

---

NEW from PITMAN

---

# ANCILLARY MATHEMATICS

Sir H. S. W. Massey, D.Sc., F.R.S. and H. Kestelman, M.Sc.

A self-contained textbook which covers all the relevant branches of pure and applied mathematics for students reading for a degree in scientific subjects. The text is copiously illustrated with many diagrams and worked examples and very full sets of exercises, with answers, appear at the end of each chapter. For this new edition; a section on "Linear Algebra and Matrices" has been added.

"An excellent book."—*The Times Educational Supplement*.

"Far too seldom has a book on mathematics for scientists combined rigour and simplicity as well as has been achieved in this volume."—*Mathematical Gazette*.

Second edition 65s net

---

available from all booksellers

**Pitman Parker St London WC2**

---

## recreational mathematics

### Calculator's Cunning

KARL MENNINGER

Likely to be the most successful of our 'readable mathematics' books. It shows arithmetical devices for solving problems more quickly and surprisingly than by ordinary methods *and* is a clever and exciting introduction to elementary number theory. *Translated from the 10th German edition.*

13s. 6d.

**Mathematics in Your World** by KARL MENNINGER. 21s.

**Mathematics in Action** by SIR GRAHAM SUTTON. 16s.

**Mathematics & the Imagination** KASNER & NEWMAN. 18s. 6d.

**Mathematical Puzzles & Diversions** by M. GARDNER. 17s. 6d.

**More Mathematical Puzzles & Diversions** M. GARDNER. 20s.



# Pergamon Press Books

## PRINCIPLES OF OPTICS

Electromagnetic Theory of Propagation, Interference and Diffraction of Light

Second Revised Edition

**M. BORN**, *F.R.S. Nobel Laureate*

**E. WOLF**, *Professor of Physics, University of Rochester, New York.*

**Chapter Headings:** Basic properties of the electromagnetic field; Electromagnetic potentials and polarization; Foundations of geometrical optics; Geometrical theory of optical imaging; Geometrical theory of aberrations; Image-forming instruments; Elements of the theory of interference and interferometers; Elements of the theory of diffraction; The diffraction theory of aberrations; Interference and diffraction with partially coherent light; Rigorous diffraction theory; Diffraction of light by ultrasonic waves; Optics of metals; Optics of crystals; Appendices; Author index; Subject index. 834 pages £6 (\$17.50)

## INTEGRAL EQUATIONS and their applications to certain problems in mechanics, mathematical physics and technology

Second Revised Edition

**S. G. MIKHLIN**

**Chapter Headings:** Equations of Fredholm type; Symmetric equations (theory of Hilbert-Schmidt); Singular integral equations; Dirichlet's problem and its application; The biharmonic equation (application of Green's function); The generalized method of Schwarz; Certain applications of integrals analogous to potentials; Application of the theory of symmetric integral equations; Certain applications of the theory of singular integral equations.

International Series of Monographs on Pure and Applied Mathematics, Volume 4

356 pages

80s (\$12.50)

## INTEGRATION OF EQUATIONS OF PARABOLIC TYPE BY THE METHOD OF NETS

**V. K. SAUL'YEV**

**Partial Contents:** Absolutely unstable net equations; Asymmetric net equations; Method of mean arithmetic, and multi-nodal symmetric method; Spherical and cylindrical regions; Equations of increased accuracy; Net equations with fictitious nodes; Non-uniform nets; Multi-step equations; Parabolic equations of higher than the second order; "One-dimensional" elliptic net equations; Methods using Chebyshev polynomials; Iterative methods of the second degree; Methods of block iteration.

International Series of Monographs on Pure and Applied Mathematics, Volume 54

358 pages

80s (\$12.00)

## A TEXTBOOK ON ANALYTICAL GEOMETRY

**J. S. MAMELAK**, *Applied Research, R.C.A., Camden, New Jersey*

**Chapter Headings:** Basic concepts; Fundamental formulas; Sets, algorithms, functions; The problems of analytic geometry; The straight line; The circle; The equations of the conics in standard form; Transformation of axes; Parametric equations; Limits, tangents, normals; The elements of curve tracing; The graphs of some algebraic equations; The graphs of some transcendental loci; Polar coordinates; Empirical equations. 252 pages

42s (approx \$6.00)



OFFERED FOR SALE BY

**ROBERT MAXWELL & CO LTD**



INTERNATIONAL UNIVERSITY AND INDUSTRIAL BOOKSELLERS, SUBSCRIPTION AGENTS, SPECIALISTS IN OUT-OF-PRINT AND DIFFICULT-TO-GET PUBLICATIONS

**WAYNFLETE BUILDING, 1-8 ST. CLEMENTS, OXFORD**

Pergamon Press books are distributed in the Western Hemisphere and the Philippines by The Macmillan Company, 60 Fifth Avenue, New York II, N.Y.

CAMBRIDGE BOOKS

## School Mathematics Project

### BOOK T

'All mathematics teachers who are interested in their work, will want to see this book' *Times Educational Supplement*

The School Mathematics Project has been set up to devise and test a new approach to the teaching of mathematics in secondary schools from 11 + to university entrance.

Book T, the first of the SMP text-books which breaks into the O level course at about 13 +, was published with its *Elementary Tables* in July. Its Teacher's Guide will be published next Spring. The sequel to Book T will be Book T4. Now schools adopting the SMP course will have two alternative sets of texts leading to O level. Those starting at 13 + can use Book T and Book T4: those starting at 11 + can use Books 1, 2, 3 and 4, when they are ready. Book 1 with its Teacher's Guide is expected in mid 1965 and Book 4 three years after that.

Further information about the SMP is available from the Press at its London address. Bentley House, 200 Euston Road, London, N.W.1.

Contents of *Book T*·

Number — Sets — Inequalities — Simple Transformations — The Slide Rule — Displaying Data — Shearing — Enlargement — Percentage and Proportion — Graphs and Relationships — Algebraic Formulation — Trigonometry — Coordinates — Binary Arithmetic — Geometry in Three Dimensions — Loci

*Book T*, 17s. 6d.

*Elementary Tables*, 1s. 6d.

## Publishing Programme for SMP Books

Early 1965	Teacher's Guide—Book T
Mid 1965	Book 1, Teacher's Guide—Book 1, Book T4
Mid 1966	Book 2, Book 5, Book 6, Teacher's Guide— Book T4
Mid 1967	Book 3, Book 7
Mid 1968	Book 4

## New Mathematics, I-IV

K. S. SNELL & J. B. MORGAN

A new, unified course in four parts, covering every aspect of 'O' level work. The different subjects are systematically developed and revised as the series proceeds, to show the essential unity of Mathematics. After each chapter comes a 'Puzzle Corner'.

*Parts I & II*, each 10s. 6d., *Part III*, 12s. 6d.;  
*Part IV*, 15s.

CAMBRIDGE UNIVERSITY PRESS

# Thinking with Mathematics

A new series of American paperback booklets designed to present topics in mathematics not covered in textbooks, or to give a deeper treatment of familiar topics. All are contemporary in approach, are informally written and may be used with students of approximately 'O' Level standard in both traditional and modern classes.

**Mathematics Projects  
Handbook**

**The Natural Numbers**

**The Integers**

**The Real Numbers**

**The Concept of a Function**

**Graphic Relations and  
Functions**

**An Introduction to Linear**

**Programming**

**An Introduction to**

**Transfinite Mathematics**

*paper covers, 7s. 6d. each*

## Translations from the Russian

Additional translations from the Russian which, although not appearing in the *Topics in Mathematics* series, have also been translated and adapted by the Survey of Recent East European Mathematical Literature at the University of Chicago. They are for mathematics specialists at the sixth-form stage and above.

*Now available*

**Multicolor Problems, c 12s. net**

**Problems in the Theory of**

**Numbers, c 17s. net**

**Random Walks, c 14s. 6d. net**

*Ready 1965*

**Convex Figures and**

**Polyhedra**

**Infinite Series**

**Eight Lectures in**

**Mathematical Analysis**

**Isoperimetry**

**Geometric Constructions  
in the Plane**

**Geometry of the**

**Straightedge and**

**Geometry of the**

**Compass**

**Probability and Information**

*paper covers*

**Harrap** 182 High Holborn, London, W.C.1.  
in association with D.C. Heath & Co.

CAMBRIDGE BOOKS

## **A First Course in Statistics**

R. LOVEDAY

A textbook which presents statistics up to O level in a very interesting and concise way. It is the first one to put fifth form teaching of the subject into a disciplined form. 8s. 6d.

## **A Second Course of Statistics**

R. LOVEDAY

The sequel is an A and S level textbook, which students at universities, training, technical and agricultural colleges can use as an introduction. Students working for the Diploma in Mathematics will find both these books useful. 10s.

## **Elementary Statistical Diagrams**

R. LOVEDAY

A collection of introductory statistical exercises for middle forms of secondary schools, showing how to construct and interpret the kind of diagrams which appear in newspapers or on television. With answers. 2s. 6d.

## **Algebraic Solid Geometry**

S. L. GREEN

Exercises for sixth forms and university students, with answers, on problems of algebraic solid geometry. Some knowledge of elementary algebra (including determinants) is assumed. 15s. net

CAMBRIDGE UNIVERSITY PRESS

*The last two Books of*  
**OXFORD JUNIOR  
MATHEMATICS**

E. M. WILLIAMS *and* E. J. JAMES

*Pupils' Book 4 (6s) and Teacher's Book 4 (6s)  
have recently been published*

Number system extended to millions, roman figures, powers of 10, long division, averages, four processes in simple fractions, easy decimals.

Balance bar, rotation, angles, triangle and rigidity, parallel lines and parallelogram.

To prepare for decimal coinage, foreign currencies and simple metric measures are included: area, scale drawing, measuring heights.

Graphs are widely used, including straight line graph, curve of squares, and pi graph.

*Pupils' Book 5 and Teacher's Book 5  
are due to be ready about next May*

Large-number calculations; further work in fractions and decimals, long division, ratio; binary and other number scales, sequences, inverses.

Three-dimensional models; patterns based on reflection, translation, rotation, and stretch; enlargement and reduction of shapes, area, stitching patterns; ellipse, parabola, and hyperbola found practically; golden rectangle, pentagon.

Experimental work on spring, gears, pendulum.

Graphs used for experimental data, ratios, &c.

Simple logical exercises. Use of letters in formulae and puzzles.

'There is no doubt that the authors have given considerable thought to the way in which children learn mathematics, and have used their wide experience and knowledge to produce a course of work in which the accent is upon the formation of sound basic concepts, and a thorough understanding of the work involved, rather than on the manipulation of numbers to provide the right answer.'

TEACHING MATHEMATICS

'One thing is certain, that all junior teachers should see a copy of this series. They can learn much from it and may, indeed, find it what they are looking for.' SCHOOL BOOK REVIEW

*Applications for inspection copies should be sent to the*

**OXFORD UNIVERSITY PRESS**

*Education Department, Oxford*

---

**NEW from PITMAN**

---

# **ALGEBRA**

*J. W. Archbold, M.A.*

A self-contained textbook covering all the relevant branches of algebra for students reading for a degree in mathematics. For this new edition, new chapters on the elementary structure of groups, rings and fields have been added to a lucid and neatly laid-out text. Many examples and exercises are included.

"Caters carefully for the examinee without restricting his horizons."—*Mathematical Gazette*.

"This excellent publication is highly recommended."—*Technical Education*.

3rd edition 45s net

---

*available from all booksellers*

**Pitman Parker St. London WC2**

---



G. BELL & SONS, LTD., PORTUGAL STREET, LONDON W.C.2

Recent Books

## ELEMENTARY ANALYSIS

by A. DAKIN, M.A., B.Sc. and R. I. PORTER, M.B.E., M.A.

*Revised and Enlarged Edition. 13s. 6d.*

A revised and entirely reset edition of this widely used book is now available. It has been enlarged by the inclusion of a new chapter on the Theory of Logarithms and Additional Algebraic Methods.

FURTHER ELEMENTARY ANALYSIS by R. I. Porter completes a two year course for non specialists in the 6th Form. *Tenth Printing. 21s.*

## FURTHER MATHEMATICS

by R. I. PORTER, M.B.E., M.A. 424 pages. 25s.

For mathematical specialists. It gives adequate preparation for scholarship papers in the G.C.E. examination. "I am most impressed with this book. It covers a wide field, is well set out and the explanatory matter is very lucid."

A SENIOR MATHEMATICS MASTER

## INTRODUCTION TO ADVANCED MECHANICS

by D. A. QUADLING, M.A. and A. R. D. RAMSAY, M.A. 21s.

"An altogether exceptional book . . . although the book will appeal most strongly to students of applied mathematics it will nevertheless form an excellent background for the engineer . . . Some of the questions on space travel are splendid."

TIMES EDUCATIONAL SUPPLEMENT

## A NEW TRIGONOMETRY FOR SCHOOLS

by C. V. DURELL, M.A. 13s. 6d. Also Part I, 9s.; Part II, 7s. 6d.

Part I covers 'O' level work; Part II covers 'A' level work. "Can be recommended to any grammar school with confidence, as being comparable with the best of its kind . . . Mr. Durell still is (through his books) and always has been a superb teacher." TIMES EDUCATIONAL SUPPLEMENT

PRINTED IN GREAT BRITAIN BY ROBERT MACLEHOSE AND CO. LTD  
THE UNIVERSITY PRESS, GLASGOW