

HAVE YOU COMPLETED THE QUESTIONNAIRE
of the
MATHEMATICS AND STATISTICS SECTION
of the
NATIONAL REGISTER OF
SCIENTIFIC AND TECHNICAL PERSONNEL?

At the request of the National Science Foundation, the American Mathematical Society has mailed the 1964 reporting forms to its section in the National Register. The main objective of the Register is to provide up-to-date information on the scientific manpower resources of the United States. It is also increasingly valuable to our profession as a source of statistical information.

We are counting again on the splendid cooperation accorded to the previous cycle of the Register by most of the mathematicians and mathematical scientists.

If you received a National Register questionnaire from the Society, won't you please fill it in now and send it to the Headquarters Offices of the Society at 190 Hope Street, Providence, Rhode Island 02906?

If you have never received a questionnaire and feel that you are qualified for inclusion in the Register, please drop us a note to that effect at the above address.

GORDON L. WALKER
Executive Director

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 AKADEMIĬ NAUK SSSR, the Reports of the Academy of Sciences of the USSR. The DOKLADY for a year contains more than 500 articles, each about 4 pages long. Issued bimonthly in January, March, May, July, September, and November.

Subscriptions, \$35.00.

Single issues are \$7.00. Vols. 1, 2, 3, and 4 (1960–1963), price per volume \$40.00.

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 1964, Volume 27 and Volume 28. 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. Subscription price per volume of 7 issues is \$50.00; 2 volumes per year \$100.00.

Prior to 1961 it appeared in eleven single issues. Orders for complete volumes only are accepted. Volumes 1–24 are available at the following prices: Vols. 1–16 (1940–1955), \$42.00 each; all other volumes \$50.00.

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.

The subscription price is \$7.00 per annual volume of seven numbers. A single copy is \$2.00. Orders for back volumes (back issues of the last two years only are available) are \$14.00 per volume.

All communications should be addressed to the Editor, 190 Hope Street, Providence, Rhode Island 02906. 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. Published by the Society for the National Academy of Sciences–National Research Council.

The subscription price is \$8.00 per volume of 4 issues. Single copies are \$2.50. *Back issues* insofar as they are available: (1943–1962) \$3.00 per issue; \$12.00 per volume. Write for specific information concerning availability.

Chinese Mathematics—Acta

This is a cover-to-cover translation into English of Acta Mathematica Sinica published by Academia Sinica Peking, People's Republic of China. Acta Mathematica Sinica contains current research in all fields of pure mathematics. Subscription price per volume \$20.00.

Volume 1, 1962 of the translation (corresponding to Volume 10, 1960 of the original) contained three issues. Volume 2, 1963 (Volume 11, 1961) and Volume 3, 1963 (Volume 12, 1962 of the original) will have four issues. In each case the translation will have the same number of issues as the original.

Back volumes \$30.00; single issue price one third of the volume price.

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, research problems and a department of research announcements.

The subscription price is \$7.00 per annual volume of six numbers.

Research Problems and Invited Addresses offered for publication should be sent to WALTER RUDIN, Department of Mathematics, University of Wisconsin, Madison, Wisconsin; Book Reviews to FELIX BROWDER, School of Mathematics, Institute for Advanced Study, Princeton, New Jersey. Research Announcements offered for publication should be sent to some member of the Council of the Society, and communicated by him to E. H. SPANIER, Department of Mathematics, University of California, Berkeley 4, California. All other communications to the editors should be sent to the Managing Editor, FELIX BROWDER.

The members of the Council for 1964 are: A. A. Albert, H. A. Antosiewicz, Lipman Bers, Felix Browder, R. C. Buck, Eugenio Calabi, S. S. Chern, P. E. Conner, C. W. Curtis, M. L. Curtis, D. A. Darling, J. L. Doob, G. F. D. Duff, Eldon Dyer, J. W. Green, P. R. Halmos, G. A. Hedlund, M. H. Heins, L. A. Henkin, Edwin Hewitt, A. S. Householder, G. A. Hunt, Nathan Jacobson, Fritz John, V. L. Klee, P. D. Lax, M. M. Loève, R. C. Lyndon, G. W. Mackey, Lawrence Markus, W. S. Massey, A. E. Meder, Jr., J. W. Milnor, G. D. Mostow, Louis Nirenberg, R. S. Pierce, Everett Pitcher, Alex Rosenberg, Walter Rudin, Seymour Sherman, I. M. Singer, E. H. Spanier, J. D. Swift, Michio Suzuki, A. E. Taylor, J. V. Wehausen, John Wermer, George Whaples, Daniel Zelinsky, Leo Zippin, Antoni Zygmund.

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.

The subscription price is \$11.00 per annual volume of six numbers.

Papers in algebra and number theory should be sent to ALEX ROSENBERG, Department of Mathematics, Cornell University, Ithaca, New York or GEORGE WHAPLES, Department of Mathematics, Indiana University, Bloomington, Indiana; in probability, real variables, logic, and foundations to R. C. BUCK, Department of Mathematics, University of Wisconsin, Madison 6, Wisconsin; in abstract analysis to either R. C. BUCK or ALEX ROSENBERG; in geometry and topology to ELDON DYER, Eckhart Hall, University of Chicago, Chicago 37, Illinois; in other branches of analysis, applied mathematics, and all other fields to M. H. HEINS, Department of Mathematics, University of Illinois, Urbana, Illinois, or FRITZ JOHN, Courant Institute of Mathematical Sciences, 4 Washington Place, New York 3, New York. All other communications to the editors should be addressed to the Managing Editor, ELDON DYER.

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.

Four volumes of three numbers each will be published in 1964. The subscription price is \$8.00 per volume.

Papers in analysis and applied mathematics should be sent to LIPMAN BERS, Courant Institute of Mathematical Sciences, New York University, New York 3, New York; in topology to W. S. MASSEY, Department of Mathematics, Yale University, Box 2155, Yale Station, New Haven, Connecticut; in algebra, number theory, and logic to DANIEL ZELINSKY, Department of Mathematics, Northwestern University, Evanston, Illinois; in geometry and abstract analysis to I. M. SINGER, Department of Mathematics, Massachusetts Institute of Technology, Cambridge 39, Massachusetts; in statistics and probability to MICHEL LOÈVE, Department of Statistics, University of California, Berkeley 4, California. All other communications to the editors should be addressed to the Managing Editor, DANIEL ZELINSKY.

CONTENTS—*Continued from back cover*

R. E. Lynch, J. R. Rice and D. H. Thomas. Tensor product analysis of partial difference equations.....	378
H. Bass, M. Lazard et J.-P. Serre. Sous-groupes d'indice fini dans $SL(n, \mathcal{Z})$	385
Shôichirô Sakai. On the reduction theory of von Neumann.	393
E. J. Tully, Jr. The equivalence, for varieties of semigroups, of two properties concerning congruence relations.....	399
Shoshichi Kobayashi and Tadashi Nagano. A theorem on filtered Lie algebras and its applications.....	401
J. W. T. Youngs. Irreducible graphs.....	404
Albert Nijenhuis and R. W. Richardson, Jr. Cohomology and deformations of algebraic structures.....	406
R. Accola. Invariant domains for Kleinian groups.....	412
Guillermo Restrepo. Differentiable norms in Banach spaces..	413
Charles Greathouse. Locally flat strings.....	415
E. L. Stout. Some theorems on bounded holomorphic functions.....	419
Harold Rosenberg. A generalization of Morse-Smale inequalities.....	422
J. T. Parr. Cohomology of cyclic groups of prime square order.....	427
Hyman Bass. The stable structure of quite general linear groups.....	429

CONTENTS

May, 1964

Book Reviews

- Saunders MacLane. Homology. Reviewed by D. A. Buchsbaum..... 329
- Louis Auslander and R. E. MacKenzie. Introduction to differentiable manifolds. Reviewed by Robert Hermann.. 331
- S. Wylie and P. J. Hilton. Homology theory. An introduction to algebraic topology. Reviewed by W. S. Massey..... 333
- Vito Volterra. Opere matematiche. Memorie e Note. Reviewed by A. Weinstein..... 335

Research Problems

- Daihachiro Sato. Function theory..... 338
- J. R. Isbell. Piecewise polynomial functions..... 339
- E. M. Horadam. Number theory or numerical semigroups. 339
- D. E. Daykin. Space filling with unequal cubes..... 340
- R. R. Korfhage. On a sequence of prime numbers..... 341
- The Annual Meeting in Miami..... 343
- The February Meeting in New York..... 356

Research Announcements

- C. W. Curtis. Groups with a Bruhat decomposition..... 357
- Weishu Shih. On the group $\mathcal{E}[X]$ of homotopy equivalence maps..... 361
- A. Ionescu Tulcea. Ergodic properties of isometries in L^p spaces, $1 < p < \infty$ 366
- M. W. Hirsch and John Milnor. Some curious involutions of spheres..... 372

Continued on inside back cover