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BIBLIOGRAPHIES, HIGH SCHOOL MATHEMATICS.

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THIS ANNOTATED BIBLIOGRAPHY IS A COMPILATION OF A NUMBER OF HIGHLY REGARDED BOOK LISTS CONSISTING OF LIBRARY BOOKS AND TEXTBOOKS FOR GRADES 7-12. THE BOOKS IN THIS LIST ARE CURRENTLY IN PRINT AND THE CONTENT IS REPRESENTATIVE OF THE FOLLOWING AREAS OF MATHEMATICS--MATHEMATICAL RECREATION, COMPUTERS, ARITHMETIC, ALGEBRA, EUCLIDEAN GEOMETRY, NON-EUCLIDEAN GEOMETRY, TOPOLOGY, TRIGONOMETRY, ANALYTIC GEOMETRY, CALCULUS, LOGIC, AND HISTORY OF MATHEMATICS. THE FOLLOWING INFORMATION IS GIVEN FOR EACH BOOK IN THE BIBLIOGRAPHY--AUTHOR, TITLE, DATE OF PUBLICATION, NUMBER OF PAGES, PUBLISHING COMPANY, PRICE, AND GRADE LEVEL. (RP)

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SEPTEMBER 1966

STATE OF ILLINOIS
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A BIBLIOGRAPHY OF LIBRARY BOOKS
FOR GRADES 7-12

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- (1) The prices indicated are approximate, and actual prices will depend on volume and source of supply.
- (2) This list does not constitute an endorsement. It is a compilation of a number of highly regarded book lists, and no judgement was used to include a book other than that it appeared on several recommended book lists.
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- (4) Some titles which are listed as hard covers may be available in paper back as well.
- (5) When selecting mathematics books for a library, one important criterion is to maintain a balance in the various areas of mathematics. That is, a library should contain books in as many areas of mathematics as possible such as: Mathematical Recreation, Computers, Arithmetic, Algebra, Euclidean Geometry, Non-Euclidean Geometry, Topology, Trigonometry, Analytic Geometry, Calculus, Logic, History of Mathematics, etc.
- (6) The recommended grade level will vary with the type of school and the type of student, and cannot be considered as accurate. Some books, for example, may be listed as appropriate for grades (9-10), when actually it would be appropriate for a bright 6th grade student and not appropriate for a slow 12th grade student.
- (7) The information in the list is given in this order:
Author; Title ; Date, Number of Pages, Publisher; Price.
..... Annotation. (Grade Level)

- Asboe, Asger; EPISODES FROM THE EARLY HISTORY OF MATHEMATICS; 1964; Random
Fascinating, historical account of the beginnings of some important mathematical concepts. (10-12)
- Abbott, E. A.; FLATLAND; Dover; (1. 00)
Imaginative account of one and two dimensional worlds. (7-10)
- Adams, Lovincy J.; APPLIED CALCULUS; 1963; Wiley; 278 pp.; (5. 95)
A text presenting a large number of concepts and emphasizing their practical applications to mechanical, civil, electrical and electronic engineering. (11-12)
- Adler, C. F.; MODERN GEOMETRY; 1958; McGraw-Hill; 215 pp.; (6. 95)
An introduction to several geometries. It gives a good survey of the field. (11-12)
- Adler, Irving; THE GIANT GOLDEN BOOK OF MATHEMATICS; 1960; Golden; (4. 99)
Beginning with simplest use of number, the reader is introduced to the history of standards and measures, arithmetic, geometry, trigonometry, algebra, and calculus. Explains the meaning of each branch of mathematics. (7-9)
- Adler, Irving; LOGIC FOR BEGINNERS; 1964; Day; (3. 95)
Both entertaining and instructive and the material is, needless to say, logically presented. Fun with a serious purpose. (7-9)
- Adler, Irving; THE NEW MATHEMATICS; 1958; Day; (4. 50); Mentor; (. 50)
With elementary algebra and plane geometry as tools, Adler skillfully builds up many interesting concepts of modern mathematics. (11-12)
- Adler, Irving; NUMBER OLD AND NEW; 1960; Day; (2. 39)
Enrichment material which can be used in units of study on ancient civilizations as well as on mathematics to supplement the basic school program. Games and tricks in mathematics are developed in the final chapters; a chapter on superstitions is of particular interest. (7-9)
- Adler, Irving; PROBABILITY AND STATISTICS; 1963; Day; (5. 95)
A useful guide to the fundamentals of probability and statistics showing how we can draw certain conclusions about uncertain events. The concepts of sample space, probability, random variable, expectations, standard deviation, and correlations are clearly explained. The Bernoulli distribution and the Poisson distribution get special attention. (11-12)
- Allendoerfer, C.B, and Oakley, C. O.; PRINCIPLES OF MATHEMATICS; 1963; McGraw-Hill; (7. 95)
An introductory college text which assumes an algebra background. It begins with work on logic and the number system, treats groups and Boolean algebra, and contains an introduction to analytic geometry, calculus, and probability. (11-12)

Allendoerfer and Oakley; FUNDAMENTALS OF FRESHMAN MATHEMATICS; 1959; McGraw-Hill; (7.50)

A College freshman text which introduces calculus in a framework of college algebra and analytic geometry. This is another text which is currently being used by high schools for their senior level course with success. (11-12)

Altshiller-Court; COLLEGE GEOMETRY; 1952; Barnes and Noble; (4.50)

Probably the best known of all advance plane geometry texts. If your students like plane geometry, they will certainly wish to use this as a reference. Requires no background beyond the usual high school courses. (11-12)

Anderson, R. W.; ROMPING THROUGH MATHEMATICS; 1947; Knopf; (3.00)

An elementary book which is better than its cute title promises. Presents mathematics from basic numbers to differential calculus. (9-12)

Andree; SELECTIONS FROM MODERN ABSTRACT ALGEBRA; 1958; Holt; (6.50)

A college level book which contains congruences (modern algebra), Boolean algebra (set theory), groups, fields, matrices, etc. Has been successfully as a text for advanced high school students, as well as in summer institutes for teachers. (11-12)

Apostol, Tom M.; CALCULUS; Vol. 1: INTRODUCTION, WITH VECTORS AND ANALYTIC GEOMETRY. Vol. 2: CALCULUS OF SEVERAL VARIABLES WITH APPLICATIONS TO PROBABILITY AND VECTOR ANALYSIS; 1961, 1962; Blaisdell; 515 pp., (9.50 per vol.)

A comprehensive work designed as a text for a two-year college course, but valuable for reference and background since its organization follows the historical and philosophical development of the subject. (11-12)

Asimov, Isaac; QUICK AND EASY MATH; 1964; Houghton; (3.00)

This guide to rapid calculations is based on a group of basic mathematical principles and forms a valuable supplement to a formal course in mathematics. (7-9)

Asimov, Isaac; REALM OF ALGEBRA; 1961; Houghton; (3.44)

In a style that is easy and informal, the author proceeds from the most basic concepts of algebra to the more refined considerations of quadratic and cubic equations, simultaneous equations, and those involving imaginary and transcendental numbers. More a book of theory than of drill. (7-12)

Asimov, Isaac; REALM OF NUMBERS; 1959; Houghton, 200pp., (2.75)

Requiring only an arithmetic background, the discussion begins with finger counting and progresses through square root, logarithms, rational and irrational numbers and includes infinity. (7-9)

- Bailey, C. A. R.; SETS AND LOGIC; Books 1 and 2; Houghton; (1.00 each)
 Book 1 shows how set language helps to unify and clarify a wide variety of mathematical ideas, particularly those related to function. It also shows that mathematics is concerned with much more than the traditional topics of number and space. In the final chapter Boolean algebra is used to solve simple problems in logic and circuitry.
 Book 2 includes: sets, relations, functions, operations, one-to-one correspondences, Venn diagrams, one and two dimensional graphs of equations and inequalities, Boolean algebra, algebra of sets, and logic switching algebra and circuits, sample spaces and probability, relations and rational numbers, and the logic of propositions. (9-12)
- Bakst, A.; MATHEMATICAL PUZZLES AND PASTIMES; 1954; Van Nostrand; 206 pp.; (4.00)
 A set of mathematical recreations, arranged so as to exhibit underlying mathematical principles. Contains examples from pure number theory, algebra, geometry and trigonometry. (7-9)
- Bakst, A.; MATHEMATICS, ITS MAGIC AND MASTERY; 1952; Van Nostrand; 790 pp.; (7.50)
 A great deal of material about elementary mathematics which is a clear exposition with amusing illustrations and problems. (9-12)
- Ball, W. W. R.; STRING FIGURES AND OTHER MONOGRAPHS; Chelsea; 528 pp.; (3.95)
 The book also contains the following useful monographs:
 J. Petersen, "Methods and Theories for the Solution of Problems of Geometrical Constructions"
 H. S. Carslaw, "Non-Euclidean Plane Geometry and Trigonometry"
 F. Cajori, "A History of the Logarithmic Slide Rule"
- Ball and Coxeter; MATHEMATICAL RECREATION AND ESSAYS; 1939; Macmillan; 418 pp.; (6.00) (paper \$1.95)
 A classic book on recreational mathematics. (7-12)
- Barnard, S., and Child, J. M.; HIGHER ALGEBRA; St. Martin's; (6.00)
 A British text which is very comprehensive. (11-12)
- Barnett, Raymond; and John Fujii; VECTORS; 1963; Wiley; 132 pp.; (2.95)
 A supplementary book useful to advanced high school mathematics students as well as to students of physics and engineering courses, for which basic geometry and trigonometry are prerequisites. (11-12)
- Barr, Stephen; EXPERIMENTS IN TOPOLOGY; 1964; Crowell; 210 pp., (3.50)
 Topology is concerned initially with continuity of such things as space and shape, but eventually leads to other kinds of continuity beyond space. Anyone who has a background of algebra and geometry will be intrigued by this book. (7-12)

Begle; **INTRODUCTORY CALCULUS WITH ANALYTIC GEOMETRY**; 1954;
637 pp.; (9.50)

A considerable knowlege of mathematics is required to appreciate this study of the growth of the various mathematical fields. (11-12)

Bell, E. T.; **MEN OF MATHEMATICS**; 1937; Simon and Schuster; 592 pp.;
(6.50)

Through biographies of some thirty great mathematicians, the dominant ideas of modern mathematics are introduced. A classic, written in a witty and provocative style. (9-12)

Bendick, Jeanne and Marcia Livin; **MATHEMATICS ILLUSTRATED DICTIO-
NARY**; 1965; Whittlsey; (4.50)

A unique guide to important mathematical facts and people. Information on the Greek, Roman and Arabic number systems are part of this formal illustrated dictionary. (7-12)

Bergamini, David and The Editors of Life; **MATHEMATICS**; 1963; Time;
200 pp.; (3.93)

An account of some of the highlights of the history and development of mathematics, including considerations of the uses of mathematics in the arts, professions, etc. (7-12)

Birkhoff, G. D. and Beatley, R.; **BASIC GEOMETRY**; 1959; Chelsea; 291 pp.;
(3.95)

An attempt to make a careful axiomatic approach of Euclidean geomtety understandable to high school students. (11-12)

Bixby, William; **THE UNIVERSE OF GALILEO AND NEWTON**; 1964; Harper;
(3.95)

The stories of the great astronomer and the great mathematician who laid the foundations upon which modern science could stand. (7-9)

Black, M.; **THE NATURE OF MATHEMATICS**; 1950; Munamities Press;
(5.00)

Attempts to explain the differences among the logistic, the formalistic, and the intuitionistic schools. (9-12)

Boehm, G. A. W.; **NEW WORLD OF MATHEMATICS**; 1959; Dial Press; 120 pp.;
(2.50)

Outlines and explains what has happened recently in Mathematics, the fastest growing science today. (9-12)

Bonola, R., et al.; **NON-EUCLIDEAN GEOMETRY**; 1954; Dover; (2.00 paper)

Besides the title piece the book also contains two items of historical interest; Bolyai, "The Science of Absolute Space", and Lobachevski, "Geometrical Researches on the Theory of Parallels". (11-12)

- Boyer, C. B.; A HISTORY OF THE CALCULUS, AND ITS CONCEPTUAL DEVELOPMENT; Dover; 1959; (2.00 paper)
An account of the development of the calculus from conceptions in antiquity to the rigorous formulations of the nineteenth century, with emphasis on the struggle to obtain a clear notion of limit. (11-12)
- Boyer, L. E.; AN INTRODUCTION TO MATHEMATICS; 1955; Holt; (7.95)
A historical development designed for elementary and secondary school teachers, this book contains a wealth of material on arithmetic, algebra geometry and trigonometry. (11-12)
- Breuer, Joseph; INTRODUCTION TO THE THEORY OF SETS; 1958; Prentice Hall; 108 pp.; (6.00)
This concise elementary book deals first with finite and infinite sets and cardinal numbers, then with sets of points, and finally with the idea of function. (11-12)
- Brixey and Andree; FUNDAMENTALS OF COLLEGE MATHEMATICS; 1961; Holt; 750 pp.; (8.95)
Presents an integration of college algebra, trigonometry, basic statistical reasoning, analytic geometry and elementary calculus suitable for the advanced secondary school student. (11-12)
- Cajori, F.; HISTORY OF MATHEMATICAL NOTATIONS; Open Court; (7.00 each of two volumes)
Deals with the evolution of the numerals, the equals sign, exponents, etc. Vol. 1 - Symbols from elementary mathematics; Vol.2 - Symbols from advanced mathematics. (9-12)
- Cantor, G.; CONTRIBUTIONS TO THE FOUNDING OF THE THEORY OF TRANSFINITE NUMBERS; Dover; (1.35 paper)
This classic is a short account, by the inventor of the theory. (11-12)
- Carroll; PILLOW PROBLEMS AND A TANGLED TALE; 1958; Dover; (1.50)
"Pillow Problems" (1893) contains 72 mathematical puzzles, all typically ingenious. The problems in "A Tangles Tale" (1895)
- Chrystal, G.; ALGEBRA; Chelsea; 584 pp.; (3, 95) (Paper 2.35) (Each of two volumes)
Classic British nineteenth-century text, recently republished in two volumes. (11-12)
- Clason, Clyde B.; DELIGHTS OF THE SLIDE RULE; 1964; Crowell; (5.00)
A worthwhile discussion of the "mighty slipstick" with many examples and experiments and with a bibliography for further reading. (7-9)
- Clifford, W. K.; COMMON SENSE OF THE EXACT SCIENCES; 1964; Dover; (Paper 1.60)

Essays on number, space, quantity, position and motion written by a gifted nineteenth-century servant. (9-12)

Colerus, Egmont; MATHEMATICS FOR EVERYMAN; 1957; Emerson; 255 pp.; (3.95)

Starting at the very beginning, assuming no mathematical sophistication, this book cuts through the tangle of mystery that surrounds the teaching of mathematics, and the reader comes to understand the fundamental mathematics operations. (9-12)

CONTEMPORARY SCHOOL MATHEMATICS SERIES; Houghton Mifflin Co., (1.00 each)

These paperbacks were written by members of the department of mathematics of St. Dunstan's College, an elementary and secondary school in London, England. Valuable both for the insights they develop and for the interest they create. Each book is written in a style that is precise but invitingly informal. The First Series is suitable for ninth grade and better-than-average eighth-grade classes. The first three books of the Second Series are intended for students familiar with the corresponding earlier ones.

First Series

SETS AND LOGIC I
MATRICES I
COMPUTERS I
SHAPE, SIZE, AND PLACE

Second Series

SETS AND LOGIC 2
MATRICES 2
COMPUTERS 2
AN INTRODUCTION TO PROBABILITY AND STATISTICS

Courant and Robbins; WHAT IS MATHEMATICS; 1941; Oxford; 521 pp.; (6.50)

Not an easy book, but well worth the effort. Contains excellent work on basic mathematical analysis. Portions can be read and enjoyed by all, but some parts require mathematical maturity. (11-12)

Court; MATHEMATICS IN FUN AND EARNEST; 1958; Dial Press; (4.75)

An entertaining book which illustrates Dr. Court's thesis that mathematics in earnest should be fun; mathematics in fun may be in earnest. Requires little background, but will test your reasoning power. (7-12)

Culbertson, J. T.; MATHEMATICS AND LOGIC FOR DIGITAL DEVICES; 1958; Van Nostrand; 224 pp.; (5.25)

Intended for a college course, but assumes only algebra. Interesting and significant mathematics. (11-12)

- Cundy and Rollett; MATHEMATICAL MODELS; 1952; Oxford; (5.50)
A fine discussion of the construction of various mathematical models. You will always have students who prefer to do something rather than to study or think. This book will encourage them to do both. (7-12)
- Dantzig; NUMBER: THE LANGUAGE OF SCIENCE; 1954; Macmillan; 350 pp.; (6.50)
This is a historical treatment of the concept of number and its importance in modern life which is intended for the general reader. (11-12)
- Davenport, H.; HIGHER ARITHMETIC; 1960; Harper Torchbooks; (Paper 1.35)
This is a short book on the field which Gauss called the "queen of mathematics", written by a leading number theorist. (9-12)
- Dedekind, R.; ESSAYS ON THE THEORY OF NUMBERS; Open Court; (2.00)
This classic is a brief presentation of the relation of the reals to the rationals, by one of the great contributors to the field. (11-12)
- Degrazia, J.; MATH IS FUN; Emerson; (2.95)
A better puzzle book. (9-12)
- DeMorgan, A.; BUDGET OF PARADOXES; Dover; (5.00)
A collection of essays on unscientific and anti-scientific crackpots.
- Descartes, R.; THE GEOMETRY; Dover; (Paper 1.60)
The original classical exposition of Analytic Geometry. (10-12)
- Diamond, Solomon; THE WORLD OF PROBABILITY; STATISTICS IN SCIENCE; 1964; Basic; (4.95)
The ever more important world of statistics is discussed in terms of its meaning for science and our way of life. (9-12)
- Diggins, Julia; STRING, STRAIGHTEDGE, AND SHADOW; THE STORY OF GEOMETRY; 1965; Biking; (5.00)
A chronicle of how man first noticed the beauty of geometric forms, in nature, then put them to practical use, and finally reasoned about them in abstract patterns. (7-9)
- Dubisch; THE NATURE OF NUMBER; AN APPROACH TO BASIC IDEAS OF MODERN MATHEMATICS; 1952; Ronald Press; (4.00)
A direct and understandable way to gain an overview of what mathematics is about, an insight into the nature of its theory. (11-12)
- Dudeney; AMUSEMENTS IN MATHEMATICS; 1959; Dover; (1.25)
A selection of over 400 mathematical puzzles which everyone will enjoy. (7-12)

Eves; AN INTRODUCTION TO THE HISTORY OF MATHEMATICS; Rev. Ed.; 1964; Holt, Rinehart, and Winston; 455 pp.; (7.00)

This new edition of a popular book is recommended to the person of moderate mathematical background who wishes an up-to-date book on the history of mathematics for reference or self study. (9-12)

Eves and Newsom; AN INTRODUCTION TO THE FOUNDATIONS AND FUNDAMENTAL CONCEPTS OF MATHEMATICS; 1958; Rinehart; (5.74)

A sound book with numerous excellent exercises which a good high school student will enjoy reading. (9-12)

Fadiman, Clifton; FANTASIA MATHEMATICS; 1958; Simon; 298 pp.; (4.95)

One of the best collections for the unskilled mathematician. Selections cover many topics of interest and include nonsense rhymes and short stories. (7-9)

Fraenkel, A.; INTEGERS AND THE THEORY OF NUMBERS; 1955; Scripta Mathematica; (2.75)

A brief account, clearly and simply written which would be an excellent supplement to a standard textbook. (11-12)

Freeman, Mae B. and Ira; FUN WITH FIGURES; 1946; Random; 60 pp.; (1.95)

The author shows in this book how to have fun with geometric figures in a "do-it-yourself" way.

Freund, John E.; MODERN ELEMENTARY STATISTICS (2nd Ed.); 1960; Prentice-Hall; 413 pp.; (8.25)

The purpose of this text is to acquaint beginning students in the natural and social sciences with the fundamentals of modern statistics. Exercises are distributed among various fields of application. (9-12)

Friend, J. Newton; NUMBERS; FUN AND FACTS; 1954; Scribner; 208 pp.; (2.95)

A collection of mathematical curiosities, puzzles and problems requiring a background of elementary algebra for manipulation, but requiring real ingenuity for solution. (9-12)

Fujil, John M.; AN INTRODUCTION TO THE ELEMENTS OF MATHEMATICS; 1961; Wiley; 312 pp.; (6.25)

A modern approach to the "new" mathematics is presented which stresses ideas and concepts rather than computation. Symbolic logic and argument, set theory, the function concept, and probability are among some of the topics discussed. (9-12)

Galilei, G.; **DIALOGUES CONCERNING TWO NEW SCIENCES**; Dover;
(Paper 1.75)

This surprisingly modern classic contains interesting materials on mechanics, projectile motion, and the infinite. (10-12)

Gamow and Stern; **PUZZLE-MATH**; 1958; Viking; (2.00)

Interesting brain-twisters and puzzles based on practical situations that can be untangled by mathematical thinking. (7-12)

Gamow; **ONE, TWO, THREE... INFINITY**; 1947; Mentor Books; (.50)

Problems of mathematics, physics, and astronomy are clarified for the layman. Also available in hardback edition from Viking Press (4.00). (7-12)

Gardner, M.; **THE SCIENTIFIC AMERICAN BOOK OF MATHEMATICAL PUZZLES AND DIVERSIONS**; Book 1, 1959; 178 pp.; (3.50); Book 2, 1961; 253 pp.; (3.95); Simon and Schuster.

A collection of puzzles and brain-teasers which provides the mathematically inclined student not only with hours of enjoyment, but also with an introduction to modern mathematical thought. (9-12)

Gardner, M.; **LOGIC MACHINES AND DIAGRAMS**; 1958; 259 pp.; McGraw-Hill; (5.00)

Apparent is the flair for vivid and precise explanation which has made his monthly contribution on Mathematical Games to the Scientific American so noteworthy. (9-12)

Gardner, M.; **MATHEMATICAL PUZZLES OF SAM LOYD**; 1959; Dover; (1.00)

A delightful collection of puzzles by one of the greatest puzzle makers of all times. (7-12)

Gardner, M.; **MATHEMATICS, MAGIC AND MYSTERY**; 1956; Dover; (1.00)

Another interesting, inexpensive paperback by the mathematical editor of SCIENTIFIC AMERICAN: (7-12)

Glenn and Johnson; **INVITATION TO MATHEMATICS**; 1962; Doubleday; 373 pp.; (4.95)

Combines an explanation of new mathematical concepts and how they are developed with an examination of some classical branches of mathematics and their practical applications. (7-9)

Glenn and Johnson; **EXPLORING MATHEMATICS ON YOUR OWN**; 1960; Doubleday; 303 pp.; (4.50)

A book of recreational mathematics that includes recent developments as well as a consideration of classical mathematical concepts. (7-9)

Golomb, Solomon; **POLYMINOES**; 1965; Scribner; (5.95)

A popular new mathematical recreation, polyominoes are also a way

to learn more about mathematics. Includes mathematical proofs for many problems and discusses theorems about counting. (10-12)

Griffin, F. L.; AN INTRODUCTION TO MATHEMATICAL ANALYSIS; 1936; (revised); Houghton; (5.75)

This college freshman textbook widely used for many years unifies the ideas of the calculus introduced early, and topics of algebra, trigonometry, analytic geometry as they are needed. (11-12)

Hamilton; COLLECTION OF PAPERS IN MEMORY OF; Scripta Mathematica; (1.50)

A biographical sketch of the great Irish mathematician, together with papers related to the quaternions and other topics which he helped to develop. (11-12)

Hardy, G. H.; PURE MATHEMATICS, Tenth Edition; Cambridge; (6.50)

This famous book is noted for its lucidity and elegance. (11-12)

Harris, Charles; SLIDE RULE SIMPLIFIED; 1961; Am. Tech. Soc.; (4.25)

The author's aim is to dispel the idea that operation of the slide rule is difficult to master by recognizing the usual difficulties and showing the beginner how to overcome them. (7-9)

Heath, T. L. (ed); THE THIRTEEN BOOKS OF EUCLID'S ELEMENTS;

Three volumes; Dover; (2.25 each)

Includes a lengthy historical introduction and contains critical comments throughout the text. (11-12)

Heath, T. L. (ed); THE WORKS OF ARCHIMEDES; Dover; (2.25)

Archimedes' ingenious and rigorous treatment of problems of integration make this classic of pedagogical as well as historical interest to high school students and teachers. (10-12)

Hilbert, D.; FOUNDATIONS OF GEOMETRY; Open Court; (2.50)

The classical axiomatization of geometry in which Hilbert filled the gaps left by Euclid. (11-12)

Hilbert, Cohn-Vossen; GEOMETRY AND THE IMAGINATION; 1952; Chelsea; 385 pp.; (6.00)

Contains beautiful discussions of some aspects of two and three dimensional geometry, designed to appeal to the imagination and the intuition. (11-12)

Hoel, Paul G.; ELEMENTARY STATISTICS; 1960; Wiley; 261 pp.; (5.50)

A text book of elementary statistical methods which emphasizes sampling methodology and theory, and includes additional topics as correlation, regression, analysis of variance, and an introduction to time series and index number analysis. (11-12)

- Hogben, L.; **THE WONDERFUL WORLD OF MATHEMATICS**; 1955; Garden City; (3. 95) .
Mathematics concepts come to life and are easier to grasp when accompanied by graphs and pictures in full color. Contents: Time and tally; Taxes and triangles; Square and circle; Stars and steering; Proof and progress; Numbers and nothing; Graphs and gravity; Power and precision. (7-9)
- Hogben, L. ; **MATHEMATICS IN THE MAKING**; 1960; Doubleday; (8. 46)
This book reviews the history of mathematics with the express purpose of familiarizing the intelligent reader with the mathematical techniques which modern science employs. Copiously illustrated with the diagrams and pictures which bring mathematical problems and practices into sharp focus. (9-12)
- Hogben, L.; **MATHEMATICS FOR THE MILLION**; 1951; Norton; 697 pp. ; (6. 95)
A lively account of the development of mathematics. It is more difficult than the title implies. (9-12)
- Hooper, Alfred; **MAKERS OF MATHEMATICS**; Random House;
A well organized survey of mathematical history, from earliest times through the calculus. (10-12)
- Hunter; **FIGURETS; MORE FUN WITH FIGURES**; 1958; Oxford; (2. 70)
More fascinating mathematical puzzles, these problems for the adult layman are cast in the form of entertaining anecdotes. (7-12)
- Huntington, E. V.; **THE CONTINUUM AND OTHER TYPES OF SERIAL ORDER**; Dover; (Paper 1. 00)
A classical short introduction to infinite classes and transfinite numbers.
- Infeld, L.; **ALBERT EINSTEIN**; Scribner's; (3. 00)
A scientific and personal biography of Einstein by a friend.
- Jacoby, O.; **HOW TO FIGURE THE ODDS**; Doubleday (3. 50)
Discusses probability involved in cards and other games of chance. (7-12)
- Jacoby and Benson; **MATHEMATICS FOR PLEASURE**; McGraw; 191 pp. ; (4. 94)
Theories, games puzzles and oddities of all kinds bring to the reader the challenge of the inner logic of mathematics. Every problem has been screened for its ability to stimulate the imagination. (10-12)
- James, Glen (ed); **THE TREE OF MATHEMATICS**; Digest Press; (6. 00)
Contains chapters written by 20 distinguished contemporary mathematicians covering various fields. The reader can gain some feeling for

"what it's all about" even with a meager background. (7-12)

James and James; MATHEMATICS DICTIONARY; 1958; Van Nostrand; 482 pp.; (15.00)

Clear definitions of terms from elementary to advanced mathematics including applications. Logarithmic, trigonometric, integral, as well as annuity tables are appended. (7-12)

Johnson; PAPER FOLDING FOR THE MATHEMATICS CLASS; 1975; NCTM; (.75)

Illustrated directions for folding the basic constructions, geometric concepts, circle, relationships, products and factors, polygons, knots, polyhedrons, symmetry, conic sections recreations. A fine project for geometry students. (7-12)

Huff; HOW TO TAKE A CHANCE; 1959; Norton; (2.20)

Entertaining but soundly exact discussions of various aspects of chance, probability, and error, especially as applied to everyday life. (7-12)

Huff; HOW TO LIE WITH STATISTICS; 1955; Norton; (1.95)

Humorous, but penetrating and authoritative explanation of the basic conceptions and misconceptions of statistics. Vivid illustrations in cartoon style fully capture and even extend the content. (7-12)

Johnson, Glen and Norton; EXPLORING MATHEMATICS ON YOUR OWN; McGraw; (.92 each)

Mathematics enrichment booklets dealing with many forms of modern mathematics and new applications of traditional mathematics. For self-study or for classroom use. (7-9)

Sets, Sentences, and Operations; 63 pp.; 1960

The Pythagorean Theorem; 49 pp.; 1960

Topology - The Rubber-Sheet Geometry; 40 pp.; 1960

Understanding Numeration Systems; 56 pp.; 1960

Fun with Mathematics; 43 pp.; 1960

Number Patterns; 46 pp.; 1960

Invitation to Mathematics; 64 pp.; 1960

World of Statistics; 64 pp.; 1960

Short-Cuts In Computing; 46 pp.; 1961

Computing Devices; 55 pp.; 1961

The World of Measurement; 64 pp.; 1961

Adventures in Graphing; 64 pp.; 1961

Finite Math Systems; 64 pp.; 1963

Logic and Reasoning; 64 pp.; 1963

Basic Concepts of Vectors; 64 pp.; 1963

Probability and Chance; 64 pp.; 1963

Geometric Constructions; 59 pp.; 1963

Curves In Space; 64 pp.; 1963

Johnson, R. A.; **ADVANCED EUCLIDEAN GEOMETRY**; Dover; (Paper 1.65)
This excellent text was originally published as **MODERN GEOMETRY**.
(11-12)

Jones, B. W.; **THEORY OF NUMBERS**; Holt; (3.75)
An elementary text on the subject. (11-12)

Jones, B. W.; **ELEMENTARY CONCEPTS OF MATHEMATICS**; 1963; Macmillan; 380 pp.; (6.00)

Pure number theory is presented to introduce the student to the abstract reasoning processes which are used to explain various studies in geometry. Practical applications of number theory are considered in the discussions of graphs, averages, permutations, combinations and probability. (9-12)

Kasner and Newman; **MATHEMATICS AND THE IMAGINATION**: 1940;
Simon and Schuster; 381 pp.; (4.05)

An outstanding book which can be read and enjoyed by all. Not merely a "puzzle" book, this volume contains some excellent mathematical ideas. (7-12)

Kaufman, G. L.; **THE BOOK OF MODERN PUZZLES**; Dover; (Paper 1.00)
Includes some reasoning problems which involve nonsense words. (7-12)

Kelley, J. L.; **INTRODUCTION TO MODERN ALGEBRA**; 1960; Van Nostrand; 335 pp.; (2.75)

This is the text used for the Continental Classroom course. (11-12)

Kemeny, Mirkil, Smell, and Thompson; **FINITE MATHEMATICAL STRUCTURE**; 1959; Prentice-Hall; (6.60)

Designed for students who have had a full year's course in the calculus, and slanted toward the physical sciences, this book has been prepared for college courses and also for high school mathematics teachers. An excellent book for good mathematics students. (11-12)

Kershner, R. B., and Wilcox, L. R.; **THE ANATOMY OF MATHEMATICS**;
Ronald Press; (7.50)

This difficult description of the structure of mathematics, elucidated by a careful analysis of some important fields would be rewarding to the serious student.

Klein, R.; **ELEMENTARY MATHEMATICS FROM AN ADVANCED STANDPOINT**; Dover; Vol I (1.85); Vol. II (1.75)

Consists of lectures of extraordinary clarity, delivered by a famous mathematician for German school teachers. Somewhat old-fashioned. Vol I, Arithmetic, Algebra, Analysis; Vol, II Geometry. (11-12)

Klein, F.; et al.; **FAMOUS PROBLEMS OF ELEMENTARY GEOMETRY**

AND OTHER MONOGRAPHS: Chelsea; 350 pp.; (3.95)
 Besides Klein's discussion of the three famous problems of antiquity, this volume contains; Sheppart, "From Determinants To 'Tensor'"; Macmohon, "Introduction to Combinatory Analysis"; and Mordell, "Three Lectures on Fermat's Last Theorem". (11-12)

Kline; MATHEMATICS IN WESTERN CULTURE; 1953; Oxford; (5.13)
 This book gives a remarkably fine account of the influence mathematics has exerted on the development of philosophy, the physical sciences, religion, and the arts in Western Life. (7-12)

Kramer; THE MAINSTREAM OF MATHEMATICS; 1951; Oxford; 321 pp.; (5.97)
 A historical treatment of mathematical thought from primitive numbers to relativity. (11-12)

Land, Frank; THE LANGUAGE OF MATHEMATICS; 1963; Doubleday; 264 pp.; (4.95)
 Explores the basis of our number system, including notation, units of measure, calculations, etc. Algebra, geometry and trigonometry are treated in their relation to the everyday world, while statistics is viewed in its application to the social sciences. (9-12)

Landau, E.; FOUNDATIONS OF ANALYSIS; 1960; Chelsea; (3.95)
 Although one cannot take at face value the author's contention that a reader should master this book in two days, it will prove rewarding to the diligent student who is prepared for some mathematical sophistication. (11-12)

Latham, J. L.; CARRY ON MR. BOWDITCH; 1955; Houghton; (3.25)
 As a ship chandler's apprentice in 1790 Nathaniel Bowditch had only his curiosity to teach him figures, yet the tables he later devised for navigators have been guiding ships ever since. A newberry Medal Award Book. (7-9)

Levi, Howard; FOUNDATIONS OF GEOMETRY AND TRIGONOMETRY; 1960; Prentice-Hall; 347 pp.; (8.95)
 A masterly exposition, beginning geometry without appeal to the concept of distance, and introducing assumptions as they are needed. (11-12)

Levi, Howard; ELEMENTS OF ALGEBRA; 1960; Chelsea; 161 pp.; (3.25)
 Emphasizes the theoretical aspect of the algebra rather than the manipulative by constructing the natural number system, the integers, the rationals, and the real number system and the developing the algebra appropriate to each of these systems. (9-12)

Levinger, E. E.; ALBERT EINSTEIN; Messner; (3.25)
 A biography which stresses the human aspect of this great man.

- Lieber and Lieber; **INFINITY**; 1953; Rinehart; 359 pp.; (5.00)
Of beginnings and endings, and of situations where there may be neither. Also about the indefinitely large and the indefinitely small. (7-12)
- Lieber and Lieber; **THE EINSTEIN THEORY OF RELATIVITY**; Holt; (3.95)
Amusing, light-hearted introduction to the subject matter. (7-12)
- Lieber and Lieber; **TAKE A NUMBER**; Ronald Press; (3.75)
An explanation of the "rules of the game" of arithmetic and algebra, thus constituting "mathematics for the two billion". (7-12)
- Littlewood, D. E.; **THE SKELETON KEY OF MATHEMATICS**; Harper;
(Paper 1.25)
Subtitles "A Simple Account of Complex Algebraic Theories", this book discusses "the general contours . . . for the general intelligent reader."
- Levis, F. B.; **COMPUTERS**: (Books 1 and 2); Houghton; (Paper 1.00 each)
Primary emphasis is on the mathematics and the components of computers. (9-12)
- MacDuffee, C. C.; **THEORY OF EQUATIONS**; 1954; Wiley; 120 pp.; (3.75)
An elementary college text, noteworthy for its clarity. (11-12)
- Manning, H. P.; **GEOMETRY OF FOUR DIMENSIONS**; Dover; (Paper 2.00)
A systematic development of four dimensional geometrical concepts with only passing mention of relativity.
- MATHEMATICS ENRICHMENT SERIES**, Houghton Mifflin Co.
All of the pamphlets encourage active learning and help to illuminate the nature and objectives of mathematics. They also introduce various types and points of views in mathematics. Some combine exercises with exposition and lead students to make discoveries for themselves. Other utilize historical backgrounds to show how mathematicians think and work. (10-11)
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 - INDUCTION IN MATHEMATICS (\$.75)
 - MOSAICS (\$.75)
 - STEREOGRAMS (\$1.60)
- Matthews, G.; **MATRICES**; (Books 1 and 2); Houghton; (1.00 each)
Contents: Codes, matrices, simultaneous linear equations, determinants, vectors, transformations of the plane, complex numbers, modular arithmetic, permutations, groups, and probability matrices and eigen values. (9-12)
- Maxwell, E. A.; **FALLACIES IN MATHEMATICS**; 1959; Cambridge; 95 pp.; (2.95)
Contains relatively advanced fallacious proofs. Fallacies are pointed out

and the reader encouraged to learn through the errors of others. A fairly strong background in geometry and trigonometry and a little calculus are prerequisites for adequate understanding. (11-12)

May, Kenneth O.; **ELEMENTS OF MODERN MATHEMATICS**; Addison-Wesley; 1959; 609 pp.; (9.75)

Introduces the notation of logic and sets, and proceeds to use them for the purpose of laying a foundation of mathematical concepts and skills that will prepare the student for the serious study of statistics. (11-12)

McCracken; **DIGITAL COMPUTER PROGRAMMING**; 1957; Wiley; (5.52)

An excellent book on advanced computer programming using mythical machine TYDAC. (11-12)

Menninger, K. W.; **MATHEMATICS IN YOUR WORLD**; 1961; Viking; 320 pp.; (4.75)

Provides a fresh insight into the nature of mathematics by presenting familiar phenomena in everyday life and revealing how a mathematicians would think about them. The topics are made clear through a host of humorous anecdotes and some of the puzzles and paradoxes of mathematical folklore. (10-12)

Merrill, Helen; **MATHEMATICAL EXCURSIONS**; 1933; Dover; (1.00)

A charming little book containing diverse topics. (7-9)

Meserve, Bruce E. **FUNDAMENTAL CONCEPTS OF GEOMETRY**; 1955; Addison-Wesley; 321 pp.; (7.95)

Presents geometry as a deductive system based upon postulates and underfined elements, and conveys an appreciation of the historical evolution of geometrical ideas and of the relation of Euclidean geometry to the space in which we live. (11-12)

Meyer, Jerome B.; **FUN WITH MATHEMATICS**; 1952; World; 176 pp.; (2.75)

A collection of mathematical puzzles, games and curiosities from presenting ancient problems to showing how to make a slide rule from an ordinary rule. (7-12)

Mosteller, Rourke and Thomas; **PROBABILITY -- A FIRST COURSE**;

Addison-Wesley; 321 pp.; (7.95)

Essentially the same text which was used for the Continental Classroom course. (11-12)

Mott-Smith, G.; **MATHEMATICAL PUZZLES**; 1954; Dover; (1.00)

Parlor games, number sticks, and similar recreations with answers explained to a greater extent than is common in many puzzle books. (7-12)

- Muir, J.; **OF MEN AND NUMBERS; THE STORY OF THE GREAT MATHEMATICS**; 1961; Dodd; 249 pp.; (3.50)
Contains informative biographical sketches of some of the more famous mathematicians, emphasizing their contributions to the pure science rather than personal anecdotes. (7-9)
- Magle, E., and Newman, J. R.; **GODEL'S PROOF**; N. Y. Univ. Press; (1.75)
A clear exposition of the proof of one of the most significant results about the foundations of mathematics. (11-12)
- Moritz, R. E.; **ON MATHEMATICS AND MATHEMATICIANS**; Dover; (Paper 1.95)
A well-chosen collection of quotations about mathematics, mathematicians, and other related matters. (7-12)
- Moroney, J. H.; **FACTS FROM FIGURES**; Penguin; (Paper 1.45)
A remarkable effective introduction to statistical method. (9-10)
- National Council of Teachers of Mathematics; **ENRICHMENT MATHEMATICS FOR HIGH SCHOOL**; 1963; NCTM; 388 pp.; (3.00)
Valuable for secondary school libraries, for the teacher working with talented students, or for the student who wishes to explore on his own. Contains a list of mathematics books for high school libraries recommended by the NCTM. (9-12)
- Neely, H. M.; **TRIANGLES**; 1962; Crowell; (5.43)
The author begins by asking three questions: 1. Why should anyone write a book about triangles? 2. Of what use are triangles anyway? 3. Who (except math teachers) thinks triangles are important? He then proceeds to answer each question with a lively, lucid explanation. (7-9)

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 EPISODES FROM EARLY MATHEMATICS
 GROUPS AND THEIR GRAPHS
 MATHEMATICS OF CHOICE
 FROM PYTHAGORAS TO EINSTEIN
 THE CONTEST PROBLEM BOOK II

Newman, J. R.; **THE WORLD OF MATHEMATICS**; Simon and Schuster; 1956; 4 vols. 2535 pp.; (25.00) (Paper, 1960, 9.95)
 A compendium of selections from mathematical literature. Editorial comments and essays furnish a unifying thread. Includes the classic book **FLATLAND** by E. A. Abbott. (9-12)

Nicod, J.; **FOUNDATIONS OF GEOMETRY AND INDUCTION**; Humanities Press
 An original work on the relationship of geometry to experience which raises interesting philosophical and psychological questions. (9-12)

Northrop, E. P.; **RIDDLES IN MATHEMATICS**; 1944; Van Nostrand; 262 pp.; (4.50)
 Over two hundred mathematical fallacies and paradoxes are drawn from every branch of mathematics from arithmetic to calculus, and included is an appendix of complete solutions. (9-12)

Ogilvy, C. S.; **THROUGH THE MATHESCOPE**; 1956; 162 pp.; (5.00)
 Popular discussion of selected topics from number theory, algebra, geometry, and analysis for qualified students, including capable junior high school students. (7-12)

Ore, Oystein; **NUMBER THEORY AND ITS HISTORY**; 1948; McGraw-Hill; 370 pp.; (7.50)
 Well-written. The historical development and the ideas introduced in

the early chapters, especially in relation to binary arithmetic, should prove of interest and value to junior and senior high school teachers. Many sections can be read and enjoyed by high school students. (9-12)

Ore; Oystein; NIELS HENRICH ABEL, MATHEMATICIAN EXTRAORDINARY; 1957; Univ. of Minn., Press; (5.75)

A biography of the Norwegian scientist who made notable contributions to mathematics. (9-12)

Pedoe, D.; CIRCLES; Macmillan; (3.74)

An exposition of some topics from pure mathematics which are related to the circle. (9-12)

Pedoe, D.; THE GENTLE ART OF MATHEMATICS; Macmillan; (3.95)

"This book is intended for the many people who would like to know what mathematics is about, especially modern mathematics". (9-12)

Pedoe, D.; A GEOMETRIC INTRODUCTION TO LINEAR ALGEBRA; 1963; Wiley; 224 pp.; (5.95)

An introduction to linear algebra. (11-12)

Pfeiffer, J.; THE THINKING MACHINE; 1962; Lippincott; (5.46)

An introduction to the world of electronic devices - computers, data processors, electronic brains. These machines are now able to figure bank balances, predict the weather, translate from Russian to English, and play a passable game of chess. (7-12)

Piper, R.; THE STORY OF COMPUTERS; 1964; Harcourt; (3.50)

A comprehensive study of thinking machines, their history, potentialities, and ways of functioning, also a discussion of the career possibilities in the field. (7-9)

Polya; MATHEMATICS AND PLAUSIBLE REASONING; 1954; Princeton Univ. Press; (8.10 for two volumes)

This is a guide to the practical art of plausible reasoning; the first volume deals with induction and analogy in mathematics, the second with patterns of plausible inference. (11-12)

Polya; HOW TO SOLVE IT; Princeton;

A pointed effort to teach the knack of solving mathematical problems. (10-12)

Rademacher, H., and Otto Toeplitz; THE ENJOYMENT OF MATHEMATICS; 1957; Princeton; 204 pp.; (5.00)

Contains samples of the diversified phenomena which comprise mathematics. Provides insight into the immense scope of the pure science. (9-12)

Ravielli, Anthony; AN ADVENTURE IN GEOMETRY; 1957; Viking; 118 pp.; (3.25)

Even those who are not mathematically minded will find it difficult to resist this description of the various geometric forms (triangles, circles, pyramids, spirals) and how they occur in nature. Also included are such provocative subjects as projective geometry, non-Euclidean geometry, and a discussion of how shapes affect our feelings. (7-9)

Reichmann, W.J.; USE AND ABUSE OF STATISTICS; 1962; Oxford; 336 pp.; (5.00)

Designed for the general reader who wants to learn something about statistical methods and their application and yet does not want a textbook. (9-12)

Reichmann, W.J.; THE FASCINATION OF NUMBERS; Oxford; (4.25)

A discussion of some of the methods and results of elementary number theory. (10-12)

Reid, Constance; FROM ZERO TO INFINITY; 1960; Crowell; 2nd rev. ed; 161 pp.; (4.50)

A chapter is devoted to infinity and to each of the digits 0 through 9. History, Number theory, and recreations are well-blended to generate interest in more serious number-theory thinking. (7-12)

Reid, Constance; A LONG WAY FROM EUCLID; 1963; Crowell; 292 pp.; (5.00)

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Reynolds, J. A. C.; SHAPE, SIZE AND PLACE; Houghton; (1.00)

This book stresses the unity of mathematics and interrelates topics of several other books in the series. Specifically, it shows how numbers and algebra can be exploited effectively in presenting geometric ideas. It also includes an interesting appendix on the structure of the real number system. Contents include; coordinated, graphs, reflections, symmetry, linear programming, Pythagorean triples, and topology. (-12)

Richardson, M.; FUNDAMENTALS OF MATHEMATICS; 1958; Macmillan; 507 pp.; (6.50)

Rev. Ed. Offers an excellent approach to college math for the non-major. Opening with logic, this text covers such new topics as Boolean algebra, electronic computers, algebra of propositions, and truth tables. (10-12)

Ringenberg; A PORTRAIT OF 2; 1956; NCTM; (.75)

Written to enlarge the reader's concept of number, this pamphlet discusses the number 2 as an interger, a rational number, real number and a complex number. Lays an excellent foundation for modern mathematical ideas. (9-12)

Rosen, Sidney; GALILEO AND THE MAGIC NUMBERS; Little, Brown; (3.75)
An introduction to Galileo's scientific contributions, with emphasis on mathematical content. (7-12)

Russell, Bertrand; THE A B C OF RELATIVITY; 1959; Oxford; 139 pp.; (3.75)
Rev. Ed. The complexities of Einstein's work are explained for the non-mathematical reader in terms that he can understand. (9-12)

Sagan, Hans; INTEGRAL AND DIFFERENTIAL CALCULUS; AN INTUITIVE APPROACH; 1962; Wiley; 329 pp.; (5.95)
This is a text developed on an historical plan in which physical and geometric applications are interwoven to provide motivation for introducing new mathematical concepts. (11-12)

Sawyer, W. W.; MATHEMATICIAN'S DELIGHT; 1943; Penguin; (.95)
A popularization which is suitable for reading by those who have a dread of mathematics. (7-12)

Sawyer, W. W.; PRELUDE TO MATHEMATICS; 1955; Penguin; (.95)
An excellent popular account of abstract mathematics. (7-12)

Schuster, Seymour; ELEMENTARY VECTOR GEOMETRY; 1962; Wiley; 213 pp.; (4.95)
Develops vector algebra from a geometric viewpoint with applications. (10-12)

Sherlock, A. J.; AN INTRODUCTION TO PROBABILITY AND STATISTICS; Houghton; (1.00)
This book introduces the basic ideas of probability and statistics in a modern way. Its emphasis is on concepts rather than computation, and it makes special reference to the social and physical sciences. Beginning with methods of collecting data, averages and price indices, probability and distributions, sampling and significance tests, regression lines, and correlation. (11-12)

Simon, William; MATHEMATICAL MAGIC; 1964; Scribners; (4.95)
Strange coincidences, unexpected relationships, magic numbers, and tricks are among the many diversions shown by this fresh and practical mathematical book. Index.

Smail, Lloyd; ANALYTIC GEOMETRY AND CALCULUS; 1953; Appleton; 714 pp.; (6.50)

One of many standard textbooks integrating the study of analytic geometry and calculus, an approach which is becoming very common. (11-12)

Stein, Sherman K.; MATHEMATICS: THE MAN-MADE UNIVERSE; 1963; Freeman; 316 pp.; (6.50)

Mathematics is revealed in its true nature, as a product of the human mind, and topics are selected from number theory, topology, set theory, geometry, and analysis. (11-12)

Steinhaus, H.; MATHEMATICAL SNAPSHOTS (2nd ed.); 1960; Oxford; 328 pp.; (7.50)

A visual excursion into the field of elementary mathematics, running the gamut of exercises from simple tricks and puzzles to advanced problems, emphasis is on learning through visualizations. (9-12)

Steinhaus, H.; ONE HUNDRED PROBLEMS IN ELEMENTARY MATHEMATICS; 1964; Basic Books; 174 pp.; (4.95)

Included in the hundred problems are amusing conundrums in equations and inequalities, circles and ellipses, polyhedra and spheres, chess, sports, and homely affairs. Twisters with such intriguing titles and "The Wandering of a Fly", "Student Debts", and "A strange Social Set", are furnished--with solutions. The problems are, for the most part, the kind a student needs to think about for a time before he can come up with a solution. (9-12)

Struik, D. J.; CONCISE HISTORY OF MATHEMATICS; Dover; (1.75)

Concise, scholarly and comprehensive, emphasizing the social relations of mathematics. (11-12)

Taylor, Angus E.; CALCULUS WITH ANALYTIC GEOMETRY; 1959; Prentice-Hall; 762 pp.; (13.25)

A popular college text which combines the studies of calculus and analytic geometry. (11-12)

Terry, Leon; THE MATHMEN; 1964; McGraw; (3.95)

Re-creates the dawn of mathematics, principally of geometry and arithmetic, intelling of the discoveries of these Greek "mathmen" of antiquity. (7-12)

THINKING WITH MATHEMATICS SERIES; Heath; 1963-64; (1.00 each paper)

These paper back pamphlets, written expressly for secondary students, present familiar topics in greater depth and include topics not usually found in secondary school texts. Well-suited for use in

summer school programs as enrichment material and for independent study by both students and teachers.

- Bristol, J. D.; THE CONCEPT OF FUNCTION. 1963;
72 pp.
GRAPHING RELATIONS AND FUNCTIONS.
1963; 72 pp.
AN INTRODUCTION TO LINEAR PROGRAM-
MING, 1963; 72 pp.
- Hess, A. L.; MATHEMATICS PROJECTS HANDBOOK;
1962; 64 pp.
- Speckelmeyer; THE INTEGERS; 1964; 64 pp.
THE REAL NUMBERS; 1964; 64 pp.
THE COMPLEX NUMBERS; 1964; 64 pp.
THE RATIONAL NUMBERS; 1964; 64 pp.
THE NATURAL NUMBERS; 1963; 72 pp.
- Mustain, K.; FINITE MATHEMATICAL STRUCTURES;
1964; 64 pp.
AN INTRODUCTION TO TRANSFINITE
MATHEMATICS; 1964; 72 pp.
- Thomas, George B.; CALCULUS AND ANALYTIC GEOMETRY; 1960;
Addison-Wesley; 1010 pp.; (10.75)
An undergraduate college text for the science or engineering major
which will be useful as reference source for high school students
who have been introduced to calculus. Emphasis is upon theory.
(11-12)
- Thurston, H. A.; THE NUMBER-SYSTEM; 1956; Wiley; (4.50)
The first half of the book, called "Explanatory Treatment", consists
of chapters "whose function is to explain and comment on the axioms
and definitions, and to make the treatment in the second part digest-
ible": The second half, called "Systematic Treatment", "presents a
detailed construction of the number-system, starting from Peano's
axioms". An unusually successful exposition. (11-12)
- Titchmarsh, E. C.; MATHEMATICS FOR THE GENERAL READER;
Hutchinson;
Chapters on a spectrum of topics, from counting to the integral cal-
culus, written by a distinguished British mathematician. (7-12)
- Uspensky, J. V., and Heaslet, M. A.; INTRODUCTION TO NUMBER
THEORY; 1939; McGraw-Hill; 484 pp.; (7.95)
An elementary textbook on the subject. (11-12)
- Valens, Evans G.; THE NUMBER OF THINGS: PYTHAGORAS, GEOMETRY
AND HUMMING STRINGS; 1964; Dutton; 189 pp.; (4.95)
The origins of geometry, musical scales and annotations, and cosmolo-
gy can be traced to pythagoras and his followers. (7-12)

Van Der Waerden, B. L.; SCIENCE AWAKENING; 1961; Oxford; 306 pp.; (7. 50)

A study of the history of Greek mathematical thought as influenced by the Egyptian and Babylonian cultures -- developed with the unifying theme that science and technology is based on thematics and physics. (11-12)

Wallis, W. A.; and Roberts, H. V.; STATISTICS -- A NEW APPROACH; Free Press; (7. 95)

Contains a wealth of examples illustrating the uses and abuses of statistics. Requiring little mathematical background. (7-12)

Weaver, Warren; LADY LUCK; THE THEORY OF PROBABILITY; 1963; Anchor S30; 392 pp.; (1. 45)

The author is convinced that the type of thinking about problems which one learns in probability theory is of the highest importance. Worthwhile for every college-bound secondary school student. (11-12)

Weyl, H.; SYMMETRY; 1952; Princeton; (4. 50)

A beautiful exposition, written by a master, ranging from a single mathematical aspects of artistic ornament to results in group theory. (9-12)

Whitehead, A. N.; AN INTRODUCTION TO MATHEMATICS; Oxford; (1. 50)

A model of popular, but not oversimplified, exposition which is worth careful reading. (11-12)

Whitesitt, J. Eldon; BOOLEAN ALGEBRA AND ITS APPLICATION; 1961; Addison-Wesley; 182 pp.; (6. 95)

Boolean algebra theory is approached as the natural algebra of sets, and in its practical application is circuit theory and symbolic logic. (11-12)

Whittaker, Sir Edmund; FROM EUCLID TO EDDINGTON; 1959; Dover; (Paper 1. 35)

"... not intended to be a summary of present-day knowledge in physics... but rather a history of the evolution of concepts and principles, especially such as have provoked long controversies, in some cases still unsettled." Preface. (11-12)

Wilder, R. L.; INTRODUCTION TO THE FOUNDATIONS OF MATHEMATICS; 1952; Wiley; (5. 75)

Includes a sophisticated development of the theory of sets as well as some philosophical aspects of mathematics. Requires some mathematical maturity. (11-12)

Wolfe, H. E.; INTRODUCTION TO NON-EUCLIDEAN GEOMETRY; 1945; Holt; Rinehart; (5. 50)

A textbook on the subject with interesting historical background. (11-12)

Wylie; 101 PUZZLES IN THOUGHT AND LOGIC; 1957; Dover; (1.00)

Brand new problems you need no special knowledge to solve. Introduction with simplified explanation of general scientific method and puzzle solving. A fine book to stimulate logical thinking. (7-12)

Yaglom and Boltyanski; CONVEX FIGURES; Holt, Rinehart, and Winston; (6.50)

A translation of a Russian book on a fascinating aspect of geometry which requires some sophistication. (11-12)

23rd YEARBOOK OF NATIONAL COUNCIL OF TEACHERS OF MATHEMATICS; 1957; NCTM; (5.75)

Provides background and reference material for both the content and spirit of modern mathematics. Not always easy reading, but an excellent reference book for better students. (11-12)

24th YEARBOOK OF NATIONAL COUNCIL OF TEACHERS OF MATHEMATICS; THE GROWTH OF MATHEMATICAL IDEAS GRADES k-12; 1959; NCTM; (5.00)

An excellent book not only for teachers but also for students interested in modern concepts. (7-12)

Young, J. W.; LECTURES ON THE FUNDAMENTAL CONCEPTS OF ALGEBRA AND GEOMETRY; Macmillan; (5.95)

Although high school mathematics is assumed, maturity is required. (11-12)

Young, J. W. A. (ed); MONOGRAPHS ON TOPICS OF MODERN MATHEMATICS; Dover; (2.00)

Includes the following expositions by leading mathematicians; Foundations of Geometry by Veblen; Modern Pure Geometry by Holgate; Non-Euclidean Geometry by Woods; Fundamental Propositions of Algebra by Huntington; The Algebraic Equation by Miller; The Function Concept and the Fundamental Notions of the Calculus by Bliss; The Theory of Numbers by Young; Constructions with Ruler and Compasses and Regular Polygons by Dickson; History and Transcendence of Pi by Smith. (11-12)

Bibliography prepared by JOSEPH P. CECH

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Much of the information contained in this bibliography was obtained from Wesleyan University Press publication, "Bibliography of Mathematics for Secondary School Libraries: by Professor Rosenbaum; the

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This bibliography of recent texts, which is not to be considered as a recommended list, includes most of the recent textbooks from bonded companies. Any text should be examined carefully since a publication date or title does not necessarily mean that the book reflects the "newer" thinking in mathematics. Those marked with an asterisk may be considered as general mathematics.

Addison-Wesley Publishing Company, Inc., 106 West Station Street, Barrington, Ill. 60010

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- Random - Random House Inc., 457 Madison Ave., New York 22, N.Y. 10022
- Rinehart - see Holt
- Roanoke - Roanoke Center Press, P.O. Box 4085, Roanoke, Virginia
- Rockford - Rockford Morning Star, Modern Math, Box 1088, Rockford, Ill. 61105
- Ronald - The Ronald Press Inc., 15 E. 26th St., New York City 10, N.Y.
- St. Martin's - St. Martin's Press Inc., 175 Fifth Ave., New York, N.Y. 10010
- Scholastic Book - Scholastic Book Services, Scholastic, Mag., 50 W 44th St.,
New York, N.Y. 10036
- Science - Science Research Associates Inc., 259 East Erie St., Chicago, Ill.
60611
- Scott-Foresman - Scott-Foresman and Co., 433 East Erie St., Chicago, Ill. 60611
- Scott - William R. Scott Inc., 333 Avenue of the Americas, New York, N.Y.
10014
- Scribner - Charles Scribner's Sons, 597 Fifth Ave., New York, N.Y. 10017
(Orders to Vreeland Ave., Totowa, N.J.)
- Scripta Mathematica - Scripta Mathematica, Amsterdam Ave. and 186th St., New
York 33, N.Y.
- Silver-Burdett - Silver-Burdett Co., 460 South Northwest Highway, Park Ridge,
Ill. 60068
- Simon - Simon and Schuster, Inc., 630 Fifth Ave., New York 20, N.Y.
- Singer - The L.W. Singer Co., Inc., 5601 Northwest Highway, Chicago, Ill.
- Southern Ill. - Southern Illinois Press, Carbondale, Ill.
- State College - State College of Iowa, Field Services Division, Cedar Falls,
Iowa
- Steck-Vaughn - Steck-Vaughn Co., Box 2028, Austin, Texas 78767
- Teachers - Teachers Publishing Corp., Darien, Connecticut
- Time Inc. - orders to Silver Burdett Co., Park Ave & Columbia Rd., Morristown,
N.J. 07960
- Torchbooks - see Harper
- U.S. Printing - United States Government Printing Office, Bureau of Publications,
Washington, D.C.
- U. of Minn. - University of Minnesota Press, 2037 University Ave., S.E.,
Minneapolis, Minn. 55455
- Vanguard - Vanguard Press Inc., 424 Madison Ave., New York, N.Y. 10017
- Van Nostrand - D. Van Nostrand Co., Inc., 120 Alexander St., Princeton, N.J.
08541
- Viking - The Viking Press, 625 Madison Ave., New York, N.Y. 10022
- Walch - J. Weston Walch Co., Portland, Maine
- Walck - Walck Publishing Co., 19 Union Square W., New York, N.Y. 10003
- Webster-McGraw-Hill - Webster Division-McGraw-Hill Book Co., Manchester Rd.,
Manchester, Missouri 63062
- Westwood - Westwood Books, 1160 San Fernando Rd., Los Angeles, Calif. 90065
- Whittlesey - Whittlesey House, 330 W. 42nd St., New York, N.Y. 10036
- Wiley - John Wiley and Sons, 605 Third Ave., New York, N.Y. 10016
- Wonder - Wonder Books, (order to Grossett & Dunlap, 51 Madison Ave., New York,
N.Y.
- World Pub. - The World Publishing Co., 119 W. 57th St., New York, N.Y. 10019
- Yale - Yale University Press, 140 York St., New Haven, Conn. 06511

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