

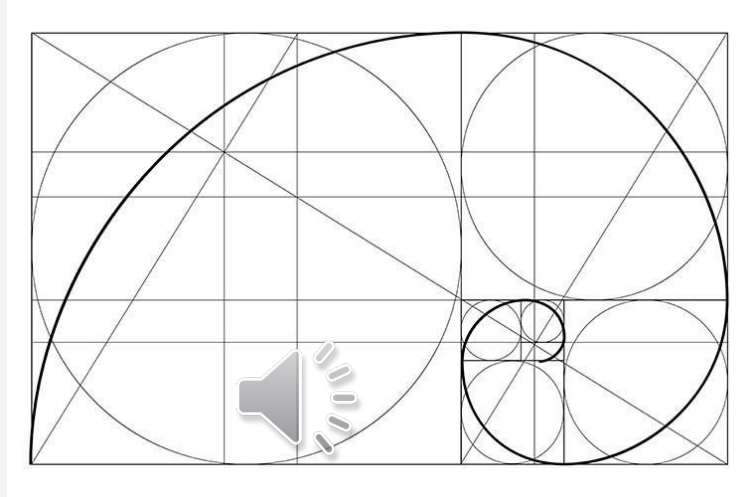
GOLDEN RATIO

MADE BY VIKTORIA MIKHAILOVICH

GROUP AM-28

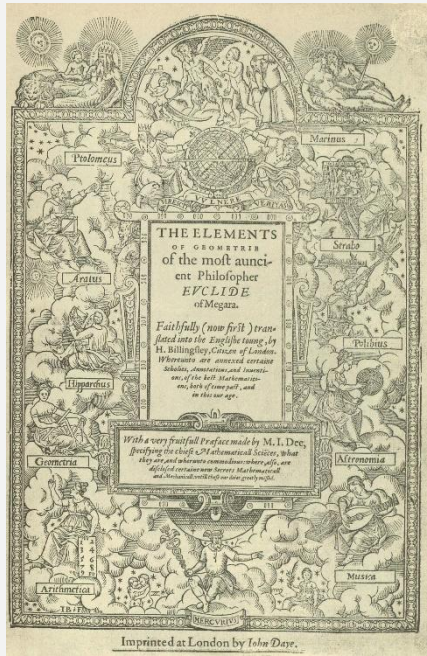
TEACHER A.V.YURIEVA

WHAT IS GOLDEN RATIO?

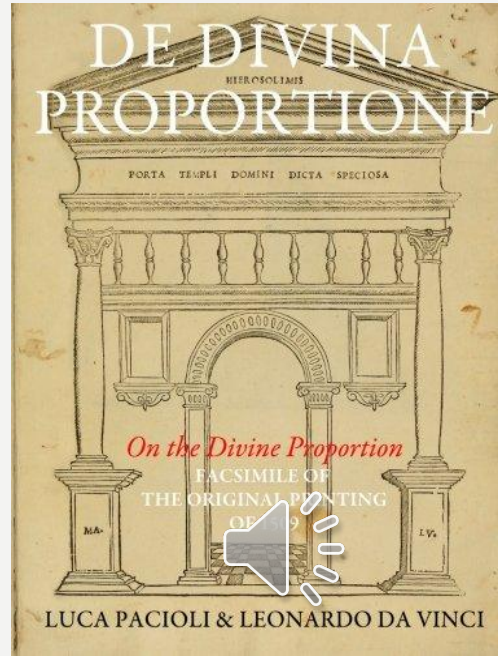


The golden ratio is also called the **golden mean** or **golden section** (Latin: *sectio aurea*). Other names include **extreme and mean ratio**, **medial section**, **divine proportion**, **divine section** (Latin: *sectio divina*), **golden proportion**, **golden cut**, and **golden number**.

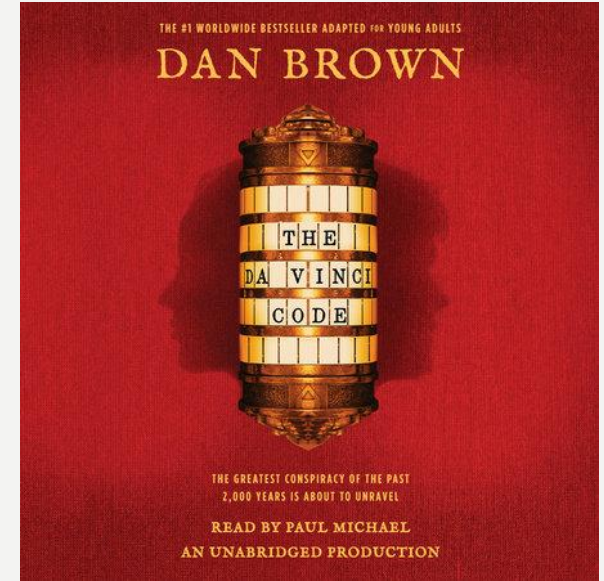
In mathematics, two quantities are in the **golden ratio** if their ratio is the same as the ratio of their sum to the larger of the two quantities. The figure on the right illustrates the geometric relationship. Expressed algebraically, for quantities a and b with $a > b > 0$,



“Elements” by Euclid



“De Divina Proportione” by Luca Pacioli, a contemporary of Leonardo Da Vinci

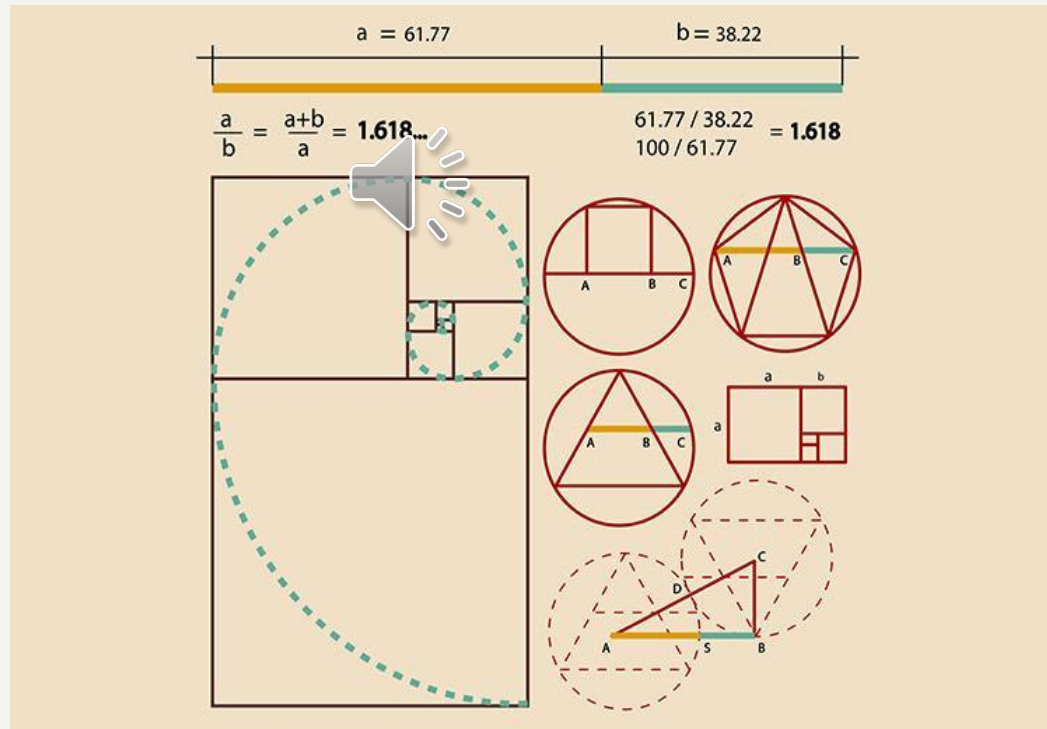


“The Da Vinci Code” by Dan Brown

The allure of “The Da Vinci Code” was that it creatively integrated fiction with both fact and myth from art, history, theology and mathematics, leaving the reader never really knowing what was truth and what was not.

MATHEMATICS OF THE GOLDEN RATIO

- This Golden Ratio truly is unique in its mathematical properties and pervasive in its appearance throughout nature. The “mathematically challenged” may be more interested in the appearances of Phi in nature, its application to art, architecture and design, and its potential for insights into the more spiritual aspects of life, but let’s begin with the purest of facts about Phi, which are found in mathematics.



- Pi or π (3.14...) is the ratio of the circumference of a circle to its diameter, Phi or φ (1.618 ...) is the Golden Ratio that results when a line is divided in one very special and unique way.

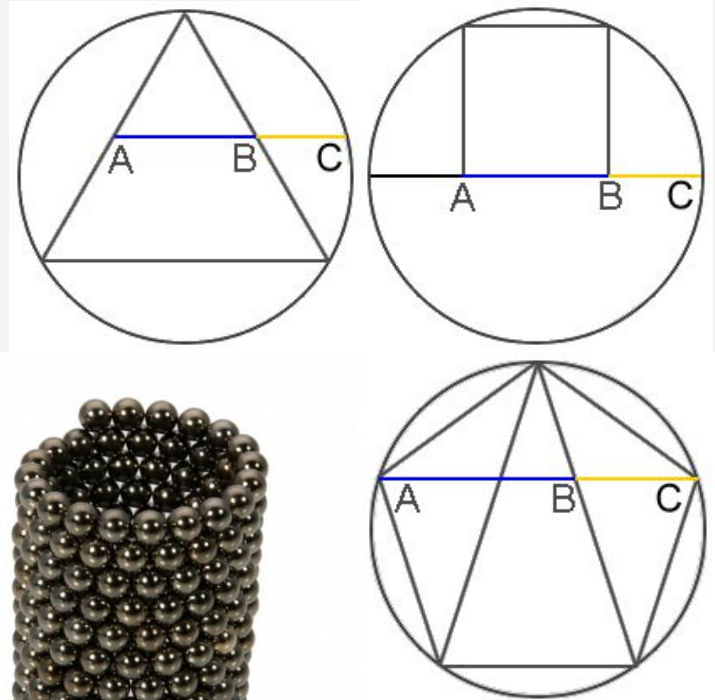
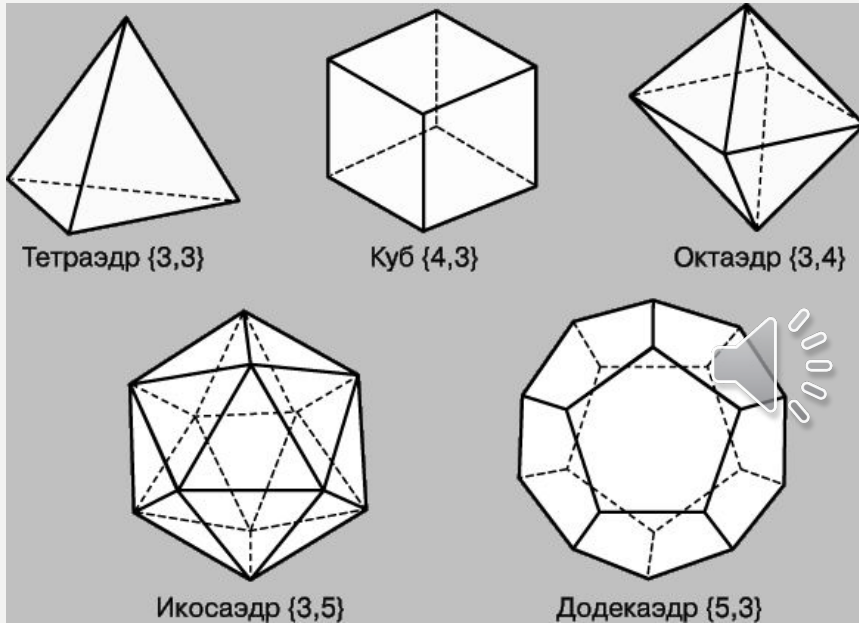


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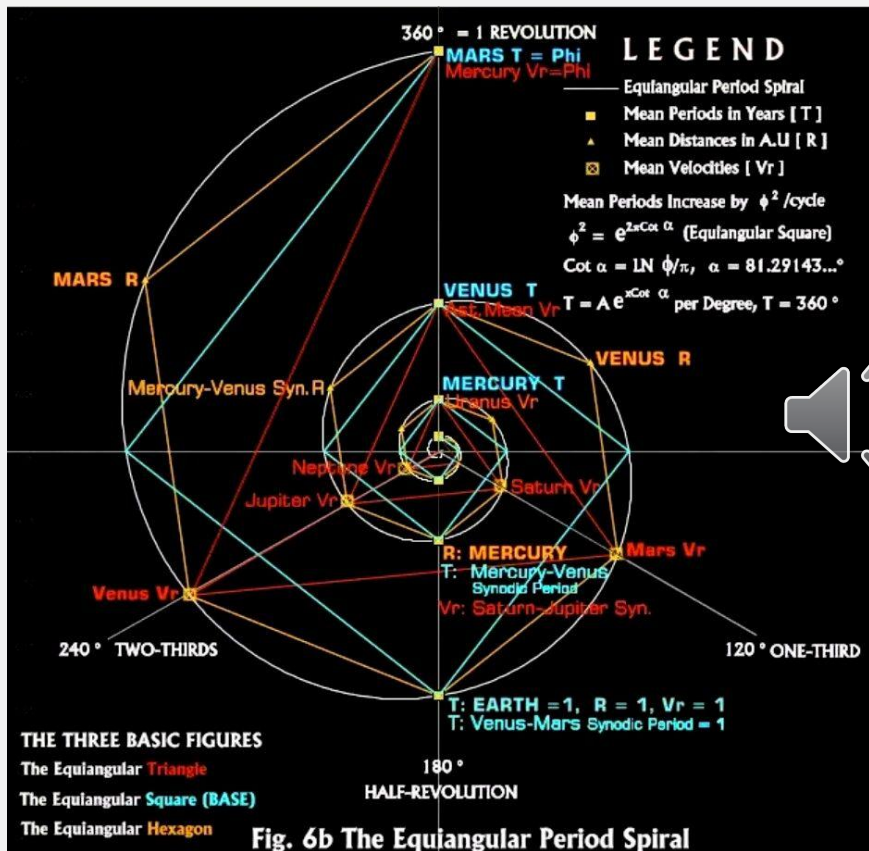


Ratio that results when a line is divided in one very special and unique way.

GEOMETRY OF THE GOLDEN RATIO

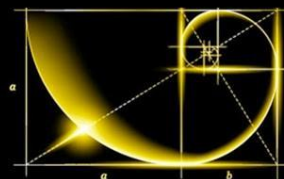


THE SOLAR SYSTEM AND UNIVERSE



ALL SOLAR SYSTEM PERIODS FIT THE FIBONACCI SERIES AND THE GOLDEN RATIO

PLANETS	LUCAS Series	PHI-SERIES Periods	PHI-SERIES PERIOD Decomposition	FIBON. Series
MARS	1	1.618033989	$\phi^1 = 1\phi + 0\phi^2$	1
Synodic	3 \Rightarrow	2.618033989	$\phi^2 = 0\phi + 1\phi^2$	2
M/J GAP	4 \Rightarrow	4.236067977	$\phi^3 = 1\phi + 1\phi^2$	3
Synodic	7 \Rightarrow	6.854101966	$\phi^4 = 1\phi + 2\phi^2$	5
JUPITER	11 \Rightarrow	11.09016994	$\phi^5 = 2\phi + 3\phi^2$	8
Synodic	18 \Rightarrow	17.94427191	$\phi^6 = 3\phi + 5\phi^2$	13
SATURN	29 \Rightarrow	29.03444185	$\phi^7 = 5\phi + 8\phi^2$	21
Synodic	47 \Rightarrow	46.97871376	$\phi^8 = 8\phi + 13\phi^2$	34
URANUS	76 \Rightarrow	76.01315562	$\phi^9 = 13\phi + 21\phi^2$	55
Synodic	123 \Rightarrow	122.9918694	$\phi^{10} = 21\phi + 34\phi^2$	89
NEPTUNE	199 \Rightarrow	199.0050250	$\phi^{11} = 34\phi + 55\phi^2$	144



$$\frac{a+b}{a} = \frac{a}{b} = 1.618$$

THANK YOU  FOR
WATCHING!