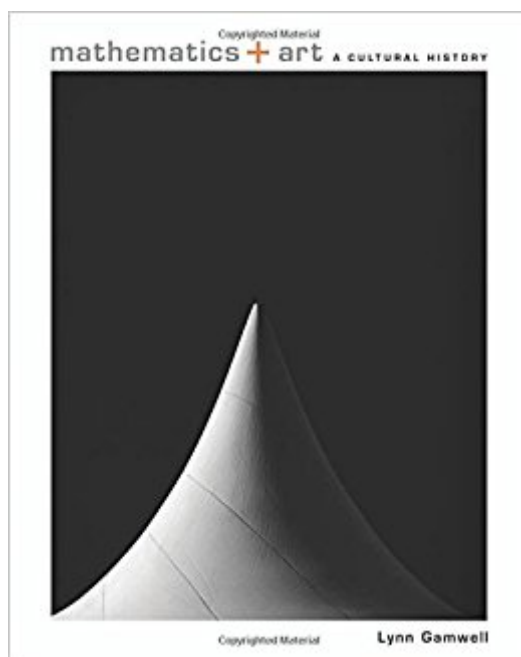


The book was found

# Mathematics And Art: A Cultural History



## Synopsis

This is a cultural history of mathematics and art, from antiquity to the present. Mathematicians and artists have long been on a quest to understand the physical world they see before them and the abstract objects they know by thought alone. Taking readers on a tour of the practice of mathematics and the philosophical ideas that drive the discipline, Lynn Gamwell points out the important ways mathematical concepts have been expressed by artists. Sumptuous illustrations of artworks and cogent math diagrams are featured in Gamwell's comprehensive exploration. Gamwell begins by describing mathematics from antiquity to the Enlightenment, including Greek, Islamic, and Asian mathematics. Then focusing on modern culture, Gamwell traces mathematicians' search for the foundations of their science, such as David Hilbert's conception of mathematics as an arrangement of meaning-free signs, as well as artists' search for the essence of their craft, such as Aleksandr Rodchenko's monochrome paintings. She shows that self-reflection is inherent to the practice of both modern mathematics and art, and that this introspection points to a deep resonance between the two fields: Kurt Gödel posed questions about the nature of mathematics in the language of mathematics and Jasper Johns asked "What is art?" in the vocabulary of art. Throughout, Gamwell describes the personalities and cultural environments of a multitude of mathematicians and artists, from Gottlob Frege and Benoît Mandelbrot to Max Bill and Xu Bing. *Mathematics and Art* demonstrates how mathematical ideas are embodied in the visual arts and will enlighten all who are interested in the complex intellectual pursuits, personalities, and cultural settings that connect these vast disciplines.

## Book Information

Hardcover: 576 pages

Publisher: Princeton University Press (November 17, 2015)

Language: English

ISBN-10: 0691165289

ISBN-13: 978-0691165288

Product Dimensions: 9.5 x 1.7 x 12.1 inches

Shipping Weight: 6.8 pounds (View shipping rates and policies)

Average Customer Review: 4.7 out of 5 stars [See all reviews](#) (6 customer reviews)

Best Sellers Rank: #151,051 in Books (See Top 100 in Books) #144 in [Books > Science & Math > Mathematics > History](#) #958 in [Books > Arts & Photography > History & Criticism > History](#) #41616 in [Books > Reference](#)

## Customer Reviews

Are you a mathematician and an art connoisseur? If you are, then this book is for you. Author by Lynn Gamwell, has written an outstanding book, that describes in plain English, together with clear symbols and cogent diagrams, the ideas that drive mathematics: numbers, infinity, geometry, and pattern. The author begins by with an overview of mathematics and art from prehistory to the culmination of the classical ideals and rationality, objectivity, and universalizable knowledge during the Enlightenment. Next, she debunks the widely held misconceptions that Euclid's mean and extreme ratio is the key to beautiful proportion; and, that it was used in major monuments of art history. Then, the author describes a distinctly Germanic version of the struggle between reason and intuition that played out as Enlightenment reason versus the Romantic imagination. Also, she describes David Hilbert's formalist conception of mathematics, as an axiomatic system: An internally consistent, self-contained arrangement of abstract, meaning-free, replaceable signs. Then, the author shows why Logicism was the premise of modern symbolic logic, as developed by the German logician Gottlob Frege and his heir. In addition, she covers how both Hilbert and Russell both held modern versions of Platonism; but, the leading intuitionist mathematician, the Dutchman L.E.J. Brouwer, declared that abstract objects exist only in the human mind. Also, the author focuses on how scientists described the symmetries of nature, mass and energy, by using the mathematics of group theory.

[Download to continue reading...](#)

Mathematics and Art: A Cultural History Edinburgh: A Cultural History (Interlink Cultural Histories) (Cities of the Imagination) History: Human History in 50 Events: From Ancient Civilizations to Modern Times (World History, History Books, People History) (History in 50 Events Series Book 1) History: British History in 50 Events: From First Immigration to Modern Empire (English History, History Books, British History Textbook) (History in 50 Events Series Book 11) A Station Favorable to the Pursuits of Science: Primary Materials in the History of Mathematics at the United States Military Academy (History of Mathematics, V. 18) Who Owns the Past? Cultural Policy, Cultural Property, and the Law (The Public Life of the Arts) Making a Nation, Breaking a Nation: Literature and Cultural Politics in Yugoslavia (Cultural Memory in the Present) Media and Cultural Studies (KeyWorks in Cultural Studies) Commodity Activism: Cultural Resistance in Neoliberal Times (Critical Cultural Communication) Mathematics and Its History (Undergraduate Texts in Mathematics) The Land of the Five Flavors: A Cultural History of Chinese Cuisine (Arts and Traditions of the Table: Perspectives on Culinary History) Japanese Confucianism: A Cultural

History (New Approaches to Asian History) Pastiche: Cultural Memory in Art, Film, Literature The Complete "Masters of the Poster": All 256 Color Plates from "Les Maîtres de l’Affiche" (Dover Fine Art, History of Art) Ert  s Fashion Designs (Dover Fine Art, History of Art) Native North American Art (Oxford History of Art) Knowing and Teaching Elementary Mathematics: Teachers’ Understanding of Fundamental Mathematics in China and the United States (Studies in Mathematical Thinking and Learning Series) Elementary and Middle School Mathematics: Teaching Developmentally (8th Edition) (Teaching Student-Centered Mathematics Series) Mathematics and the Imagination (Dover Books on Mathematics) Curvature in Mathematics and Physics (Dover Books on Mathematics)

[Dmca](#)