

**AGNESI, Maria.** *Instituzioni Analitiche*. Milan, 1748. The first book on mathematics to be published by a woman in her own name, and the first textbook incorporating the new mathematics of the period. This work won immediate acclaim in academic circles all over Europe and brought recognition as a mathematician to Agnesi. (Honeyman 20). \$6,500

**AMPÈRE, André.** *Mémoires sur l'action mutuelle de deux courans électriques*. Paris, 1820. The very rare separate printing of the founding paper of electrodynamics. (Dibner 62). \$10,000

**ARCHIMEDES.** *Opera, quae quidem extant, omnia*. Basel, 1544. Editio princeps of the greatest classical work on mathematics and mechanics. A fine copy in contemporary binding. (PMM 72). \$85,000

**ARCHIMEDES.** *De iis quae vehuntur in aqua libri duo*. Bologna, 1565. First edition of Archimedes' two great books on hydrostatics. Bound with Commandino's pioneer treatise on centers of gravity, which influenced Cavalieri. A fine copy. (Bibliotheca Mechanica 78). \$9,000

**ARISTARCHUS.** *De magnitudinibus, et distantis solis et lunae*. Pesaro, 1572. First complete edition and the sole extant work of the first proponent of a heliocentric system. This work is "the first attempt to determine astronomical distances and dimensions by mathematical deductions based upon a set of assumptions." (DSB). A magnificent copy bound in 17<sup>th</sup> century calf with crowned monogram of Gaston, Duke of Orléans. \$18,000

**ARRHENIUS, Svante.** *On the Influence of the Carbonic Acid in the Air upon the Temperature of the Ground. [with:] Ueber die Wärmeabsorption durch Kohlensäure*. London/Leipzig, 1896/1901. True offprints (the printings issued by the Swedish Academy are often mistakenly identified as separates/offprints) of his two milestone papers on the greenhouse effect and global warming. (Parkinson 433). \$15,000

**AUMANN, Robert.** *Existence of Competitive Equilibria in Markets with a Continuum of Traders*. Santa Monica, 1964. Rare pre-print of this famous paper reprinted in Kuhn's *Classics in Game Theory*. In this work, later published in *Econometrica 1966*, Aumann showed the existence of equilibria in his model of markets with 'perfect competition' (i.e., with a continuum of participants). Aumann's model forms a cornerstone in modern economic analysis. Fine, original wrappers. \$3,000

**BARDEEN, J. & BRATTAIN, W.** *Physical Principles Involved in Transistor Action*. New York, 1949. The first comprehensive report on the transistor, one of the most important inventions of the 20<sup>th</sup> century. A fine copy in original wrappers. (OOC 450). \$2,500

**BERNOULLI, Daniel.** *Exercitationes quaedam mathematicae*. Venice, 1724. His first mathematical publication. As a result of the success of this treatise, on differential equations and the physics of water flow, Daniel was appointed to the Academy of Sciences in St. Petersburg. A beautiful copy on thick paper, contemporary vellum. Rare. \$6,800

**BETTINI, Mario.** *Aerarium Philosophiae Mathematicae*. Bologna, 1648. The Macclesfield copy, printed on thick paper, of the first edition of this compendious scholastic mathematical work by the Jesuit mathematician Mario Bettini (1582-1657), encompassing all the major fields of mathematics, but paying special attention to geometry. \$20,000

**BILLY, Jacques de.** *Diophantus geometra sive opus contextum ex arithmetica et geometria simul*. Paris, 1660. First edition of this work on the indeterminate problems of Diophantus' *Arithmetica*. Billy corresponded actively with Fermat on number theory, and it is mainly through his collection of letters from Fermat, published as '*Doctrinae Analyticae inventum novum*' in the 1670 edition of Bachet's Diophantus, that we know of Fermat's methods for solving Diophantine equations. \$16,000

**BOHR, Niels.** *On the Quantum Theory of Line-Spectra, I-III*. Copenhagen, 1918-22. Nobel laureate Percy W. Bridgeman's annotated copy. Besides Bohr's derivation of the Balmer formula (1913) this work, in which he first gave a clear formulation of his 'correspondence principle', is by many considered to be his greatest contribution to physics. A fine set in wrappers. \$9,000

**BOOLE, George.** *An Investigation of the Laws of Thought*. London, 1854. A fine copy in publisher's cloth of the rare first issue. In this work the author gave the first proper presentation of Boolean algebra, "which enabled more advances in logic to be made in the decades of the nineteenth century than in the twenty-two centuries preceding." (OOC 224). \$12,850

**BRIGGS, Henry.** *Arithmetica logarithmica sive logarithmorum chiliades triginta, ...* London, 1624. A fine copy of the first extensive tables of base-ten logarithms, and containing the first case of the binomial theorem for non-integer exponents (40 years before Newton). Napier had introduced logarithms a decade before but in a different form which did not have the important property that the logarithm of 1 is zero, an improvement suggested by Briggs. (Norman 339). \$10,300

**BUSH, Vannevar.** *As We May Think*. Boston, 1945. Extremely rare offprint of Bush's celebrated paper credited for originating the idea of hypertext and, by extension, providing many of the theoretical underpinnings for the World Wide Web. (OOC 519: ordinary journal issue). We can locate no copy of the offprint issue in any library or other collection. Fine, self-wrappers. \$12,500

**COMMANDINO, Frederigo.** *Ptolomaei Planisphaerium. Jordani Planisphaerium. Federici Commandini ... Commentarius*. Venice, 1558. First edition of Commandino's commentary on the *Planisphere* of Ptolemy. Commandino's introductory text represents "the first example of an entirely geometrical and rigorous approach to perspective." (Andersen 141; Honeyman 2557). A fine copy, contemporary vellum. \$8,800

**CONDORCET, Marquis de.** *Essai sur l'Application de l'Analyse a la Probabilité des Décisions Rendues à la Pluralité des Voix*. Paris, 1785. First edition of the founding work of voting theory, and the first large-scale attempt to apply mathematics to knowledge of human phenomena. In this work Condorcet developed a scheme for an electoral body the purpose of which would be to determine the truth about a given subject by the process of voting. In his analysis Condorcet described several now famous results, including Condorcet's jury theorem, his voting paradox, and the Condorcet election method. Rare. \$10,000

**COURNOT, Antoine-Augustin.** *Recherches sur les Principes Mathématiques de la Théorie des Richesses*. Paris, 1838. First edition of the founding work of mathematical economics. "If a symbolic date were to be chosen for the birth of mathematical economics, our profession, in rare unanimous agreement, would select 1838, the year in which Augustin Cournot published his *Recherches*". (Nobel lecture of Gerard Debreu). A very good copy with the often lacking folding plate. \$12,800

**DESCARTES, René.** *Discours de la methode pour bien conduire sa raison, & chercher la verité dans les sciences*. Leiden, 1637. The birth of coordinate geometry, designated by John Stuart Mill as "the greatest single step ever made in the progress of exact sciences". 20<sup>th</sup> century full black morocco. (PMM 129; Horblit 24; Evans 5; Dibner 81). \$72,000

**DIOPHANTUS.** *Arithmeticon libri sex, et de numeris multangulis liber unus*. Paris, 1621. Editio princeps of the first systematic treatise on algebra. Parts of the text had been published by Xylander in Latin translation in 1575. Here the full Greek text appears for the first time, with parallel Latin text and the commentaries by Bachet. It was this edition that Fermat worked with and in the margin of his copy scribbled his famous last theorem. Contemporary calf. (Honeyman 891) \$14,000

**EINSTEIN, Albert.** *Über das Relativitätprinzip und die aus demselben gezogenen Folgerungen*. Leipzig, 1908. One of Einstein's most important works, the first to contain explicit statements both of the equivalence of inertial and gravitational mass and of the equation for mass in terms of energy,  $E=mc^2$ . A fine unopened copy in wrappers. \$6,800

**FARADAY, Michael.** *Experimental researches in electricity: 1. On the induction of electric currents; 2. On the evolution of electricity from magnetism; 3. On a new electrical condition of matter; 4. On Arago's magnetic phenomena*. London, 1832. Faraday's greatest paper, reporting his discovery of the means for generating electricity by electro-magnetic induction. Unbound sheets of the complete volume of the *Phil. Trans.* (Evans 39; Dibner 64; Norman 778). \$8,500

**FERMAT, Pierre de.** *Varia Opera Mathematica*. Toulouse, 1679. The first publication of his important researches in analytical geometry, the methods of maxima and minima, and probability. Fermat shares with Descartes the innovation of analytical geometry. He, independently, represented a curve by an equation defining its characteristic properties. Rare. (Evans 6; Horblit 30; Dibner 108). \$42,500

**FEYNMAN, Richard.** *Space-Time Approach to Non-Relativistic Quantum Mechanics*. Lancaster, 1948. First printing of Feynman's path-integral formalism; the basis for his later famous 'Feynman diagrams'. A fine copy in wrappers. \$4,000

**GÖDEL, Kurt.** *Ergebnisse eines mathematischen Kolloquiums. I-V*. Leipzig, Teubner, 1931-33. A mint set in wrappers of these rare proceedings to which Gödel contributed thirteen important papers and remarks on the foundations of logic and mathematics. \$10,000

**GÖDEL, Kurt.** *Diskussion zur Grundlegung der Mathematik*. Leipzig: Meiner, 1931. First printing of the Königsberg conference in September 1930 where Gödel announced his famous first incompleteness theorem. Fine, wrappers. \$3,400

**GÖDEL, Kurt.** *The Consistency of the Axiom of Choice and the Generalized Continuum-Hypothesis. [with:] Consistency-Proof for the Generalized Continuum-Hypothesis*. Easton, 1938-39. Two offprints. "Aside from the completeness and incompleteness theorems, Gödel's consistency proofs in set theory are his most celebrated results." (Dawson). In this work he proved that if an axiomatic system of set theory of the type proposed by Russell and Whitehead in the *Principia Mathematica* is consistent, then it will remain so when the axiom of choice and the generalized continuum hypothesis are added to the system. Very rare. \$20,000

**GREGORY, David.** *Astronomiae Physicae & Geometricae Elementa*. Oxford, 1702. The first text book of astronomy based on Newtonian principles, and the first printings of Newton's lunar theory and his "classical scholia". A fine copy, contemporary calf. (Babson 71; Gray 87). \$5,000

**HAMILTON, William.** *Lectures on Quaternions*. Dublin, 1853. Presentation copy, inscribed by Hamilton. "Quaternions were the first non-commutative number system to be investigated in detail, and Hamilton's discovery that a consistent and useful system of algebra could be constructed without obeisance to the commutative law of multiplication was comparable in importance to the invention of non-Euclidean geometry." (PMM 334). \$8,000

**HERBRAND, Jacques.** *Thèses présentées à la Faculté des Sciences de Paris.* Warsaw, 1930. A fine copy, in wrappers, of his doctoral dissertation - a seminal work in mathematical logic. Reprinted in Van Heijenoort's *From Frege to Gödel*. In this work he proved the Herbrand theorem, the most fundamental result in quantification theory. \$4,350

**HILBERT, David.** *Neubegründung der Mathematik. [with:] Über das Unendliche.* Hamurg/Berlin, 1922/26. Author's presentation offprint issue of the paper in which Hilbert first introduced his program for the foundations of mathematics, i.e., the *Hilbert Program*. Together with the most detailed exposition of his scheme. Reprinted in Van Heijenoort's *From Frege to Gödel*. Both fine, wrappers and self-wrappers. \$16,000

**HILBERT, David.** *Die Theorie der algebraischen Zahlkörper.* Berlin, 1897. First edition of the bible of algebraic number theory, referred to as the *Zahlbericht*. (Landmark Writings in Western Mathematics, No. 54). A fine copy from the library of mathematician Georg Bohlmann. \$2,800

**HODGKIN, Dorothy.** *Structure of Vitamin B<sub>12</sub>. [with:] The X-ray Crystallographic Investigation of the Structure of Penicillin* [with: six other offprints]. London, 1956-57/1949. Inscribed offprints, to crystallographer Jack Duntiz, of her most important papers, in which she solved the molecular structure of penicillin and vitamin B<sub>12</sub>, the last which revealed the existence of a hitherto-unsuspected chemical grouping, the corrin nucleus. Lawrence Bragg compared these achievements with 'breaking the sound barrier', and in 1964 she received the Nobel Prize for this work. \$6,500

**HUYGENS, Christian.** *Traité de Lumière.* Leyden, 1690. First edition of Huygen's pathbreaking exposition of his wave theory of light. A fine copy, contemporary vellum. (Horblit 54; Dibner 146; Evans 32). \$48,500

**JORDANUS, Nemorarius.** *De Elementis Arithmetice Artis.* Paris, 1514. Second edition (first printed 1496). Jordanus' *Arithmetica* was the standard source for number theory in the Middle Ages. (Honeyman 1767). \$13,200

**KEPLER, Johannes.** *Epistolae ad Joannem Kepplerum.* Frankfurt, 1718. An exceptional copy, in the original publisher's interim boards, of the first printing of Kepler's scientific correspondence, edited by Michael Gottlieb Hansch. Rare. (Caspar 102). \$24,500

**KEPLER, Johannes.** *Tabulae manuales logarithmicae ad calculum astronomicum, in specie Tabb. Rudolphinarum compendioso tractandum mire utiles.* Strasbourg, 1700. Rare second edition (the first obtainable) of the logarithmic tables used in calculating the celebrated Rudolphine Tables. A fine copy, contemporary vellum with clasps. (Caspar 99). \$15,250

**LAGRANGE, Joseph Louis.** *Mécanique analytique.* Paris, 1788. First edition. The work in which Lagrange discovered the general equations of motions of any system of bodies. "Perhaps the most beautiful mathematical treatise in existence" (Evans 10; Horblit 61). Contemporary calf. \$15,500

**LAPLACE, Pierre Simon.** *Théorie analytique des probabilités.* Paris, 1812. First edition of the founding work of probability theory. A very good copy. Rare. (Evans 12; Honeyman 1923). \$40,000

**LEIBNIZ, Gottfried.** *Nova Methodus pro Maximis et Minimis.* Leipzig, 1684. First announcement of Leibniz' discovery of the differential calculus. A fine copy, contemporary calf. (PMM 160; Evans 7; Horblit 66a). \$19,000

**LOBACHEVSKY, Nikolai.** *Algebra ili vychislenie konechnykh.* Kazan, 1834. Presentation copy of the first Russian textbook of number theory in which Lobachevsky developed his radical approach to solving equations using a synthesis of geometrical and analytical systems. Inscribed by a publisher's clerk. Contemp. Russian calf, orig. wrappers bound in. \$35,000

**MAUROLICO, Francesco.** *Theodosii Sphaericorum Elementorum Libri III.* Messina, 1558. "Excessively rare" (Sotheran, 1918) first printing of Maurolico's Latin translations of works on spherical geometry by Euclid, Theodosius, Menelaus, and Autolycus, with his important commentaries, and a work of his own *De Sphaera Sermo*, and the first printed table of values for the trigonometric function of the secant. Fine, wide margins, contemporary vellum. Of great rarity on the market. \$40,000

**MANDELBROT, Benoit.** *Les Objets Fractals.* Paris, 1975. Presentation copy of the first book on fractals. Inscribed, with signed letter, from Mandelbrot to physicist Laszlo Tisza, asking for his opinion. At the time of its publication his book did not receive much recognition from the scientific community - "the good-and-bad reason may be that they know the book and hate it, but don't hate me enough to say so." (offered letter). His text has since been re-printed numerous times and translated into fourteen languages. Offered here with the first English edition. Both fine. \$8,500

**MINKOWSKI, Hermann.** *Die Grundgleichungen für die elektromagnetischen Vorgänge in bewegten Körpern.* Göttingen, 1908. The very rare offprint of the paper in which Minkowski first introduced the concept of four-dimensional space-time, which was essential for Einstein's development of general relativity. Not to be confused with the later summary of these ideas in *Raum und Zeit*, this paper ranks second only to Einstein's 1905 paper *Zur Elektrodynamik*. Wrappers. \$15,000

**NEWTON, Isaac.** *A Letter of Mr. Isaac Newton, ... containing his New Theory about Light and Colors [with:] An Account of a New Catadioptrical Telescope.* London, 1671-76. An exceptional collection comprising all, but one, of the "26 letters and replies in the controversy on Light published by the Society, 1671-1676" (Dibner, p.67). \$64,000

**NEWTON, Isaac.** *Principes Mathématiques de la Philosophie Naturelle.* Paris, 1759. Second edition (the first known in twelve copies) of the first French edition of Newton's *Principia*. A fine copy in contemporary calf. (Babson 28; Gray 38). \$14,000

**NEWTON, Isaac.** *The Method of Fluxions and Infinite Series.* London, 1736. Rare large paper copy, on thick paper, of Newton's *Methodus Fluxionum*, originally prepared in 1671, but remained unpublished until this English translation by John Colson. (Babson 171; Gray 232; Stanitz 46d (large paper) Norman 1595). Contemporary calf. \$52,000

**ØHM, Georg Simon.** *The Galvanic Circuit Investigated Mathematically.* London, 1841. First English edition of his great work *Die Galvanische Kette*, the discovery of the fundamental law of electrical circuits. Fine. \$4,500

**ØRSTED, H.C.** *Experimenta circa effectum.* Paris, 1820. The important first French edition. It was through Arago's demonstrations (published here with Ørsted's paper) to the Paris Academy that Ampère and Biot with Savart first learnt of Ørsted's results, and thus laid the foundations for the new field of electrodynamics. Fine, contemporary calf. \$6,800

**RAHN, Johann.** *Teutsche Algebra, Oder Algebraische Rechenkunst, zusamt ihrem Gebrauch.* Zürich, 1659. Rare first edition of this important algebra which contains the first use of ÷ in print as a sign of division, and the first use of ∴ for 'therefore'. (Cajori 211). Contemp. vellum. \$30,000

**RAMÓN Y CAJAL, Santiago.** *Textura del sistema nervioso del hombre y de los vertebrados.* Madrid, 1899-1904. Rare first edition. This "work provided the foundation for present concepts of the cellular composition of the nervous system." (Grolrier/Medicine 86). Contemporary calf. \$15,000

**RECORD, Robert.** *The Pathway to Knowledge containing the First Principles of Geometry.* London, 1551. The first book on Euclidean geometry ever printed in English. Very rare. (Kenney 3408; Honeyman 2589; but not among the Record works in Norman). \$50,000

**REGIOMONTANUS.** *De Triangulis Planis et Sphaericis Libri V.* Basel, 1561. Third augmented edition of Regiomontanus' *Trigonometry*, bound with the 1<sup>st</sup> ed. of Santbech's *Problematum Astronomicorum* and the 2<sup>nd</sup> of Peurbach's *Tractatus Super Propositiones*. Contemp. vellum. \$14,000

**RIESE, Adam.** *Rechenung nach der lenge, auff den Linihen und Feder.* Leipzig, 1550. First edition of "pobably the most popular commercial arithmetic of the sixteenth century. So firmly did it impress itself upon the schools that 'nach Adam Riese' is a common expression in Germany today. It was to Germany what Borghi's book was to Italy and Recorde's to England." (Rara Aritmetica 140; Norman 1834; Honeyman 2652). Fine, contemporary blind-stamped pigskin. \$16,000

**RÖNTGEN, Wilhelm.** *Ueber eine neue Art von Strahlen (Vorläufige Mittheilung).* 1895 [with:] *Eine neue Art von Strahlen. II. Mittheilung.* 1896 [with:] *Weitere Beobachtungen über die Eigenschaften der X-Strahlen (Dritte Mittheilung).* 1897. First two as offprints, the third a contemporary extract. Complete collection of Röntgen's three papers announcing his discoveries on X-Rays. (Norman 1841, 1842, and GM 2683). First two in original wrappers, the third in contemporary wrappers. \$20,000

**RUFFINI, Paolo.** *Teoria Generale delle Equazioni.* Bologna, 1799. Rare first edition. In this work Ruffini was the first to state, and to attempt a proof of, the Abel-Ruffini theorem (that the general equation of degree of five or higher cannot be solved algebraically). In his efforts he introduced many fundamental concepts in group theory (as permutations) which were essential to the later more complete proofs of Abel and Galois. \$4,800

**SMYTH, Henry DeWolf.** *A general Account of the Development of Methods of using Atomic Energy.* Washington, 1945. Advance lithographed version of the first official report of the Manhattan Project. (Norman 1962; PMM 422e). Signed by H. D. Smyth on the title. \$8,000

**SODDY, Frederick.** *The Interpretation of the Atom.* London, 1932. First edition, author's copy, heavily annotated throughout for a projected revised edition entitled *The Atomics*. Signed and dated 1947 by Soddy. \$8,500

**TURING, Alan.** *On Computable Numbers, with an Application to the Entscheidungsproblem [with:] A correction ...* London, 1936-37. A fine copy (not ex-library) of arguably the single most important theoretical work in the history of computing. (OOC 394). Fine, near contemp. cloth. \$25,000

**VIGENÈRE, Blaise de.** *Traicté des chiffres, ou secretes manières d'escrires.* Paris, 1587. First edition, second issue, of the most advanced book on cryptography of the 16<sup>th</sup> century. In this work Vigenère introduced his polyalphabetic cipher (where the keyword is repeated so that the value of each letter changes constantly). The Vigenère cipher, as it became known, was regarded as unbreakable for over 300 years, until Babbage and Kasiski devised a test to determine the length of the keyword. \$7,500

**VOLTA, Alessandro.** *On the Electricity excited by the mere Contact of conducting Substances of different kinds.* London, 1800. The first announcement of the voltaic 'pile', or electric battery. (PMM 255; Horblit 37b; Evans 35; Sparrow 193). Contemporary extract, uncut. \$11,200

**VON NEUMANN, John. & MORGENSTERN, Oskar.** *Theory of Games and Economic Behavior.* Princeton, 1944. The copy of distinguished mathematician Andrew M. Gleason who (together with Montgomery and Zippin) resolved Hilbert's Fifth Problem. (OOC 953). Without d.j. \$4,750

**WILKINS, John.** *Mercury, or the secret and swift Messenger.* London, 1641. First edition of "the most important of early English works on cryptography" (Galland, p.201). \$4,600