273, 4.7
Recirculation Models, Homogenized Milk, and Biotech Applications, Mark Bailey, Mike Hilgert, and Herb Bailey, 35:4, 2004, 283-288, 6.3
Algebra in Respiratory Care, David F. Snyder, 35:4, 2004, 300-302, C, 0.2
Projectile Motion with Resistance and the Lambert W Function, Edward W. Packel and David S. Yuen, 35:5, 2004, 337-350, 5.3.4, 6.2
Musical Analysis and Synthesis in Matlab, Mark R. Petersen, 35:5, 2004, 396-401, C, 6.6
Breaking the Holiday Inn Priority Club CAPTCHA, Edward Aboufadel, Julia Olsen, and Jesse Windle, 36:2, 2005, 101-108, 4.7, 8.3
Another Broken Symmetry, C. W. Groetsch, 36:2, 2005, 109-113, 6.2
Taking a Whipper-The Fall-Factor Concept in Rock Climbing, Dan Curtis, 36:2, 2005, 135-140, 6.2
Spraying a Wall with a Garden Hose, James Alexander, 36:2, 2005, 149-152, C, 5.1.5
Snapshots of a Rotating Water Stream, Steven L. Siegel, 36:2, 2005, 152-154, C, 5.6.1
Do Dogs Know Related Rates Rather than Optimization?, Pierre Perruchet and Jorge Gallego, 37:1, 2006, 16-18, 5.1.4
Straw in a Box, Richard Jerrard, Joel Schneider, Ralph Smallberg, and John Wetzel, 37:2, 2006, 93-102, 0.4
Synchronizing Fireflies, Ying Zhou, Walter Gall, and Karen Mayumi Nabb, 37:3, 2006, 187-193, 6.4
The Tippy Trough, Donald Francis Young, 37:3, 2006, 205-213, 5.1.4
Group Testing: Four Student Solutions to a Classic Optimization Problem, Daniel J. Teague, 37:4, 2006, 261-268
Playing Ball in a Space Station, Andrew Simoson, 37:5, 2006, 334-343, 5.6.1
Tennis with Markov, Roman Wong and Megan Zigarovich, 38:1, 2007, 53-55, C, 4.5, 7.2, 9.9
Tennis (and Volleyball) Without Geometric Series, Bruce Jay Collings, 38:1, 2007, 55-57, C, 7.2
Follow-up on Disease Detection, Witold Jarnicki, Michael Schweitzer, and Stan Wagon, 38:2, 2007, 134, C
Epidemic Models for SARS and Measles, Edward Rozema, 38:4, 2007, 246-259, 5.3.4, 6.1
Pursuit Curves for the Man in the Moone, Andrew J. Simoson, 38:5, 2007, 330-338, 2.2, 6.4 (see also A Smoother Flight to the Moon, Stan Wagon, 39:1, 2008, 48)
Do Dogs Know Bifurcations?, Roland Minton and Timothy J. Pennings, 38:5, 2007, 356-361, 5.1.4
The Depletion Ratio, C. W. Groetsch, 39:1, 2008, 43-48, 5.1.1, 5.2.1
Dinner Tables and Concentric Circles: A Harmony of Mathematics, Music, and Physics, Jack Douthett and Richard J. Krantz, 39:3, 2008, 203-211, 3.2, 9.1
Variations of the Sliding Ladder Problem, Stelios Kapranidis and Reginald Koo, 39:5, 2008, 374-379
Evolutionary Stability in the Traveler's Dilemma, Andrew T. Barker, 40:1, 2009, 33-38
Moody's Mega math Challenge: A Modeling Competition, Warren Page, 40:1, 2009, 47, C
Ethanol: Not All It Seems To Be, Thomas Jackson, Kelly Roache, Afanasiy Yermakov, Jason Zukus, and Raymond Eng, 40:1, 2009, 48-54, C
Jeeps Penetrating a Hostile Desert, Herb Bailey, 40:3, 2009, 182-188, 9.2, 9.9
Mechanical Circle-Squaring, Barry Cox and Stan Wagon, 40:4, 2009, 238-247, 0.4, 5.6.1, 9.7
Maximizing the Spectacle of Water Fountains, Andrew J. Simoson, 40:4, 2009, 263-274, 5.1.4, 5.2.6, 5.2.7, 5.2.8
The Draining Cylinder, James Graham-Eagle, 40:5, 2009, 337-343, 6.1
Waiting to Turn Left?, Maureen T. Carroll, Elyn K. Rykken, and Jody M. Sorensen, 41:1, 2010, 60-63, C, 5.2.1
POEM's and Newton's Aerodynamic Frustrum, Jaime Cruz-Sampedro and Margarita Tetlalmatzi-Montiel,

41:2, 2010, 145-153, 0.4, 0.5, 5.1.4
Application of the Lambert *W* Function to the SIR Epidemic Model, Frank Wang, 41:2, 2010, 156-159, C, 5.3.4, 6.3, 6.4
The FedEx Problem, Kent E. Morrison, 41:3, 2010, 222-232, 9.5, 9.7
Suspension Bridge Profiles, Charles Groetsch, 41:3, 2010, 237-241, C, 9.5
Chutes and Ladders for the Impatient, Leslie A. Cheteyan, Stewart Hengeveld, and Michael A. Jones, 42:1, 2011, 2-8, 6.3, 7.2, 9.2
Newton's Radii, Maupertuis' Arc Length, and Voltaire's Giant, Andrew J. Simoson, 42:3, 2011, 183-190, 5.2.8, 5.6.1
Random Breakage of a Rod into Unit Lengths, Joe Gani and Randall Swift, 42:3, 2011, 201-205, 7.2
An Empirical Approach to the St. Petersburg Paradox, Dominic Klyve and Anna Lauren, 42:4, 2011, 260-263, 5.4.2, 7.1, 7.2
Do Dogs Know the Trammel of Archimedes?, Mark Schwartz, 42:4, 2011, 299-308, 0.3, 0.5, 5.1.4, 5.6.1
The Center of Mass of a Soft Spring, Juan D. Serna and Amitabh Joshi, 42:5, 2011, 389-393, C, 5.2.5, 5.2.9
Just Take the Limit!, Jody Picoult, 42:5, 2011, 431, C, 0.1, 0.8
An Exactly Solvable Model for the Spread of Disease, Ronald E. Mickens, 43:2, 2012, 114-120, 6.4
Eradicating a Disease: Lessons from Mathematical Epidemiology, Matthew Glomski and Edward Ohanian, 43:2, 2012, 123-132, 2.2, 6.4
Retrolife and the Pawns Neighbors, Yossi Elran, 43:2, 2012, 147-151, 3.3, 9.2
Student Research Project: The optimal level of insulation in a home attic, Paul Martin and Kirthi Premadasa, 43:2, 2012, 165-168, 5.1.4
Designing Medical Tests: The Other Side of Bayes' Theorem, Andrew M. Ross, 43:3, 2012, 251-253, C, 7.2
An Optimal Basketball Free Throw, D. N. Seppala-Holtzman, 43:5, 2012, 387-394
Winning a Racquetball Match, Tom Brown and Brian Pasko, 43:5, 2012, 395-400, 7.2

9.11 Software for advanced topics

A Mathematics Software Database, R. S. Cunningham and David A. Smith, 17:3, 1986, 255-266, 0.10, 3.4, 4.8, 5.8, 6.7, 7.4
A Mathematics Software Database Update, R. S. Cunningham and David A. Smith, 18:3, 1987, 242-247, 0.10, 3.4, 4.8, 5.8, 6.7, 7.4
The Compleat Mathematics Software Database, R. S. Cunningham and David A. Smith, 19:3, 1988, 268-289, 0.10, 3.4, 4.8, 5.8, 6.7, 7.4
Binary Operations, David P. Kraines and Vivian Y. Kraines and David A. Smith, 21:3, 1990, 240-241, C, 9.4
A Model for Your Curriculum?, Douglas Campbell, 22:2, 1991, 163-166
EXP, Version 3.02 for Windows, Jon Wilkin, 27:1, 1996, 68-73, 0.10
Scientific WorkPlace, Jerry Thornhill, 27:4, 1996, 305-311
Standard Math Interactive, William C. Bauldry, 29:3, 1998, 237-241
Mathematica Sortware Review, Steven Wilkinson, 29:4, 1998, 323-329, 5.8
Cyclone the Implicit 3D Plotter, Jon Wilkin, 30:1, 1999, 54-59, 5.8

10 Book Reviews

The History of the Calculus, Carl Boyer, 1:1, 1970, 60-86, summarized by Carl Boyer
Intermediate Algebra, Joseph Newmyer and Gus Klentes, 5:1, 1974, 60-61, reviewed by Edward B. Wright
Elementary Linear Algebra, Paul C. Shields, 5:1, 1974, 61-62, reviewed by Frank Hacker
Elementary Functions with Coordinate Geometry, Earl Swokowski, 5:1, 1974, 62, reviewed by Harry L.

Hancock
Basic Technical Mathematics with Calculus, Allyn J. Washington, 5:1, 1974, 62-63, reviewed by Judith Gersting
Programmed Mathematics for Nurses, George Sackheim and Lewis Robins, 5:1, 1974, 63-64, reviewed by Allen P. Angel
Business Mathematics—A Collegiate Approach, Nelda W. Roueche, 5:2, 1974, 55-56, reviewed by Lawrence Clar
Algebra Programmed, R. H. Alwin and R. D. Hackworth and J. Howland, 5:2, 1974, 56-57, reviewed by Gerald M. Smith
Mathematical Ideas, 2nd ed., Charles D. Miller and Vern E. Heeren, 5:2, 1974, 57, reviewed by Peter A. Lindstrom
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