

## The Ancient Tradition Of Geometric Problems

*This book opens the world of the ancient Greeks to all readers through easily accessible entries on topics essential to understanding Greek high culture and daily life. The ancient Greeks provided the foundation for Western civilization. They made significant advances in science, mathematics, philosophy, literature, and government. While many readers might have heard of Plato and Aristotle, however, or be familiar with the classic works of Greek tragedy, most people know significantly less about daily life in the ancient Greek world. This encyclopedia opens the world of the ancient Greeks, spanning Greek history from the Bronze Age through Roman times, with an emphasis on the Classical and Hellenistic Eras. The encyclopedia provides roughly 270 easily accessible entries on topics essential to understanding everything from Greek high culture to daily life. These entries are grouped in topical sections on the arts, science and technology, politics and government, domestic life, and other subjects. Sidebars on particularly noteworthy people, places, and concepts provide related information, while primary documents allow readers to delve into the mindset and feelings of the ancient Greeks themselves.*

*Extensive bibliographic references give curious readers direction for further research. • Includes reference entries with objective, essential information about topics related to daily life in ancient Greece • Offers sidebars with related, nuanced information that will interest readers in Greek history • Cites works for further reading in entries • Gives readers first-hand accounts of life in ancient Greece in primary source documents*

*Lange bevor die Schrift entwickelt wurde, hat der Mensch geometrische Strukturen verwendet. Beim Weben und Flechten entstanden einfache 2-dimensionale Muster, Bauen war ohne 3-dimensionale Körper nicht denkbar. Der Band gibt einen faszinierenden Überblick über die geometrischen Vorstellungen der Menschen von der Urgesellschaft bis zu den komplexen mathematischen wie auch künstlerischen Ideen des 20. Jahrhunderts. Für die 3. Auflage wurden neueste Forschungsergebnisse über Woodhenge und andere frühe mathematische Darstellungen aufgenommen.*

*This book constitutes the refereed proceedings of the 11th International Conference on the Theory and Application of Diagrams, Diagrams 2020, held in Tallinn, Estonia, in August 2020.\* The 20 full papers and 16 short papers presented together with 18 posters were carefully reviewed and selected from 82 submissions. The papers are organized in the following topical sections: diagrams in mathematics; diagram design, principles, and classification; reasoning with diagrams; Euler and Venn diagrams; empirical studies and cognition; logic and diagrams; and posters. \*The conference was held virtually due to the COVID-19 pandemic. The chapters 'Modality and Uncertainty in Data Visualization: A Corpus Approach to the Use of Connecting Lines,' 'On Effects of Changing Multi-Attribute Table Design on Decision Making: An Eye Tracking Study,' 'Truth Graph: A Novel Method for Minimizing Boolean Algebra Expressions by Using Graphs,' 'The DNA Framework of Visualization' and 'Visualizing Curricula' are available open access under a Creative Commons Attribution 4.0 International License via [link.springer.com](http://link.springer.com).*

*General textbooks, attempting to cover three thousand or so years of mathematical history, must necessarily oversimplify just about everything, the practice of which can scarcely promote a critical approach to the subject. To counter this, History of Mathematics offers deeper coverage of key select topics, providing students with material that could encourage more critical thinking. It also includes the proofs of important results which are typically neglected in the modern history of mathematics curriculum.*

*Geometric Methods for Digital Picture Analysis*

*The Genius of Archimedes -- 23 Centuries of Influence on Mathematics, Science and Engineering*

*The World of Ancient Greece: A Daily Life Encyclopedia [2 volumes]*

*The New Encyclopaedia Britannica: Macropaedia : Knowledge in depth*

*A History of Mathematics*

*Summer 2006*

Designed for a junior-senior level course for mathematics majors, including those who plan to teach in secondary school. The first chapter presents several finite geometries in an axiomatic framework, while Chapter 2 continues the synthetic approach in introducing both Euclids and ideas of non-Euclidean geometry. There follows a new introduction to symmetry and hands-on explorations of isometries that precedes an extensive analytic treatment of similarities and affinities. Chapter 4 presents plane projective geometry both synthetically and analytically, and the new Chapter 5 uses a descriptive and exploratory approach to introduce chaos theory and fractal geometry, stressing the self-similarity of fractals and their generation by transformations from Chapter 3. Throughout, each chapter includes a list of suggested resources for applications or related topics in areas such as art and history, plus this second edition points to Web locations of author-developed guides for dynamic software explorations of the Poincaré model, isometries, projectivities, conics and fractals. Parallel versions are available for "Cabri Geometry" and "Geometers Sketchpad".

This is an overview of the history of ancient Greek geometry. It highlights the major Greek geometers and their work. There are added details for specific topics of interest. This includes tracing Greek attempts to solve the classical problems of trisecting an angle, squaring a circle, and doubling a cube. Other topics that are traced include the method of exhaustion leading to integration techniques, the determination of what is a valid proof, various "neusis" methods that some Greeks used, and the evolution of conic and other esoteric curves used to solve geometric problems. Instead of being a chronology of events, this book gives a chronology of people in a sequence of biographies focused on their contributions to geometry. So, there is little about their lives other than their work. This makes the flow of Greek discoveries between individuals and the evolution of geometry more transparent. We begin with the pre-Socratics (including Thales and Pythagoras) who started the millennium of Greek geometry. We then continue with 13 geometers who preceded Euclid (including Hippocrates, Plato, and Eudoxus) culminating in Euclid and his Elements of Geometry. After Euclid, a new age of geometry began with Archimedes who was followed by 10 geometers (including Apollonius, Ptolemy, and

Pappus).

A History of Mathematics: From Mesopotamia to Modernity covers the evolution of mathematics through time and across the major Eastern and Western civilizations. It begins in Babylon, then describes the trials and tribulations of the Greek mathematicians. The important, and often neglected, influence of both Chinese and Islamic mathematics is covered in detail, placing the description of early Western mathematics in a global context. The book concludes with modern mathematics, covering recent developments such as the advent of the computer, chaos theory, topology, mathematical physics, and the solution of Fermat's Last Theorem. Containing more than 100 illustrations and figures, this text, aimed at advanced undergraduates and postgraduates, addresses the methods and challenges associated with studying the history of mathematics. The reader is introduced to the leading figures in the history of mathematics (including Archimedes, Ptolemy, Qin Jiushao, al-Kashi, al-Khwarizmi, Galileo, Newton, Leibniz, Helmholtz, Hilbert, Alan Turing, and Andrew Wiles) and their fields. An extensive bibliography with cross-references to key texts will provide invaluable resource to students and exercises (with solutions) will stretch the more advanced reader.

For textual studies relating to the ancient mathematical corpus the efforts by the Danish philologist, 1. L. Heiberg (1854-1928), are especially significant. Beginning with his doctoral dissertation, Quaestiones Archimedeae (Copenhagen, 1879), Heiberg produced an astonishing series of editions and critical studies that remain the foundation of scholarship on Greek mathematical science. For comprehensiveness and accuracy, his editions are exemplary. In his textual studies, as also in the prolegomena to his editions, he carefully described the extant evidence, organized the manuscripts into stemmata, and drew out the implications for the state of the text. 5 With regard to his Archimedean work, Heiberg sometimes betrayed signs of the philologist's occupational disease - the tendency to rewrite a text deemed on subjective grounds to be unworthy. 6 But he did so less often than his prominent 7 contemporaries, and not as to detract appreciably from the value of his editions. In examining textual questions bearing on the Archimedean corpus, he attempted to exploit as much as possible evidence from the ancient commentators, and in some instances from the medieval translations. It is here that opportunities abound for new work, extending, and in some instances superseding, Heiberg's findings. For at his time the availability of the medieval materials was limited. In recent years Marshall Clagett has completed a mammoth critical edition of the medieval Latin tradition of Archimedes,8 while the bibliographical instruments for the Arabic tradition are in good order thanks to the work of Fuat Sezgin.

Apollonius of Perga's Conica

The Analytic Turn

Chronicles by the Explorers

Textual Studies in Ancient and Medieval Geometry

Secrets of the Ancient Mystics Revealed

Greek Geometry

**Oxford Studies in Ancient Philosophy is a volume of original articles on all aspects of ancient philosophy. The articles may be of substantial length, and include critical notices of major books. OSAP is published twice yearly, in both hardback and paperback. 'unique value as a collection of outstanding contributions in the area of ancient philosophy.'** Sara Rubinelli, Bryn Mawr Classical Review

**Digital geometry is about deriving geometric information from digital pictures. The field emerged from its mathematical roots some forty-years ago through work in computer-based imaging, and it is used today in many fields, such as digital image processing and analysis (with applications in medical imaging, pattern recognition, and robotics) and of course computer graphics. Digital Geometry is the first book to detail the concepts, algorithms, and practices of the discipline. This comprehensive text and reference provides an introduction to the mathematical foundations of digital geometry, some of which date back to ancient times, and also discusses the key processes involved, such as geometric algorithms as well as operations on pictures. \*A comprehensive text and reference written by pioneers in digital geometry, image processing and analysis, and computer vision \*Provides a collection of state-of-the-art algorithms for a wide variety of geometrical picture analysis tasks, including extracting data from digital images and making geometric measurements on the data \*Includes exercises, examples, and references to related or more advanced work**

**The book also ties together the concerns of philosophers of science and cognitive science researchers, showing, for example, the connections between geometrical reasoning and cognition as well as the results of recent logical and computational models of geometrical reasoning. All the topics are covered from a novel combination of both historical and contemporary perspectives."--Jacket.**

**This book offers a unique opportunity to understand the essence of one of the great thinkers of western civilization. A guided reading of Euclid's Elements leads to a critical discussion and rigorous modern treatment of Euclid's geometry and its more recent descendants, with complete proofs. Topics include the introduction of coordinates, the theory of area, history of the parallel postulate, the various non-Euclidean geometries, and the regular and semi-regular polyhedra.**

**From Mesopotamia to Modernity**

**Methods for Euclidean Geometry**

**Philosophy and Geometry**

## **Studies on the Occasion of John E. Murdoch's Seventieth Birthday Geometry: Euclid and Beyond Peripatoi**

Written in honor of John E. Murdoch's seventieth birthday, the essays collected here focus on the interpretation of ancient and scientific texts not just as isolated into as responses to particular settings or contexts.

This text examines the 3 classical geometries and their relationship to general geometric structures, with particular focus on affine geometry, projective metrics, non-spatial geometry. 1953 edition.

This book collects the papers of the conference held in Berlin, Germany, 27-29 August 2012, on 'Space, Geometry and the Imagination from Antiquity to the Modern Age' was a joint effort by the Max Planck Institute for the History of Science (Berlin) and the Centro die Ricerca Matematica Ennio De Giorgi (Pisa).

Archimedes is held in high esteem by mathematicians, physicists and engineers as one of the most brilliant scientists of all time. These proceedings contain original, with the primary emphasis on the scientific work of Archimedes and his influence on the fields of mathematics, science, and engineering. There are also papers dealing with the myths and legends about Archimedes and about the Archimedes Palimpsest. Papers on the following subjects form part of the book: Hydrostatics (buoyancy, density, stability of floating bodies); Mechanics (levers, pulleys, centers of gravity, laws of equilibrium); Pycnometry (measurement of volume and density); Integral Calculus (the father of the integral calculus, method of exhaustion, approximation of pi, determination of areas and volumes); Mathematical Physics (Archimedes as the father of the Law of the Lever, Law of Buoyancy, Axiomatization of Physics); History of Mathematics and Mechanics (Archimedes' influence in antiquity, the middle ages, the Renaissance times; his influence on Leonardo da Vinci, Galileo, Newton, and other giants of science and mathematics); Ancient Machines and Mechanisms (catapults, water screws, compound pulleys, planetaria, water clocks, celestial globes, the Antikythera Mechanism); Archimedean Solids (their rediscovery in the Renaissance and their application in science and chemistry); Archimedean Legends (how stories of golden crowns, eureka moments, naked runs, burning mirrors, steam cannons, etc., have influenced us throughout history, whether true or not); The Cattle Problem (how its 18th century rediscovery inspired the study of equations with integer solutions); Teaching the Ideas of Archimedes (how they have influenced the teaching of science, mathematics, and engineering).

Analysis in Early Analytic Philosophy and Phenomenology

5000 Years of Geometry

Redefining Geometrical Exactness

Writing the History of Mathematics: Its Historical Development

Geschichte, Kulturen, Menschen

Reader's Guide to the History of Science

*The twentieth century is the period during which the history of Greek mathematics reached its greatest acme. Indeed, it is by no means exaggerated to say that Greek mathematics represents the unique field from the wider domain of the general history of science which was included in the research agenda of so many and so distinguished scholars, from so varied scientific communities (historians of science, historians of philosophy, mathematicians, philologists, philosophers of science, archeologists etc. ), while new scholarship of the highest quality continues to be produced. This volume includes 19 classic papers on the history of Greek mathematics that were published during the entire 20th century and affected significantly the state of the art of this field. It is divided into six self-contained sections, each one with its own editor, who had the responsibility for the selection of the papers that are republished in the section, and who wrote the introduction of the section. It constitutes a kind of a Reader book which is today, one century after the first publications of Tannery, Zeuthen, Heath and the other outstanding figures of the end of the 19th and the beginning of 20th century, rather timely in many respects.*

*Presents a comprehensive study of what remains of the writings of Aristotle's student Eudemus of Rhodes on the history of the exact sciences. This work presents an analysis of the trends in Presocratic, Sophistic and Platonic thought that contributed to the development of the history of science.*

*As an historiographic monograph, this book offers a detailed survey of the professional evolution and significance of an entire discipline devoted to the history of science. It provides both an intellectual and a social history of the development of the subject from the first such effort written by the ancient Greek author Eudemus in the Fourth Century BC, to the founding of the international journal, Historia Mathematica, by Kenneth O. May in the early 1970s.*

*Illustrated study focuses on attempts by ancient Greeks to solve three classical problems: cube duplication, angle trisection, and circle quadrature. Origins of the study of conics, introduction of special mechanical curves, more. 1986 edition.*

*Text, Context, Subtext*

*Diagrammatic Representation and Inference*

*Mathematical Expeditions*

*The Geometry of Domains in Space*

*The Objects of Geometry from Antiquity to the Early Modern Age*

*The Ancient Tradition of Geometric Problems, PT 1*

In his "Géométrie" of 1637 Descartes achieved a monumental innovation of mathematical techniques by introducing what is now called analytic geometry. Yet the key question of the book was foundational rather than technical: When are geometrical objects known with such clarity and distinctness as befits the exact science of geometry? Classically, the answer was sought in procedures of geometrical construction, in particular by ruler and compass, but the introduction of new algebraic techniques made these procedures insufficient. In this detailed study, spanning essentially the period from the first printed edition of Pappus' "Collection" (1588, in Latin translation) and Descartes' death in 1650, Bos explores the current ideas about construction and geometrical exactness, noting that by the time Descartes entered the field the incursion of algebraic techniques, combined with an increasing uncertainty about the proper means of geometrical problem solving, had produced a certain impasse. He then analyses how Descartes transformed geometry by a redefinition of exactness and by a demarcation of geometry's proper subject and procedures in such a way as to incorporate the use of algebraic methods without destroying the true nature of geometry. Although mathematicians later essentially discarded Descartes' methodological convictions, his influence was profound and pervasive. Bos' insistence on the foundational aspects of the "Géométrie" provides new insights both in the genesis of Descartes' masterpiece and in its significance for the development of the conceptions of mathematical exactness.

The stories of five mathematical journeys into new realms, pieced together from the writings of the explorers themselves. Some were guided by mere curiosity and the thrill of adventure, others by more practical motives. In each case the outcome was a vast expansion of the known mathematical world and the realisation that still greater vistas remain to be explored. The authors tell these stories by guiding readers through the very words of the mathematicians at the heart of these events, providing an insight into the art of approaching mathematical problems. The five chapters are completely independent, with varying levels of mathematical sophistication, and will attract students, instructors, and the intellectually curious reader. By working through some of the original sources and supplementary exercises, which discuss and solve -- or attempt to solve -- a great problem, this book helps readers discover the roots of modern problems, ideas, and concepts, even whole subjects. Students will also see the obstacles that earlier thinkers had to clear in order to make their respective contributions to five central themes in the evolution of mathematics.

This volume contains a historically sensitive analysis and interpretation of Apollonius of Perga's Conica, one of the greatest works of Hellenistic mathematics. It provides a long overdue alternative to H. G. Zeuthen's "Die Lehre von den Kegelschnitten im Altertum."

The field of geometry reflects a conglomeration of discoveries over time. Filled with detailed diagrams, this insightful volume offers serious students a comprehensive understanding of the fundamentals of geometry, including geometric shapes, axioms, and formulas. In addition, it covers some of the field's most illustrious minds, from Euclid to Wendelin Werner, figures who have helped produce the various branches of geometry as we know them today. This enlightening volume will help students understand the principles of geometry, and also the fascinating story behind the numbers.

The Britannica Guide to Geometry

Mathematizing Space

The Metaphysics of the Pythagorean Theorem

An Introduction to Philosophical Issues and Achievements

Descartes' Transformation of the Early Modern Concept of Construction

Imagination and Art: Explorations in Contemporary Theory

*A history of ancient literary culture told through the quantitative facts of canon, geography, and scale.*

*The History of Mathematics: A Source-Based Approach is a comprehensive history of the development of mathematics. This, the first volume of the two-volume set, takes readers from the beginning of counting in prehistory to 1600 and the threshold of the discovery of calculus. It is notable for the extensive engagement with original—primary and secondary—source material. The coverage is worldwide, and embraces developments, including education, in Egypt, Mesopotamia, Greece, China, India, the Islamic world and Europe. The emphasis on astronomy and its historical relationship to mathematics is new, and the presentation of every topic is informed by the most recent scholarship in the field. The two-volume set was designed as a textbook for the authors' acclaimed year-long course at the Open University. It is, in addition to being an innovative and insightful textbook, an invaluable resource for students and scholars of the history of mathematics. The authors, each among the most distinguished mathematical historians in the world, have produced over fifty books and earned scholarly and expository prizes from the major mathematical societies of the English-speaking world.*

*This collection, with contributions from leading philosophers, places analytic philosophy in a broader context comparing it with the methodology of its most important rival tradition in twentieth-century philosophy—phenomenology, whose development parallels the development of analytic philosophy in many ways. The Analytic Turn will be of great interest to historians of philosophy*

*generally, analytic philosophers, and phenomenologists.*

*We access Greek and Roman scientific ideas mainly through those texts which happen to survive. By concentrating only on the ideas conveyed, we may limit our understanding of the meaning of those ideas in their historical context. Through considering the diverse ways in which scientific ideas were communicated, in different types of texts, we can uncover otherwise hidden meanings and more fully comprehend the historical contexts in which those ideas were produced and shared, the aims of the authors and the expectations of ancient readers. Liba Taub explores the rich variety of formats used to discuss scientific, mathematical and technical subjects, from c.700 BCE to the sixth century CE. Each chapter concentrates on a particular genre – poetry, letter, encyclopaedia, commentary and biography – offering an introduction to Greek and Roman scientific ideas, while using a selection of ancient writings to focus on the ways in which we encounter them.*

*Geometry*

*The History of Mathematics: A Source-Based Approach: Volume 1*

*Scale, Space, and Canon in Ancient Literary Culture*

*Classics in the History of Greek Mathematics*

*Thales, Pythagoras, Engineering, Diagrams, and the Construction of the Cosmos out of Right Triangles*

*The Ancient Tradition of Geometric Problems*

The second edition of a unique introductory text, offering an account of the logical tradition in philosophy and its influence on contemporary scientific disciplines. Thinking Things Through offers a broad, historical, and rigorous introduction to the logical tradition in philosophy and its contemporary significance. It is unique among introductory philosophy texts in that it considers both the historical development and modern fruition of a few central questions. It traces the influence of philosophical ideas and arguments on modern logic, statistics, decision theory, computer science, cognitive science, and public policy. The text offers an account of the history of speculation and argument, and the development of theories of deductive and probabilistic reasoning. It considers whether and how new knowledge of the world is possible at all, investigates rational decision making and causality, explores the nature of mind, and considers ethical theories. Suggestions for reading, both historical and contemporary, accompany most chapters. This second edition includes four new chapters, on decision theory and causal relations, moral and political theories, "moral tools" such as game theory and voting theory, and ethical theories and their relation to real-world issues. Examples have been updated throughout, and some new material has been added. It is suitable for use in advanced undergraduate and beginning graduate classes in philosophy, and as an ancillary text for students in computer science and the natural sciences.

This transdisciplinary project represents the most comprehensive study of imagination to date. The eclectic group of international scholars who comprise Imagination and Art propose bold and innovative theoretical frameworks for (re-) conceptualizing imagination in all of its divergent forms.

The present volume provides a fascinating overview of geometrical ideas and perceptions from the earliest cultures to the mathematical and artistic concepts of the 20th century. It is the English translation of the 3rd edition of the well-received German book "5000 Jahre Geometrie," in which geometry is presented as a chain of developments in cultural history and their interaction with architecture, the visual arts, philosophy, science and engineering. Geometry originated in the ancient cultures along the Indus and Nile Rivers and in Mesopotamia, experiencing its first "Golden Age" in Ancient Greece. Inspired by the Greek mathematics, a new germ of geometry blossomed in the Islamic civilizations. Through the Oriental influence on Spain, this knowledge later spread to Western Europe. Here, as part of the medieval Quadrivium, the understanding of geometry was deepened, leading to a revival during the Renaissance. Together with parallel achievements in India, China, Japan and the ancient American cultures, the European approaches formed the ideas and branches of geometry we know in the modern age: coordinate methods, analytical geometry, descriptive and projective geometry in the 17th and 18th centuries, axiom systems, geometry as a theory with multiple structures and geometry in computer sciences in the 19th and 20th centuries. Each chapter of the book starts with a table of key historical and cultural dates and ends with a summary of essential contents of geometry in the respective era. Compelling examples invite the reader to further explore the problems of geometry in ancient and modern times. The book will appeal to mathematicians interested in Geometry and to all readers with an interest in cultural history. From letters to the authors for the German language edition I hope it gets a translation, as there is no comparable work. Prof. J. Grattan-Guinness (Middlesex University London) "Five Thousand Years of Geometry" - I think it is the most handsome book I have ever seen from Springer and the inclusion of so many color plates

really improves its appearance dramatically! Prof. J.W. Dauben (City University of New York) An excellent book in every respect. The authors have successfully combined the history of geometry with the general development of culture and history. ... The graphic design is also excellent. Prof. Z. Nádenik (Czech Technical University in Prague)

The Reader's Guide to the History of Science looks at the literature of science in some 550 entries on individuals (Einstein), institutions and disciplines (Mathematics), general themes (Romantic Science) and central concepts (Paradigm and Fact). The history of science is construed widely to include the history of medicine and technology as is reflected in the range of disciplines from which the international team of 200 contributors are drawn.

Digital Geometry

History of Mathematics

Science Writing in Greco-Roman Antiquity

Theoretical and Historical Issues

Pappus of Alexandria and the Mathematics of Late Antiquity

5000 Jahre Geometrie

The analysis of Euclidean space is well-developed. The classical Lie groups that act naturally on Euclidean space-the rotations, dilations, and translations-have both shaped and guided this development. In particular, the Fourier transform and the theory of translation invariant operators (convolution transforms) have played a central role in this analysis. Much modern work in analysis takes place on a domain in space. In this context the tools, perforce, must be different. No longer can we expect there to be symmetries. Correspondingly, there is no longer any natural way to apply the Fourier transform.

Pseudodifferential operators and Fourier integral operators can play a role in solving some of the problems, but other problems require new, more geometric, ideas. At a more basic level, the analysis of a smoothly bounded domain in space requires a great deal of preliminary spadework. Tubular neighborhoods, the second fundamental form, the notion of "positive reach", and the implicit function theorem are just some of the tools that need to be invoked regularly to set up this analysis. The normal and tangent bundles become part of the language of classical analysis when that analysis is done on a domain.

Many of the ideas in partial differential equations-such as Egorov's canonical transformation theorem-become rather natural when viewed in geometric language. Many of the questions that are natural to an analyst-such as extension theorems for various classes of functions-are most naturally formulated using ideas from geometry.

This book is at once an analytical study of one of the most important mathematical texts of antiquity, the Mathematical Collection of the fourth-century AD mathematician Pappus of Alexandria, and also an examination of the work's wider cultural setting. An important first chapter looks at the mathematicians of the period and how mathematics was perceived by people at large. The central chapters of the book analyse sections of the Collection, identifying features typical of Pappus's mathematical practice. The final chapter draws together the various threads and presents a fuller description of Pappus's mathematical 'agenda'. This is one of few books to deal extensively with the mathematics of Late Antiquity. It sees Pappus's text as part of a wider context and relates it to other contemporary cultural practices and opens avenues to research into the public understanding of mathematics and mathematical disciplines in antiquity.

Oxford Studies in Ancient Philosophy is a volume of original articles on all aspects of ancient philosophy. The articles may be of substantial length, and include critical notices of major books. OSAP is now published twice yearly, in both hardback and paperback. "Have you seen the latest OSAP?" is what scholars of ancient philosophy say to each other when they meet in corridors or on coffee breaks. Whether you work on Plato or Aristotle, on Presocratics or sophists, on Stoics, Epicureans, or Sceptics, on Roman philosophers or Greek Neoplatonists, you are liable to find OSAP articles now dominant in the bibliography of much serious published work in your particular subject: not safe to miss." - Malcolm Schofield, Cambridge University "OSAP was founded to provide a place for long pieces on major issues in ancient philosophy. In the years since, it has fulfilled this role with great success, over and over again publishing groundbreaking papers on what seemed to be familiar topics and others surveying new ground to break. It represents brilliantly the vigour - and the increasingly broad scope - of scholarship in ancient philosophy, and shows us all how the subject should flourish." - M.M. McCabe, King's College London

More than a study of shapes and angles, geometry reflects an amalgamation of discoveries over time. This book not only provides readers with a comprehensive understanding of geometric shapes, axioms, and formulas, it presents the field's brilliant minds from Euclid to Wendelin Werner and many in between whose works reflect a progression of mathematical thought throughout the centuries and have helped produce the various branches of geometry as they are known today. Detailed diagrams illustrate various concepts and help make geometry accessible to all.

Projective Geometry and Projective Metrics

11th International Conference, Diagrams 2020, Tallinn, Estonia, August 24–28, 2020, Proceedings

Thinking Things Through, second edition

Texts and Contexts in Ancient and Medieval Science

Mathematics in History and Culture

A Supplement

Euclidean plane geometry is one of the oldest and most beautiful topics in mathematics. Instead of carefully building geometries from axiom sets, this book uses a wealth of methods to solve problems in Euclidean geometry. Many of these methods arose where existing techniques proved inadequate. In several cases, the new ideas used in solving specific problems later developed into independent areas of mathematics. This book is primarily a geometry textbook, but studying geometry in this way will also develop students' appreciation of the subject and of mathematics as a whole. For instance, despite the fact that the analytic method has been part of mathematics for four centuries, it is rarely a tool a student considers using when faced with a geometry problem. Methods for Euclidean Geometry explores the application of a broad range of mathematical topics to the solution of Euclidean problems.

Explores Thales's speculative philosophy through a study of geometrical diagrams. Bringing together geometry and philosophy, this book undertakes a strikingly original study of the

origins and significance of the Pythagorean theorem. Thales, whom Aristotle called the first philosopher and who was an older contemporary of Pythagoras, posited the principle of a unity from which all things come, and back into which they return upon dissolution. He held that all appearances are only alterations of this basic unity and there can be no change in the cosmos. Such an account requires some fundamental geometric figure out of which appearances are structured. Robert Hahn argues that Thales came to the conclusion that it was the right triangle: by recombination and repackaging, all alterations can be explained from that figure. This idea is central to what the discovery of the Pythagorean theorem could have meant to Thales and Pythagoras in the sixth century BCE. With more than two hundred illustrations and figures, Hahn provides a series of geometric proofs for this lost narrative, tracing it from Thales to Pythagoras and the Pythagoreans who followed, and then finally to Plato's *Timaeus*. Uncovering the philosophical motivation behind the discovery of the theorem, Hahn's book will enrich the study of ancient philosophy and mathematics alike. At Southern Illinois University Carbondale, Robert Hahn is Professor of Philosophy and Director of the Ancient Legacies Program, through which he leads traveling seminars to Greece, Turkey, and Egypt. He is the author of *Archaeology and the Origins of Philosophy*; *Anaximander in Context: New Studies in the Origins of Greek Philosophy* (with Dirk L. Couprie and Gerard Naddaf); and *Anaximander and the Architects: The Contributions of Egyptian and Greek Architectural Technologies to the Origins of Greek Philosophy*, all published by SUNY Press.

Oxford Studies in Ancient Philosophy

Proceedings of an International Conference held at Syracuse, Italy, June 8-10, 2010

A Course in Modern Geometries