

# IN TOUGH WITH NEW DIMENSIONS

Another achievement of IBM Applied Scientists:  
general computer program for job shop simulation

Creating imaginative solutions to problems never solved before is a job of IBM Applied Science Representatives. Through unique applications of data processing, they are exploring new dimensions in engineering, the sciences, and business.

One team of Applied Scientists, for example, worked closely with customers to simulate industrial job shop operations on a computer. A general program for this purpose allows firms to pre-test changes in production scheduling.

Other Applied Science Representatives are working on design analysis, forecasting, problems of mathematical computation, and process control. The range of projects is unlimited.

You may play an important and rewarding part in this stimulating profession. There are openings in many cities for men and women with advanced degrees in engineering, math, or a physical science, or a degree in one of these areas plus a Master's in business administration or experience in programming.

For a confidential interview, please call any IBM Branch Office or one of these Regional Managers of Applied Science:

L. M. Fulton

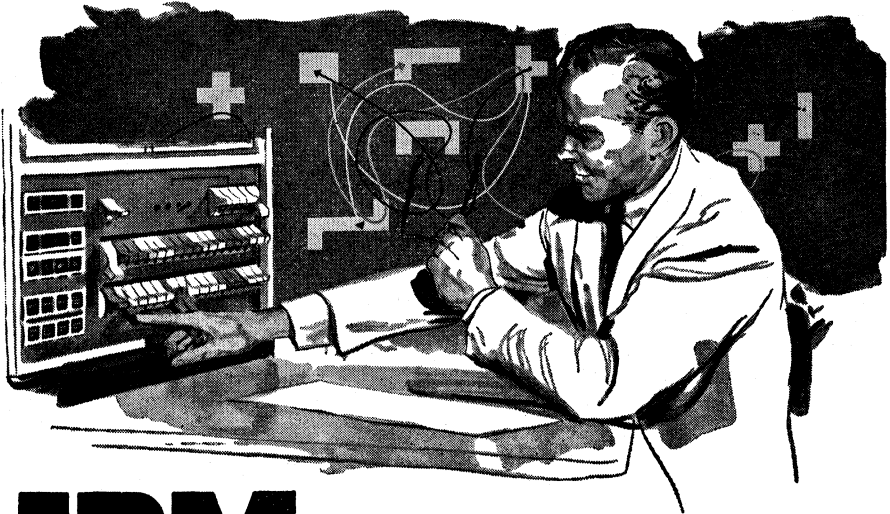
IBM Corporation  
425 Park Avenue  
New York 22, N. Y.

R. W. DeSio

IBM Corporation  
618 S. Michigan Ave.  
Chicago 5, Ill.

L. C. Hubbard

IBM Corporation  
3424 Wilshire Blvd.  
Los Angeles 5, Calif.



# IBM®

DATA PROCESSING DIVISION

# CONTEMPORARY PSYCHOLOGY

A Journal of  
Reviews  
Criticism  
Opinion

---

*No time to read?*

Let *CP* help with . . .

Selective reviews of the latest books by specialists in the particular field involved.

Comment by the Editor on news from the publishing world, on the printed word in particular and in general, on criticism, reviewing, and opinion.

Feedback on controversial book reviews in a Letters-to-the-Editor section.

Reviews of films and other instructional media.

Lists of the latest books received.

Put *CP* in your brief case and read it on planes, trains, buses.

Keep in touch with the latest developments in your field of interest.

---

1961 Subscription, \$10.00

(Foreign, \$10.50)

*Send subscription orders to:*

**AMERICAN PSYCHOLOGICAL ASSOCIATION**  
**1333 Sixteenth Street, N.W.**  
**Washington 6, D.C.**

**WANTED: Periodicals:**

**Mathematics, Physics, etc.**

HIGH PRICES PAID

**Abrahams Magazine Service**

Dept. M 56 E. 13th St., N. Y. 3

*Proceedings of Symposia in  
Applied Mathematics, Volume X*

**COMBINATORIAL ANALYSIS**

*Edited by*

**RICHARD BELLMAN**

*and*

**MARSHALL HALL, JR.**

311 pages *25% discount* \$7.70  
*to members*

AMERICAN MATHEMATICAL SOCIETY  
190 HOPE STREET, PROVIDENCE, R.I.

**ILLINOIS  
JOURNAL  
OF  
MATHEMATICS**

A quarterly journal of basic research in pure and applied mathematics published by the University of Illinois, Urbana.

*edited by*

REINHOLD BAER • J. L. DOOB

A. H. TAUB • GEORGE W. WHITEHEAD

PAUL T. BATEMAN • OSCAR ZARISKI

The subscription price is \$9.00 a volume (four numbers); this is reduced to \$5.00 for individual members of the American Mathematical Society. Subscriptions should be sent to the University of Illinois Press, Urbana, Illinois.

**STATISTICIANS  
AND  
MATHEMATICIANS  
FOR  
RESEARCH**

**STATISTICIANS** to participate in planning long range rocket research and development programs, with the majority of time spent in statistics research. MS or PhD degree in statistics. Theoretical background in analysis of variance and tests of hypotheses desirable.

**MATHEMATICIANS** to work with analytical programs concerned with the study of heat transfer, fluid dynamics, and combustion dynamics problems. MS or PhD in applied math or mechanics.

Please write to Mr. J. C. Peck,  
Dept. 596 WG, Professional Employment Office, 6633 Canoga Avenue, Canoga Park, California.

*All Inquiries Will Be Held  
Confidential and Promptly  
Acknowledged*

**ROCKETDYNE** 

A DIVISION OF  
NORTH AMERICAN AVIATION, INC.

First with Power for Outer Space

# SOVIET MATHEMATICS



## DOKLADY

### A Translation of all the Pure Mathematics Sections of Doklady Akademii Nauk SSSR

The total number of pages of the Russian journal to be translated in 1960 will be about 1600. All branches of Pure Mathematics are covered in the *Doklady* in short articles which provide a comprehensive, up-to-date report of what is going on in Soviet mathematics.

Six Issues a year

Domestic Subscriptions .....	\$17.50
Foreign Subscriptions .....	20.00
Single Issues .....	5.00

Send Orders to

**American Mathematical Society**  
190 Hope Street  
Providence 6, Rhode Island



## The Optical Society of America

announces its translation of

### ОПТИКА И СПЕКТРОСКОПИЯ (OPTICS AND SPECTROSCOPY)

commencing with January 1959 issue (Vol. 6, No. 1)

*This leading scientific journal of the U.S.S.R. Academy of Sciences publishes the work of Russian scientists in all branches of optics and spectroscopy, including x-ray, ultra-violet, visible, infra-red and microwave, thin layer optics, filters, detectors, diffraction gratings, electroluminescence, thermal radiation backgrounds, infrared polarizers, and their many applications in science and industry.*

OPTICS AND SPECTROSCOPY is available free to all members of The Optical Society of America as part of their membership privileges. Membership dues OSA including both *Optics and Spectroscopy* and *The Journal of the Optical Society of America* \$13.00 per year. Write Dr. Mary E. Warga, Executive Secretary, Optical Society of America, 1155 Sixteenth Street, N.W., Washington, D.C. for membership application form.

OPTICS AND SPECTROSCOPY is available free to all non-member subscribers to *The Journal of the Optical Society of America*. Non-member subscription package deal of *Optics and Spectroscopy* and *The Journal of the Optical Society of America* \$28.00 per year. Send non-member subscriptions directly to the American Institute of Physics, 335 E. 45th Street, New York 17, N.Y.

THE OPTICAL SOCIETY OF AMERICA  
1155 Sixteenth Street, N.W., Washington 6, D.C.

## Neuerscheinung

### PARTIELLE DIFFERENTIALGLEICHUNGEN Eine Einführung

Von Dr. rer. nat. G. Hellwig, o. Professor an der Technischen Universität Berlin. (Mathematische Leitfäden. Herausgegeben von Professor Dr. G. Köthe, Heidelberg). 246 Seiten mit 35 Bildern. DIN 5. 1960. Ganzleinen DM 29,80. . . .

Aus dem Inhalt: *Beispiele*: Wellengleichung—Potentialgleichung—Wärmeleitungsgleichung/*Typeneinteilung, Charakteristikentheorie und Normalform*: Differentialgleichungen zweiter Ordnung—Systeme von Differentialgleichungen erster Ordnung/*Eindeutigkeitsfragen*: Elliptischer und elliptisch-parabolischer Typus—Parabolischer-, Hyperbolischer- und Gemischter Typus/*Existenzfragen*: Gleichungen vom hyperbolischen Typus in zwei unabhängigen Variablen—Rand- und Anfangswertprobleme—Gleichungen vom elliptischen Typus—Das Weylsche Lemma/*Existenzfragen bei Verwendung einfacher Hilfsmittel der Funktionalanalysis*: Schaudersche Beweistechnik für Existenzfragen bei elliptischen Differentialgleichungen—Reguläres Eigenwertproblem—Elliptische Differentialgleichungssysteme/*Übungsaufgaben mit Lösungen/Sachweiser*

Die grosse Entwicklung der Theorie im letzten Jahrzehnt wird hier im Rahmen einer Einführung in das Gesamtgebiet gebracht.

B. G. TEUBNER VERLAGSGESELLSCHAFT • STUTTGART

**NEW ADDITIONS TO VAN NOSTRAND'S  
UNIVERSITY SERIES IN HIGHER MATHEMATICS**

**Commutative  
Algebra**

Volume II

by OSCAR ZARISKI, *Harvard University*; and PIERRE SAMUEL, *University of Clermont-Ferrand*

Devoted to valuation theory, polynomial and power series rings, and local algebra, this volume completes the first systematic treatment of commutative algebra since Krull's monograph of 1935. The algebro-geometric sources and applications of the purely algebraic material are constantly emphasized.

400 pp., \$9.75

**Probability  
Theory**

2nd edition

by MICHEL LOÈVE, *University of California*

The second edition of this highly respected work features two entirely new chapters which carry the exposition into an investigation of random functions and Markov processes. Professor Loève has also made a large number of minor changes in the ten original chapters.

650 pp., about \$15.00

**D. VAN NOSTRAND COMPANY, INC.  
PRINCETON, NEW JERSEY**

**MATH LEARNING and TEACHING AIDS!**

• We are headquarters for Math Learning and Teaching Aids. Our catalog, with over 1/2 million circulation—contains an 8-page Math section to promote outside interest and activity in the subject. Watch our ads for new Math items. We will appreciate your recommending us to pupils for learning aids, books, etc.

**D-STIX CONSTRUCTION KITS**



You can increase interest in geometry and teach it better by using D-Stix. Solid geometry is fun for pupils when you show them actual visualizations of regular polyhedrons, geometric figures from triangles and cubes through such multiple sided figures as icosahedrons, dodecahedrons, etc.

Stock No. 70,209-DL (230 pcs) .....\$3.00 ppd.  
Stock No. 70,210-DL (370 pcs) .....\$5.00 ppd.  
Stock No. 70,211-DL (452 pcs) .....\$7.00 ppd.



**RADIAN PROTRACTOR**

Eliminates the need to learn long tables of equivalences or buy expensive books of tables for translating degrees to radian.

Stock No. 50,265-DL—Pkg. of 25 ... \$ 3.75 Postpaid  
Stock No. 50,266-DL—Pkg. of 100 ... \$12.50 Postpaid

Order by Stock No.—Send Check or M.O.—Money-back Guarantee

**TRIG AND CALCULUS CARDS**



Used to clinch the learning of trig identities or calculus formulas. Each deck contains 52 playing cards, plus instructions, and is used to play a game similar to Solitaire. Our decks include Differential Calculus, Integral Calculus, Applied Calculus, and Fundamental Identities from Trig.

Stock No. 40,310-DL  
Applied Calculus .....\$1.25 Postpaid  
Stock No. 40,311-DL  
Fundamental Identities ..... 1.25 Postpaid  
Stock No. 40,312-DL  
Integral Calculus ..... 1.25 Postpaid  
Stock No. 40,313-DL  
Differential Calculus ..... 1.25 Postpaid  
Stock No. 40,314-DL...Set of all four 4.00 Postpaid

Write for **FREE CATALOG—DL**

128 Pages! Over 1000 Bargains!

America's No. 1 source of supply for low-cost Math Teaching Aids, for experimenters, hobbyists. Complete line of Astronomical Telescope parts and assembled Telescopes. Also huge selection of lenses, prisms, war surplus optical instruments, parts and accessories. Telescopes, microscopes, binoculars. Request Catalog—"DL"



**EDMUND SCIENTIFIC CO., Barrington, New Jersey**

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, Department of Mathematics, Yale University, New Haven, Connecticut. Research Announcements offered for publication should be sent to some member of the Council of the Society, and communicated by him to E. E. MOISE, Department of Mathematics, Harvard University, Cambridge 38, Massachusetts. All other communications to the editors should be sent to the Managing Editor, E. E. MOISE.

The members of the Council for 1960 are: E. F. Beckenbach, E. G. Begle, Lipman Bers, R. H. Bing, R. P. Boas, Salomon Bochner, H. F. Bohnenblust, F. E. Browder, R. H. Bruck, R. C. Buck, M. M. Day, J. A. Dieudonné, J. L. Doob, Arthur Erdelyi, G. E. Forsythe, P. R. Garabedian, A. M. Gleason, J. W. Green, P. R. Halmos, Edwin Hewitt, G. P. Hochschild, G. B. Huff, Nathan Jacobson, Irving Kaplansky, L. H. Loomis, E. J. McShane, W. S. Massey, A. E. Meder, Jr., E. E. Moise, Deane Montgomery, R. S. Pierce, Everett Pitcher, G. de B. Robinson, Alex Rosenberg, P. C. Rosenbloom, Walter Rudin, Hans Samelson, I. J. Schoenberg, I. E. Segal, I. M. Singer, E. H. Spanier, A. W. Tucker, S. M. Ulam, J. V. Wehausen, J. W. T. Youngs, Oscar Zariski, Leo Zippin.

**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.

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

Papers in algebra and number theory should be sent to ALEX ROSENBERG, Lunt Building, Northwestern University, Evanston, Illinois; in probability, real variables, logic and foundations to P. R. HALMOS, Eckhart Hall, University of Chicago, Chicago 37, Illinois; in abstract analysis to either P. R. HALMOS or ALEX ROSENBERG; in geometry and topology to HANS SAMELSON, Department of Mathematics, University of Michigan, Ann Arbor, Michigan; in other branches of analysis, applied mathematics, and all other fields to R. P. BOAS, Lunt Building, Northwestern University, Evanston, Illinois. All other communications to the editors should be addressed to the Managing Editor, P. R. HALMOS.

**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 1960. The subscription price is \$8.00 per volume.

Papers in analysis, applied mathematics and probability should be sent to LIPMAN BERS, Institute of Mathematical Sciences, New York University, New York, 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 G. P. HOCHSCHILD, Department of Mathematics, University of California, Berkeley 4, California; in geometry and abstract analysis to I. M. SINGER, Institute of Mathematical Sciences, New York University, New York 3, New York. All other communications to the editors should be addressed to the Managing Editor, LIPMAN BERS.

Journals Published by the  
American Mathematical Society

---

---

Soviet Mathematics—Doklady

This journal contains the entire pure mathematics section of the DOKLADY AKADEMII NAUK SSSR in translation. It appears six times a year, each bimonthly issue corresponding to one volume of the Soviet DOKLADY. (The DOKLADY AKADEMII NAUK SSSR is issued three times a month, six issues constituting a volume.)

Rates per annual volume are as follows: Domestic subscriptions, \$17.50; foreign subscriptions, \$20.00. Single issues are \$5.00.

Mathematical Reviews

This journal contains abstracts and reviews of the current mathematical literature of the world. It is sponsored by thirteen mathematical organizations, located both in the United States and abroad.

MATHEMATICAL REVIEWS is published monthly, excepting July. The subscription price is \$50.00 per annual volume of eleven numbers.

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 7 numbers. A single copy is \$2.00.

All communications should be addressed to the Editor G. L. WALKER, 190 Hope Street, Providence 6, Rhode Island. 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.

Memoirs of the  
American Mathematical Society

This is a series of paperbound research tracts which are of the same general character as papers published in the TRANSACTIONS. An issue contains either a single monograph or a group of cognate papers. Published at irregular intervals. The latest numbers in this series are:

- |  |        |
|--|--------|
| 29. Edward Halpern, <i>Twisted polynomial hyperalgebras</i> . 61 pp. 1958  | \$1.50 |
| 30. L. Auslander and L. Markus, <i>Flat Lorentz 3-manifolds</i> . 60 pp. 1959  | 2.00   |
| 31. W. S. Loud, <i>Periodic solutions of <math>x'' + cx' + g(x) = ef(t)</math></i> . 58 pp. 1959                                 | 2.00   |
| 32. R. S. Pierce, <i>Translation lattices</i> . 66 pp. 1959  | 1.70   |
| 33. Ernst Snapper, <i>Cohomology theory and algebraic correspondences</i> . 96 pp. 1959.   | 1.90   |
| 34. E. M. Zaustinsky, <i>Spaces with non-symmetric distance</i> . 91 pp. 1959.   | 2.00   |
| 35. Richard Bellman and K. L. Cooke, <i>Asymptotic behavior of solutions of differential-difference equations</i> . 91 pp. 1959. | 2.00   |
| 36. Richard S. Palais, <i>The classification of G-spaces</i> . 72 pp. 1960.  | 1.65   |