
INDEX TO VOLUME 87

AUTHORS

- Alsina, Claudi and Roger B. Nelsen, *Proof Without Words: Ptolemy's Inequality*, 291
- Bényi, Árpád and Branko Ćurgus, *Outer Median Triangles*, 185–195
- Ball, Tyler, Tom Edgar, and Daniel Juda, *Dominance Orders, Generalized Binomial Coefficients, and Kummer's Theorem*, 135–143
- Bayer, Margaret and Keith Brandt, *The Pill Problem, Lattice Paths, and Catalan Numbers*, 388–394
- Beatty, Thomas and Timothy W. Jones, *A Simple Proof that $e^{p/q}$ Is Irrational*, 50–51
- Ben-Ari, Iddo and Keith Conrad, *Maclaurin's Inequality and a Generalized Bernoulli Inequality*, 14–24
- Berendonk, Stephan, *Proving the Reflective Property of an Ellipse*, 276–279
- Berglund, Jorgen and Ron Taylor, *Bisections and Reflections*, 284–290
- Beveridge, Andrew and Stan Wagon, *The Sorting Hat Goes to College*, 243–251
- Brandt, Keith, *see Bayer, Margaret*
- Brink, David, *A Solution to the Basel Problem that Uses Euclid's Inscribed Angle Theorem*, 222–224
- Butler, Steve, Ron Graham, and Linyuan Lu, *Unrolling Residues to Avoid Progressions*, 83–94
- Byer, Owen D. and Deirdre L. Smeltzer, *A 3-D Analog of Steiner's Porism*, 95–99
- Chapman, Scott T., *A Tale of Two Monoids: A Friendly Introduction to Nonunique Factorizations*, 163–173
- Ciaurri, Óscar, *One Picture, All the Conics*, 386–387
- Coll, Vincent and Maria Qirjollari, *Characterizing Power Functions by Hypervolumes of Revolution*, 225–227
- Coll, Vincent and Michael Harrison, *Gabriel's Horn: A Revolutionary Tale*, 263–274
- Conrad, Keith, *see Ben-Ari, Iddo*
- Corson, B. W., *A Pretzel for the Mind*, 228–229
- Cupillari, Antonella, *Maria Gaetana Agnesi's Other Curves (More Than Just the Witch)*, 3–13
- Ćurgus, Branko, *see Bényi, Árpád*
- Dalthorp, Mark, *Escape the Square*, 68
- Diamond, Harvey, *Defining Exponential and Trigonometric Functions Using Differential Equations*, 37–42
- Dunbar, Steven R., *see Fabrykowski, Jacek*
- Edgar, Tom, *see Ball, Tyler*
- Evans, Ron and Lihua Huang, *Mind Switches in Futurama and Stargate*, 252–262
- Fabrykowski, Jacek and Steven R. Dunbar, *43rd USA Mathematical Olympiad, 5th USA Junior Mathematical Olympiad*, 301–309
- Fisher, J. Chris, Larry Hoehn, and Eberhard M. Schröder, *A 5-Circle Incidence Theorem*, 44–49
- Frayner, Christopher, Miyeon Kwon, Christopher Schafhauser, and James A. Swenson, *The Geometry of Cubic Polynomials*, 113–124
- Garcia, Victor and Jean Pedersen, *Mathematics, Models, and Magz, Part II: Investigating Patterns in Pascal's Simplex*, 362–376
- Gordon, Russell A., *Integer-Sided Triangles with Trisectible Angles*, 198–211
- Graham, Ron, *see Butler, Steve*
- Guy, Richard K., Tanya Khovanova, and Julian Salazar, *Conway's Subprime Fibonacci Sequences*, 323–337
- Harrison, Michael, *see Coll, Vincent*
- Heath, Daniel J., *Straightedge and Compass Constructions in Spherical Geometry*, 350–359
- Hoehn, Larry, *Proof Without Words: Rapid Construction of Altitudes of Triangles*, 349
- Hoehn, Larry, *see Fisher, J. Chris*
- Huang, Lihua, *see Evans, Ron*
- Jones, Timothy W., *see Beatty, Thomas*
- Juda, Daniel, *see Ball, Tyler*
- Khovanova, Tanya, *see Guy, Richard K.*

- Kobayashi, Mitsuo, *A Dissection Proof of Leibniz's Series for $\pi/4$* , 145–150
- Kronenthal, Brian G. and Felix Lazebnik, *When Can You Factor a Quadratic Form?* 25–36
- Kwon, Miyeon, *see Frayer, Christopher*
- Lazebnik, Felix, *see Kronenthal, Brian G.*
- Lazebnik, Felix, *Surprises*, 212–221
- Leahy, Andrew, *Evangelista Torricelli and the "Common Bond of Truth" in Greek Mathematics*, 174–184
- Loh, Po-Shen, *55th International Mathematical Olympiad*, 310–317
- Lu, Linyuan, *see Butler, Steve*
- Lunsford, Matt, *Cardano, Casus Irreducibilis, and Finite Fields*, 377–380
- Lynch, Mark, *Math Bite: Indeterminate Forms*, 94
- Mateer, Todd D., *A Reed-Solomon Code Magic Trick*, 125–131
- Nelsen, Roger B., *see Alsina, Claudi*
- Nystedt, Patrik, *A Proof of the Cosine Addition Formula Using the Law of Cosines*, 144
- Park, Poo-Sung, *Some Logarithmic Approximations for π and e* , 43
- Pedersen, Jean, *see Garcia, Victor*
- Polster, Burkard, *Viviani à la Kawasaki: Take Two*, 280–283
- Pudwell, Lara and Rachel Rockey, *de Bruijn Arrays for L-Fillings*, 57–60
- Qirjollari, Maria, *see Coll, Vincent*
- Rockey, Rachel, *see Pudwell, Lara*
- Salazar, Julian, *see Guy, Richard K.*
- Sallows, Lee, *A Triangle Theorem*, 381
- Sallows, Lee, *More On Self-Tiling Tile Sets*, 100–112
- Schafhauser, Christopher, *see Frayer, Christopher*
- Schneider, Robert P., *A Golden Product Identity for e* , 132–134, 143
- Schröder, Eberhard M., *see Fisher, J. Chris*
- Smeltzer, Deirdre L., *see Byer, Owen D.*
- Sodsiri, Wijarn, *Multiplicative Subgroups of \mathbb{C} that Contain Regular Jordan Curves*, 382–385
- Sullivan, Brendan W., *Award Winners (Crossword)*, 360–361, 402
- Sullivan, Brendan W., *Types Theory (Crossword)*, 196–197, 211
- Swenson, James A., *see Frayer, Christopher*
- Taylor, Ron, *see Berglund, Jorgen*
- Towse, Christopher, *Iteration of Sine and Related Power Series*, 338–349
- Wagon, Stan, *see Beveridge, Andrew*
- Witkowski, Alfred, *Proof Without Words: An Electrical Proof of the AM-HM inequality*, 275
- Xu, Connie, *A Unique Area Property of the Quadratic Function*, 52–56

TITLES

- 3-D Analog of Steiner's Porism, A*, by Owen D. Byer and Deirdre L. Smeltzer, 95–99
- 43rd USA Mathematical Olympiad, 5th USA Junior Mathematical Olympiad*, by Jacek Fabrykowski and Steven R. Dunbar, 301–309
- 55th International Mathematical Olympiad*, by Po-Shen Loh, 310–317
- 5-Circle Incidence Theorem, A*, by J. Chris Fisher, Larry Hoehn, and Eberhard M. Schröder, 44–49
- Award Winners (Crossword)*, by Brendan W. Sullivan, 360–361, 402
- Bisections and Reflections*, by Jorgen Berglund and Ron Taylor, 284–290
- Cardano, Casus Irreducibilis, and Finite Fields*, by Matt Lunsford, 377–380
- Characterizing Power Functions by Hypervolumes of Revolution*, by Vincent Coll and Maria Qirjollari, 225–227
- Conway's Subprime Fibonacci Sequences*, by Richard K. Guy, Tanya Khovanova, and Julian Salazar, 323–337
- de Bruijn Arrays for L-Fillings*, by Lara Pudwell and Rachel Rockey, 57–60
- Defining Exponential and Trigonometric Functions Using Differential Equations*, by Harvey Diamond, 37–42
- Dissection Proof of Leibniz's Series for $\pi/4$* , A, by Mitsuo Kobayashi, 145–150
- Dominance Orders, Generalized Binomial Coefficients, and Kummer's Theorem*, by Tyler Ball, Tom Edgar, and Daniel Juda, 135–143
- Escape the Square*, by Mark Dalthorp, 68
- Evangelista Torricelli and the "Common Bond of Truth" in Greek Mathematics*, by Andrew Leahy, 174–184
- Gabriel's Horn: A Revolutionary Tale*, by Vincent Coll and Michael Harrison, 263–274
- Geometry of Cubic Polynomials, The*, by Christopher Frayer, Miyeon Kwon, Christopher Schafhauser, and James A. Swenson, 113–124
- Golden Product Identity for e* , A, by Robert P.

- Schneider, 132–134, 143
- Integer-Sided Triangles with Trisectible Angles*, by Russell A. Gordon, 198–211
- Iteration of Sine and Related Power Series*, by Christopher Towse, 338–349
- Maclaurin's Inequality and a Generalized Bernoulli Inequality*, by Iddo Ben-Ari and Keith Conrad, 14–24
- Maria Gaetana Agnesi's Other Curves (More Than Just the Witch)*, by Antonella Cupillari, 3–13
- Math Bite: Indeterminate Forms*, by Mark Lynch, 94
- Mathematics, Models, and Magz, Part II: Investigating Patterns in Pascal's Simplex*, by Victor Garcia and Jean Pedersen, 362–376
- Mind Switches in Futurama and Stargate*, by Ron Evans and Lihua Huang, 252–262
- More On Self-Tiling Tile Sets*, by Lee Sallows, 100–112
- Multiplicative Subgroups of \mathbb{C} that Contain Regular Jordan Curves*, by Wijarn Sodsiri, 382–385
- One Picture, All the Conics*, by Óscar Ciaurri, 386–387
- Outer Median Triangles*, by Árpád Bényi and Branko Čurgus, 185–195
- Pill Problem, Lattice Paths, and Catalan Numbers, The*, by Margaret Bayer and Keith Brandt, 388–394
- Pretzel for the Mind*, A, by B. W. Corson, 228–229
- Proof of the Cosine Addition Formula Using the Law of Cosines*, A, by Patrik Nystedt, 144
- Proof Without Words: An Electrical Proof of the AM-HM inequality*, by Alfred Witkowski, 275
- Proof Without Words: Ptolemy's Inequality*, by Claudi Alsina and Roger B. Nelsen, 291
- Proof Without Words: Rapid Construction of Altitudes of Triangles*, by Larry Hoehn, 349
- Proving the Reflective Property of an Ellipse*, by Stephan Berendonk, 276–279
- Reed-Solomon Code Magic Trick*, A, by Todd D. Mateer, 125–131
- Simple Proof that $e^{p/q}$ Is Irrational*, A, by Thomas Beatty and Timothy W. Jones, 50–51
- Solution to the Basel Problem that Uses Euclid's Inscribed Angle Theorem*, A, by David Brink, 222–224
- Some Logarithmic Approximations for π and e* , by Poo-Sung Park, 43
- Sorting Hat Goes to College, The*, by Andrew Beveridge and Stan Wagon, 243–251
- Straightedge and Compass Constructions in Spherical Geometry*, by Daniel J. Heath, 350–359
- Surprises*, by Felix Lazebnik, 212–221
- Tale of Two Monoids: A Friendly Introduction to Nonunique Factorizations*, A, by Scott T. Chapman, 163–173
- Triangle Theorem*, A, by Lee Sallows, 381
- Types Theory (Crossword)*, by Brendan W. Sullivan, 196–197, 211
- Unique Area Property of the Quadratic Function*, A, by Connie Xu, 52–56
- Unrolling Residues to Avoid Progressions*, by Steve Butler, Ron Graham, and Linyuan Lu, 83–94
- Viviani à la Kawasaki: Take Two*, by Burkard Polster, 280–283
- When Can You Factor a Quadratic Form?* by Brian G. Kronenthal and Felix Lazebnik, 25–36

PROBLEMS

The letters P, Q, and S refer to Proposals, Quickies, and Solutions, respectively; page numbers appear in parentheses. For example, P1938 (62) refers to Proposal 1938, which appears on page 62.

- Amarasinghe, G. W. Indika Shameera, P1938 (62)
- Andriopoulos, Spiros P., P1941 (151)
- Apostolopoulos, George, S1922 (234), P1954 (292)
- Bailey, Herb, P1937 (61)
- Bataille, Michel, S1925 (236), Q1044 (293), S1928 (295), S1932 (397)
- Bencze, Mihály, P1943 (151)
- Bojaxhiu, Elton and Enkel Hysnelaj, P1955 (293)
- Botsko, Michael W., P1940 (62), P1945 (152), Q1046 (396)
- Calcaterra, Robert, S1916 (152), S1924 (235)
- Cheng, Eddie and Jerrold W. Grossman, P1959 (396)
- Chiriță, Marcel, P1939 (62), P1942 (151), P1946 (230), P1958 (395)
- CMC 328, Carlton College, S1912 (64)
- Doucette, Robert L., S1911 (63)
- Downes, Rob, P1949 (231)
- Falcón, Sergio, Ángel Plaza, and José M. Pacheco, S1923 (234)
- Furdui, Ovidiu, Q1040 (152)
- Goldenberg, Michael and Mark Kaplan, Q1043 (293), P1960 (396)
- Grossman, Jerrold W. and Eddie Cheng, P1959 (396)
- GWstat Problem Solving Group, The George Washington University, S1926 (293)
- Hajja, Mowaffaq, Q1037 (62)
- Hajja, Mowaffaq and Mostafa Hayajneh, P1944 (152)
- Hall, Timothy, P1951 (292), Q1045 (396)
- Hayajneh, Mostafa and Mowaffaq Hajja, P1944 (152)
- Hysnelaj, Enkel and Elton Bojaxhiu, P1955 (293)
- Ibragimov, Shokhrukh, S1921 (232)
- Iiams, Joel, S1913 (65)
- Ilic, Aleksandar, P1950 (231)
- Iowa State University Student Problem Solving Group, The, S1929 (296), S1933 (398)
- Kaplan, Mark and Michael Goldenberg, Q1043 (293), P1960 (396)
- Karachik, Valery, P1956 (395)
- Kouba, Omran, S1915 (67), S1930 (297)
- Lupo, Cezar, Q1039 (152)
- Martin, Charles, S1917 (153), S1921 (233)
- McDevitt, Tim, S1919 (155)
- McPolin, Peter, S1918 (154)
- Morris, Howard Cary, P1948 (230)
- Mortini, Raymond and Jérôme Noël, P1947 (230)
- Noël, Jérôme and Raymond Mortini, P1947 (230)
- Pacheco, José M., Ángel Plaza, and Sergio Falcón, S1923 (234)
- Plaza, Ángel, P1952 (292)
- Plaza, Ángel, Sergio Falcón, and José M. Pacheco, S1923 (234)
- Samer, Andrew, S1934 (399)
- Schmeichel, Edward, S1931 (397)
- Schwenk, Allen, P1936 (61)
- ShahAli, H. A., Q1038 (62), Q1042 (232)
- Sinefakopoulos, Achilleas, S1927 (294)
- Steinberger, Thomas, S1920 (157)
- Sung, Wong Fook, P1957 (395)
- Tauraso, Roberto, P1953 (292)
- Wagon, Stan, S1935 (400)
- Zacharias, John, S1914 (66)
- Zimmerman, Seth, Q1041 (231)