

## Journals Published by the American Mathematical Society

---

---

### Bulletin of the American Mathematical Society

This journal is the official organ of the Society. It reports official acts of the Society and the details of its meetings. It contains some of the officially invited addresses presented before the Society, reviews of advanced mathematical books, and a department of research announcements.

The subscription price is \$12.00 per annual volume of six numbers.

Invited Addresses offered for publication should be sent to MURRAY GERSTENHABER, Department of Mathematics, University of Pennsylvania, Philadelphia, Pennsylvania 19104.

Book Reviews should be sent to GIAN-CARLO ROTA, Mathematics Department, Massachusetts Institute of Technology, Cambridge, Massachusetts 02139.

All Research Announcements should be sent to M. H. PROTTER, Department of Mathematics, University of California, Berkeley, California 94720.

All other communications to the editors should be sent to the Managing Editor, MURRAY GERSTENHABER, at the above address.

### Proceedings of the American Mathematical Society

This journal is devoted entirely to research in pure and applied mathematics and is devoted principally to the publication of original papers of moderate length. A department called Shorter Notes was established for the purpose of publishing very short papers of an unusually elegant and polished character, for which there is normally no other outlet.

Papers in algebra, number theory, and algebraic geometry should be sent to ARTHUR P. MATTUCK, Department of Mathematics, Massachusetts Institute of Technology, Cambridge, Massachusetts or IRVING REINER, Department of Mathematics, University of Illinois, Urbana, Illinois; in modern or classical analysis to IRVING GLICKSBERG, Department of Mathematics, University of Washington, Seattle, Washington 98105 or to W. H. J. FUCHS, White Hall, Cornell University, Ithaca, New York 14850; in set-theoretic and general topology to ERNEST A. MICHAEL, Department of Mathematics, University of Washington, Seattle, Washington 98105; in algebraic topology and all other geometry to P. EMERY THOMAS, Department of Mathematics, University of California, Berkeley, California 94720; in applied mathematics, differential equations, and related areas of analysis to WOLFGANG WASOW, Mathematics Department, University of Wisconsin, Madison, Wisconsin 53706; in probability, statistics, and related fields to JOSHUA CHOVER, Mathematics Department, University of Wisconsin, Madison, Wisconsin 53706; in logic, set theory, and related areas to W. W. BOONE, Mathematics Department, University of Illinois, Urbana, Illinois 61801. All other communications should be addressed to the Managing Editor, ARTHUR MATTUCK.

### Transactions of the American Mathematical Society

This journal is devoted entirely to research in pure and applied mathematics, and includes in general longer papers than the PROCEEDINGS.

Papers in analysis and applied mathematics should be sent to J. J. KOHN, Department of Mathematics, Brandeis University, Waltham, Massachusetts 02154; in topology to FRANKLIN PETERSON, Department of Mathematics, Massachusetts Institute of Technology, Cambridge, Massachusetts 02139; in algebra, number theory, and logic to D. A. BUCHSBAUM, Department of Mathematics, Brandeis University, Waltham, Massachusetts 02154; in geometry and abstract analysis to R. S. PALAIS, Department of Mathematics, Brandeis University, Waltham, Massachusetts 02154; in statistics and probability to H. P. MCKEAN, Department of Mathematics, Rockefeller University, New York, New York 10021; in mathematical logic and foundations to DANA SCOTT, Department of Mathematics, Stanford University, Stanford, California 94305. All other communications to the editors should be addressed to the Managing Editor, DANA SCOTT.

## Journals Published by the American Mathematical Society

---

---

### Soviet Mathematics—Doklady

**SOVIET MATHEMATICS—DOKLADY** is a translation journal containing the entire pure mathematics section of the **DOKLADY AKADEMI NAUK SSSR**, the Reports of the Academy of Sciences of the USSR. The **DOKLADY** for a year contains about 500 articles, each about 4 pages long. Issued bimonthly.

### Mathematical Reviews

This journal is devoted to abstracts and reviews of the current mathematical literature of the world. Two volumes of **MATHEMATICAL REVIEWS** will be published in 1969, Volume 37, and Volume 38. Each volume will consist of 6 regular issues plus an index issue. In each regular issue the abstracts and reviews are grouped under subject headings. Publication began in 1940.

### Notices of the American Mathematical Society

This journal announces the programs of the meetings of the Society. It carries the abstracts of all contributed papers presented at the meetings of the Society and publishes news items of interest to mathematical scientists.

All communications should be addressed to the Editor, P.O. Box 6248, Providence, Rhode Island 02904. News items and insertions for each issue must be in the hands of the editor on or before the deadline for the abstracts for the papers to be presented in the meetings announced in that issue. These deadlines are published regularly on the back of the title page.

### Mathematics of Computation

A journal devoted to original papers in numerical analysis, the application of numerical methods and high-speed calculator devices, the computation of mathematical tables, the theory of high-speed calculating devices and other aids to computation. In addition it publishes reviews and notes in these and related fields.

Prospective publications should be addressed to the Editor, Professor Eugene Isaacson, Courant Institute of Mathematical Sciences, New York University, 251 Mercer Street, New York, New York 10012. The author may suggest the name of an editor for review of his paper.

### New Publications

This quarterly journal announces new books and journals in all fields of higher mathematics, including a section on both forthcoming and recently published books. The information is acquired from several sources, such as pamphlets and catalogs received from publishers and book dealers from many parts of the world.

### Mathematics of the USSR—Izvestija

This journal is a cover-to-cover translation of *Izvestija Akademii Nauk SSSR Serija Matematičeskaja*, published bimonthly by the Academy of Sciences of the USSR. It is a journal of current research in all fields of pure mathematics. Starting with Volume 1, Number 1, January-February 1967, which corresponds to the Russian original Tom 31, Number 1, the translation is prepared by the Plenum Publishing Corporation with the cooperation of the American Mathematical Society, and is published bimonthly by the American Mathematical Society.

### Mathematics of the USSR—Sbornik

This journal is a cover-to-cover translation of *Matematičeskii Sbornik* (New Series), published monthly by the Moscow Mathematical Society and the Academy of Sciences of the USSR. It is a journal of current research in all fields of pure mathematics. The translation is published monthly starting with Volume 1, Number 1, January 1967, which corresponds to the Russian original Tom 72 (114), No. 1.

**CONTENTS**—continued from back cover

A. Wayne Roberts and Dale E. Varberg. Functions of bounded convexity.....	568
Harry Kesten. A convolution equation and hitting probabilities of single points for processes with stationary independent increments.....	573
Ole A. Nielsen. Maximal abelian subalgebras in hyperfinite factors.....	579
Robert Williamson. Surgery in $M \times N$ with $\pi_1 M \neq 1$ .....	582
Steven Schonefeld. Schauder bases in spaces of differentiable functions.....	586
William Fulton. A note on weakly complete algebras.....	591
Lewis C. Robertson. A note on the structure of Moore groups.....	594
Horacio Porta. Two sided ideals of operators.....	599
Moshe Jarden. Rational points on algebraic varieties over large number fields.....	603
Neil Gray. A new characterization of $AR(\mathfrak{N})$ and $ANR(\mathfrak{N})$ .....	607
Lawrence Conlon. Applications of affine root systems to the theory of symmetric spaces.....	610
B. V. Rao. On discrete Borel spaces and projective sets.....	614
I. M. James. On sphere-bundles. I.....	617
J. A. Goguen. Categories of $V$ -sets.....	622
Erratum, Volume 75.....	624

---

The members of the Council for 1969 are: R. D. Anderson, Louis Auslander, Hyman Bass, P. T. Bateman, D. H. Blackwell, Armand Borel, Raoul H. Bott, Felix Browder, William Browder, E. H. Brown, Jr., David Buchsbaum, Paul J. Cohen, H. S. M. Coxeter, Avner Freidman, K. O. Friedrichs, W. H. J. Fuchs, F. W. Gehring, Murray Gerstenhaber, Leonard Gillman, Wallace Givens, Irving Glicksberg, P. R. Halmos, O. G. Harrold, I. N. Herstein, Eugene Isaacson, Victor Klee, J. J. Kohn, Ray A. Kunze, Serge Lang, George Mackey, Saunders MacLane, W. T. Martin, A. P. Mattuck, H. P. McKean, Jr., E. Michael, C. B. Morrey, Jr., J. K. Moser, R. S. Palais, Frank Peterson, R. S. Pierce, Everett Pitcher, Murray Protter, Irving Reiner, Gian-Carlo Rota, J. T. Schwartz, Dana Scott, George Seligman, Stephen Smale, N. E. Steenrod, Michio Suzuki, P. E. Thomas, W. R. Wasow, Bertram Yood, Oscar Zariski.

# CONTENTS

May, 1969

The Annual Meeting in New Orleans . . . . .	471
William A. Veech. Minimal transformation groups with distal points . . . . .	481
Robert Fennell and Paul Waltman. Boundary value problems for functional differential equations . . . . .	487
Roger D. Nussbaum. The fixed point index and asymptotic fixed point theorems for $k$ -set-contractions . . . . .	490
T. Y. Lam and I. Reiner. Relative Grothendieck rings . . . . .	496
S. Robert Gordon. On the automorphism group of a semisimple Jordan algebra of characteristic zero . . . . .	499
Harley Flanders. Free exterior powers . . . . .	505
L. S. Husch. Mapping cylinders and the annulus conjecture . . . . .	506
Charles H. Giffen. Smooth homotopy projective spaces . . . . .	509
Arun Vinayak Jategaonkar. Local left noetherian ipli-rings . . . . .	514
Gerald S. Goodman. A method for comparing univalent functions . . . . .	517
William K. Allard. On boundary regularity for Plateau's problem . . . . .	522
M. von Golitschek. Generalization of the Jackson approximation theorems in the sense of Ch. Müntz . . . . .	524
J. Alexander Lees. Immersions and surgeries of topological manifolds . . . . .	529
R. Lashof. Lees' immersion theorem and the triangulation of manifolds . . . . .	535
M. Susan Montgomery. Left and right inverses in group algebras . . . . .	539
Edward B. Curtis. Some nonzero homotopy groups of spheres . . . . .	541
David R. Brillinger. An asymptotic representation of the sample distribution function . . . . .	545
Martin Schechter. Partial differential operators on $L^p(E^n)$ . . . . .	548
Charles Goldstein. Eigenfunction expansions and similarity for certain nonselfadjoint operators . . . . .	550
Lawrence Fearnley. The pseudo-circle is not homogeneous . . . . .	554
Arun Vinayak Jategaonkar. Rings with transfinite left division algorithm . . . . .	559
Chung-ming An. On a generalization of the gamma function and its application to certain Dirichlet series . . . . .	562

*Continued on inside back cover*