

Continued from inside front cover

Nonstandard set theory. By PETER FLETCHER	1000
A note on direct sums of Friedberg numberings. By MARTIN KUMMER	1009
Digital simulation of analog computation and Church's thesis. By LEE RUBEL	1011
Finite axiomatizability for equational theories of computable groupoids. By PETER PERKINS	1018
Creativeness and completeness in recursion categories of partial recursive oper- ators. By FRANCO MONTAGNA and ANDREA SORBI	1023
A first approach to abstract modal logics. By JOSEP M. FONT and VENTURA VERDÚ	1042
Propositional proof systems, the consistency of first order theories and the com- plexity of computations. By JAN KRAJÍČEK and PAVEL PUDLÁK	1063
Groups of finite Morley rank with transitive group automorphisms. By ALI NESIN	1080
Time polynomial in input or output. By YURI GUREVICH and SAHARON SHELAH	1083
Reviews	1089
Notices	1119

The JOURNAL is the official organ of the Association for Symbolic Logic, an international organization for furthering research in symbolic logic and exchange of ideas among mathematicians, philosophers, and others interested in this field.

Individual membership in the Association is open to anyone interested in its work. Annual dues for members are \$36, or \$18 for students. Dues include subscription to the current volume of the JOURNAL.

Institutional membership in the Association is available to any academic institution or department. Annual dues are \$250. Membership privileges include choices of current subscriptions, of back volumes, and of student memberships; a detailed description is available from the Association. Information on corporate membership is also available from the Association.

Notices of change of address, dues, and subscriptions to the JOURNAL should be sent to *The Association for Symbolic Logic, P.O. Box 70557, Pasadena, CA 91117*.

Requests for information, applications for membership, business correspondence, and notices and announcements for publication in the JOURNAL should be sent to the Secretary-Treasurer of the Association, *C. Ward Henson, Department of Mathematics, University of Illinois, 1409 W. Green Street, Urbana, IL 61801*.

Articles being submitted for publication in the JOURNAL should be sent in duplicate to one of the following editors: *Peter Aczel, Department of Mathematics, Manchester University, Manchester M13 9PL, England*; or *Stephen A. Cook, Department of Computer Science, University of Toronto, Toronto M5S 1A4, Canada*; or *Alexander Kechris, Department of Mathematics, California Institute of Technology, Pasadena, CA 91125*; or *Julia Knight, Department of Mathematics, University of Notre Dame, Notre Dame, IN 46556*; or *Richard Shore, Department of Mathematics, Cornell University, Ithaca, NY 14853*; or *A. S. Troelstra, Mathematisch Instituut, Universiteit van Amsterdam, Roetersstraat 15, Amsterdam 1018 WB, The Netherlands*; or *Johan van Benthem, Mathematisch Instituut, Universiteit van Amsterdam, Roetersstraat 15, Amsterdam 1018 WB, The Netherlands*; or *Bas van Fraassen, Department of Philosophy, Princeton University, Princeton, NJ 08544*. The editor in charge of survey and expository articles is *John P. Burgess, Department of Philosophy, Princeton University, Princeton, NJ 08544*.

Each manuscript should be typewritten with wide margins and with double spacing between the lines. Footnotes should be numbered consecutively and should also be typed with wide margins and double spacing, preferably on a separate sheet. Two copies of the manuscript should be sent to the editor, and the author should also keep a complete copy. Fifty reprints of each article are supplied at no charge, and additional reprints may be purchased if desired.

Authors of papers (excluding survey/expository papers and reviews) accepted for publication in the JOURNAL are notified of the approximate number of printed pages. At that time they are asked, if funds are available from supporting institutions or grants, to arrange for payment of page charges of \$30 per printed page. This involves no financial obligation for the author, and acceptance of the paper will not be affected by whether payment is made.