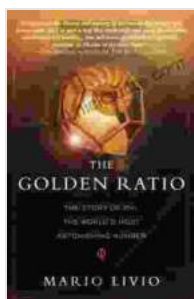


The Story of Phi: The World's Most Astonishing Number

Phi is an irrational number approximately equal to 1.618. It is often called the "golden ratio" because of its unique properties. Phi has been used in art, architecture, and design for centuries, and it has even been linked to the Fibonacci sequence and the human body.



The Golden Ratio: The Story of PHI, the World's Most Astonishing Number by Mario Livio

★★★★☆ 4.5 out of 5

Language : English
File size : 51280 KB
Text-to-Speech : Enabled
Screen Reader : Supported
Enhanced typesetting : Enabled
Word Wise : Enabled
Print length : 303 pages



History of Phi

The first known use of phi was in the 5th century BC by the Greek mathematician Hippasus. Hippasus discovered phi while studying the regular pentagon. He found that the ratio of the length of the diagonal of a regular pentagon to the length of its side is always the same. This ratio is equal to phi.

Phi was later studied by other Greek mathematicians, including Euclid and Plato. Euclid used phi to construct the golden rectangle, which is a

rectangle whose sides are in the ratio of phi to 1. Plato believed that phi was the most beautiful proportion, and he used it in the design of his ideal city, Atlantis.

In the Renaissance, phi was rediscovered by Italian mathematicians such as Leonardo da Vinci and Luca Pacioli. Da Vinci used phi in his paintings, including the Mona Lisa. Pacioli wrote a book about phi called *De Divina Proportione*, which was illustrated by da Vinci. This book helped to popularize phi among artists and architects.

Properties of Phi

Phi has a number of unique properties that make it special. First, phi is an irrational number. This means that it cannot be expressed as a fraction of two integers. Second, phi is a self-similar number. This means that it appears within itself when it is multiplied by itself or divided by itself. For example, phi multiplied by itself is equal to 1.6180339887... and divided by itself is equal to 0.6180339887... Third, phi is a transcendental number. This means that it cannot be constructed using any finite number of algebraic operations (addition, subtraction, multiplication, division, and exponentiation).

Applications of Phi

Phi has been used in art, architecture, and design for centuries. In art, phi has been used to create compositions that are aesthetically pleasing. In architecture, phi has been used to design buildings that are both beautiful and efficient. In design, phi has been used to create products that are both functional and attractive.

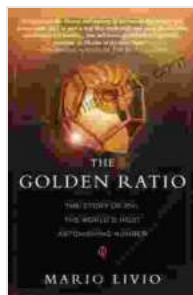
In addition to its applications in art, architecture, and design, phi has also been linked to the Fibonacci sequence and the human body. The Fibonacci sequence is a series of numbers where each number is the sum of the two preceding numbers. The Fibonacci sequence is often found in nature, and it has been linked to the growth of plants and animals. The human body also exhibits many of the proportions of phi, including the ratio of the length of the head to the length of the body and the ratio of the length of the forearm to the length of the upper arm.

Why Phi is the Most Astonishing Number

Phi is truly the most astonishing number in the world because of its unique properties and its wide range of applications. Phi is an irrational number, a self-similar number, and a transcendental number. It has been used in art, architecture, and design for centuries, and it has even been linked to the Fibonacci sequence and the human body. All of these factors make phi a truly remarkable number.

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A golden spiral, where each quarter turn is rotated by approximately 137.5 degrees, creating a logarithmic spiral with a growth factor of phi.



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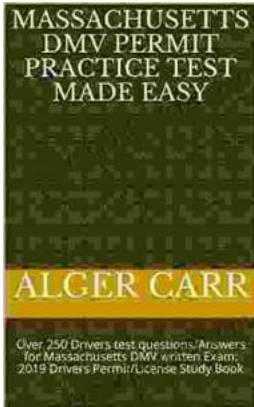
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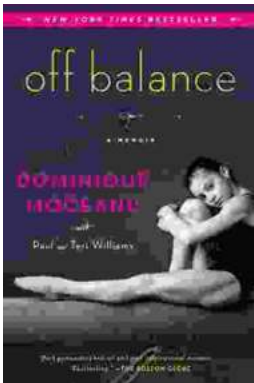
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