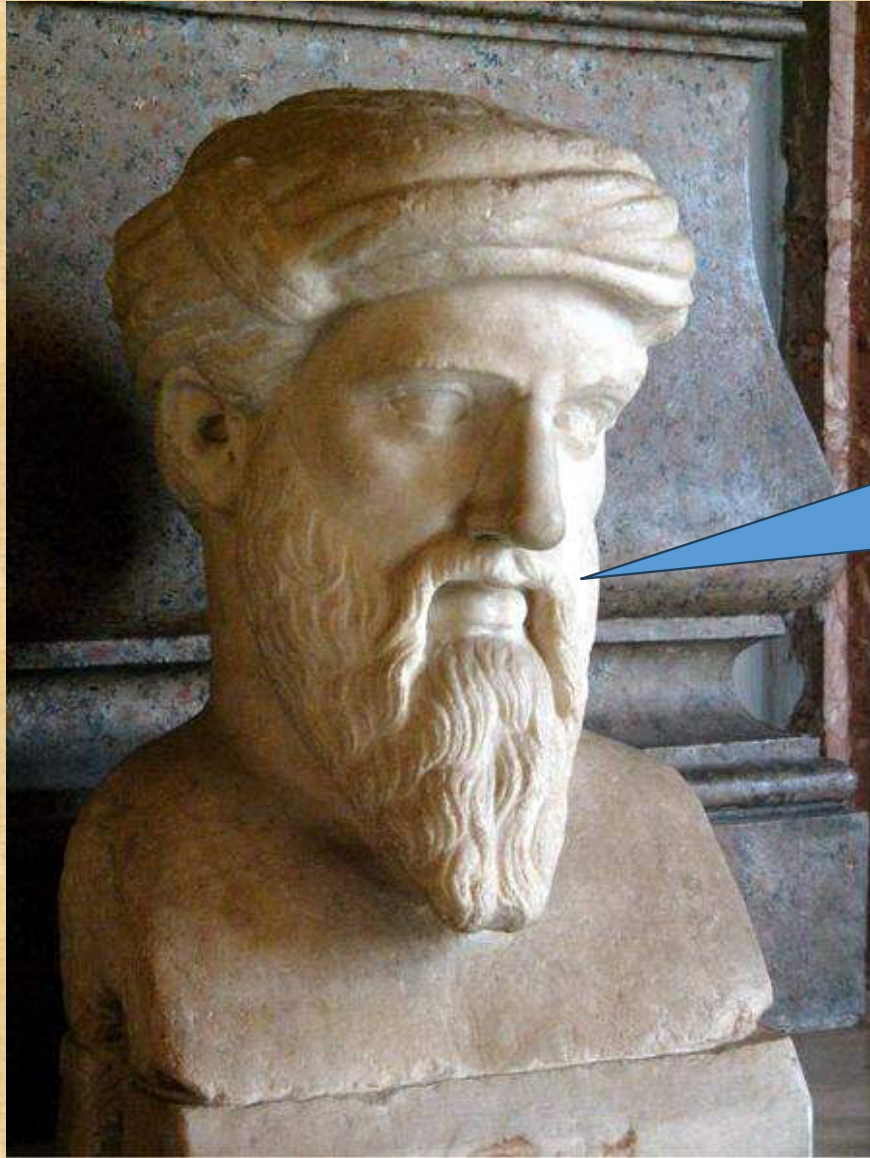


# **Het perfecte lichaam en de gulden snede: mythe en realiteit**

Woensdag 14 juni, studiedag Brainfeed

**Van kunst naar kunde**

Johan Braeckman  
Universiteit Gent



“Alles bestaat uit  
getallen/is de  
expressie van  
getallen/is  
wiskunde”



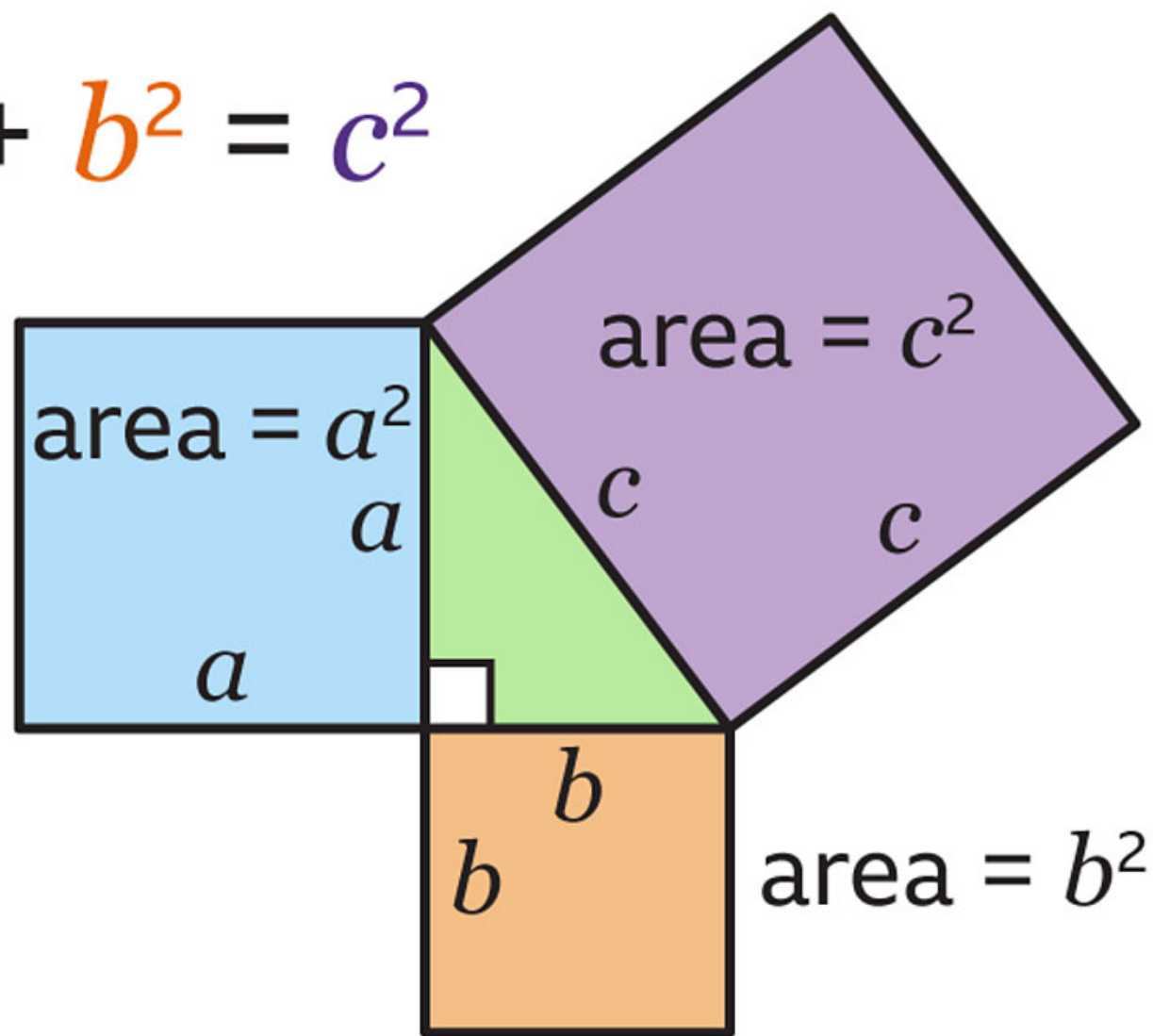
Pythagoras.

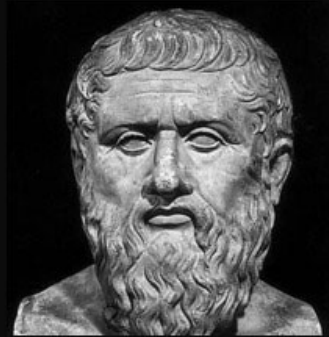
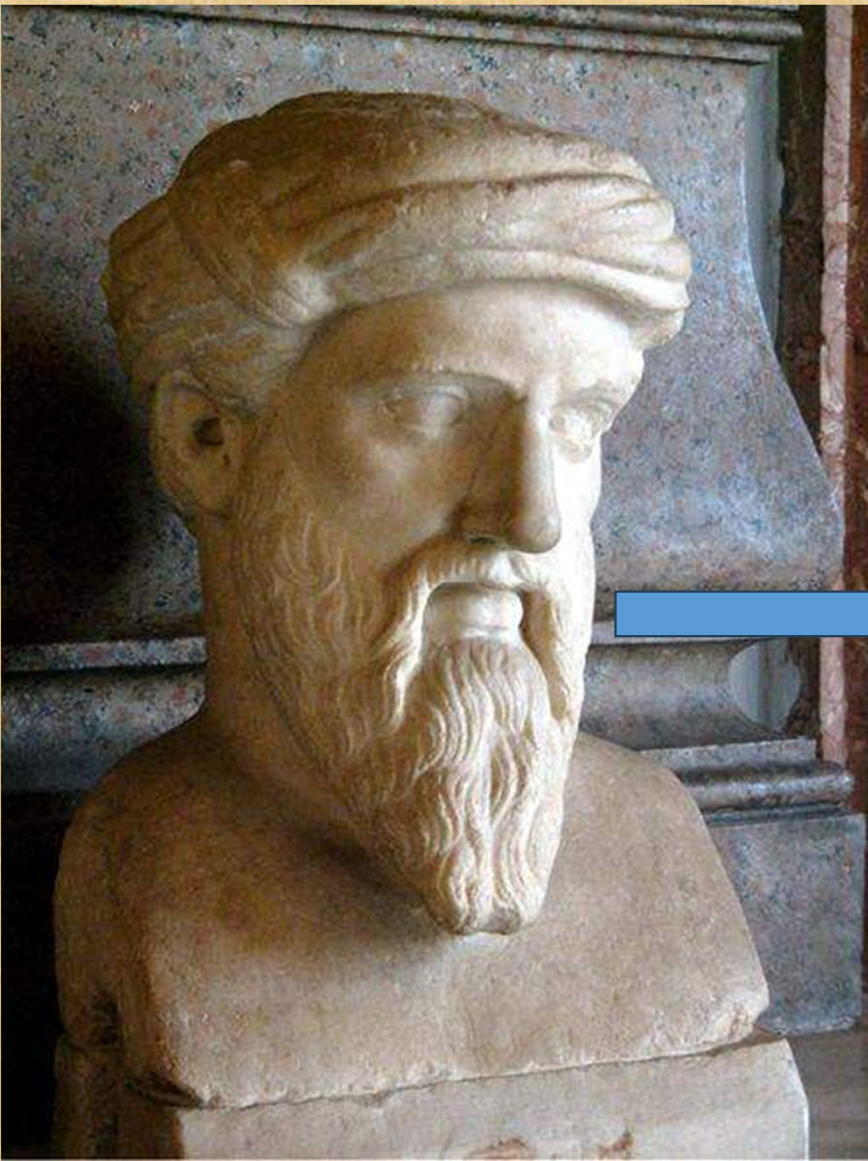


Fabe



$$a^2 + b^2 = c^2$$





Mathematics is the language in  
which the gods talk to people.

~ Plato

AZ QUOTES

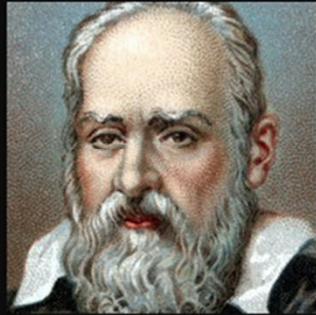


An equation  
for me has  
no meaning ,  
unless it  
represents a

Thought of  
**GOD.**

Srinivasa Ramanujan

[www.SATYAVEDISM.com/mathphysics](http://www.SATYAVEDISM.com/mathphysics)  
[www.SATYAVEDISM.com/evolang](http://www.SATYAVEDISM.com/evolang)



Mathematics is the language  
with which God has written the  
universe.

~ Galileo Galilei

AZ QUOTES

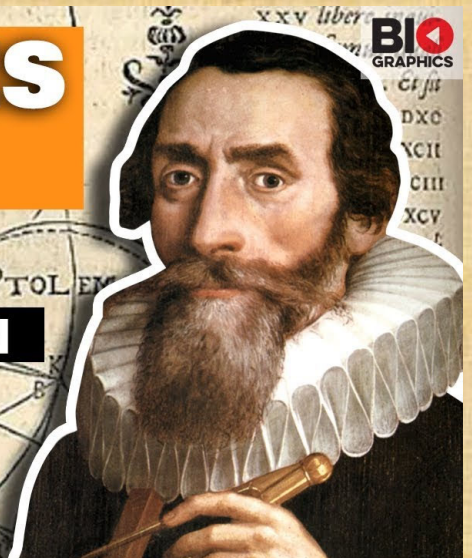
If there is a God, he's a  
great mathematician.

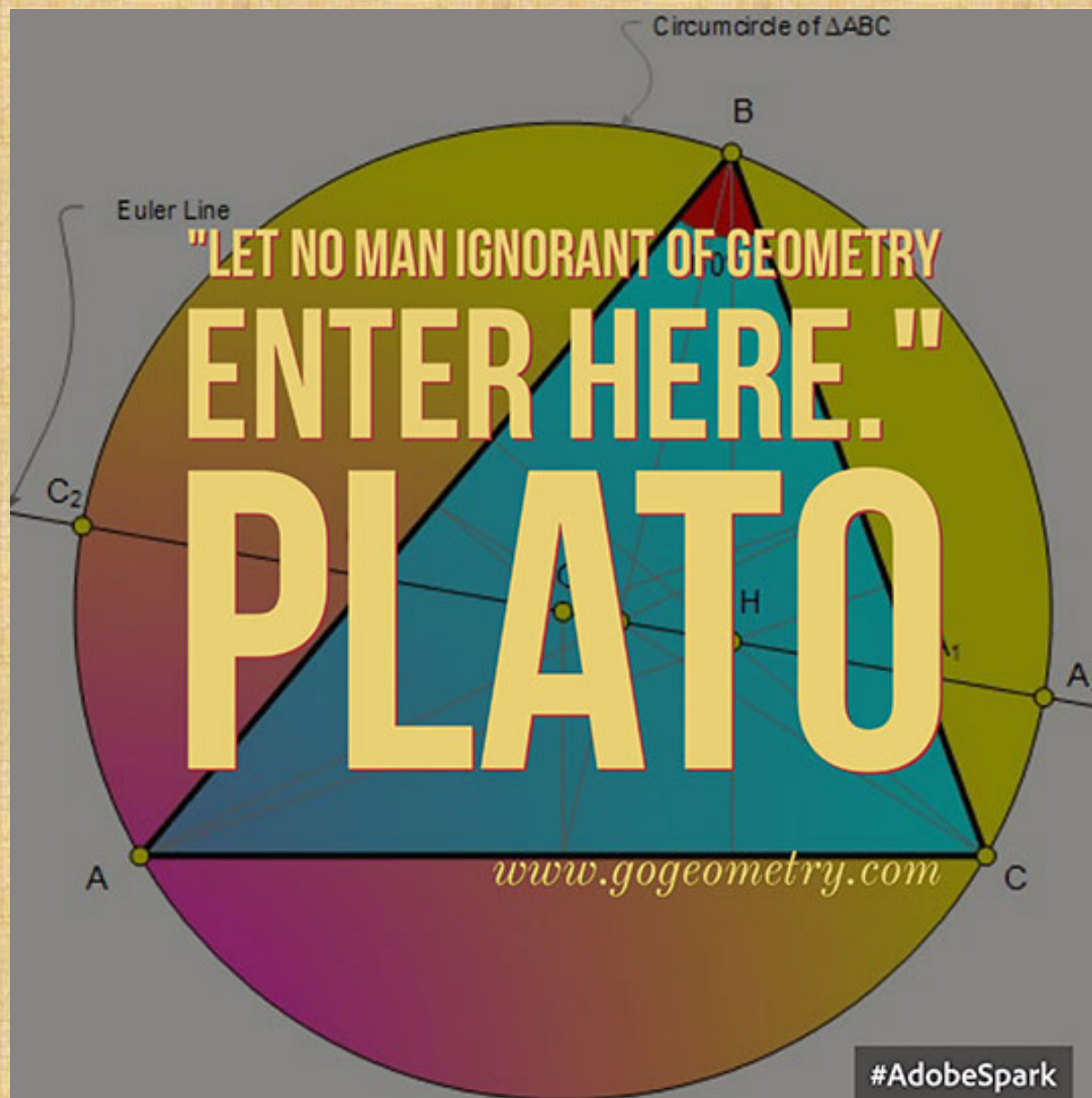
Paul A.M. Dirac

quotation

**JOHANNES  
KEPLER**

**GOD'S  
MATHEMATICIAN**





# Scheppen of ontdekken we wiskundige kennis?



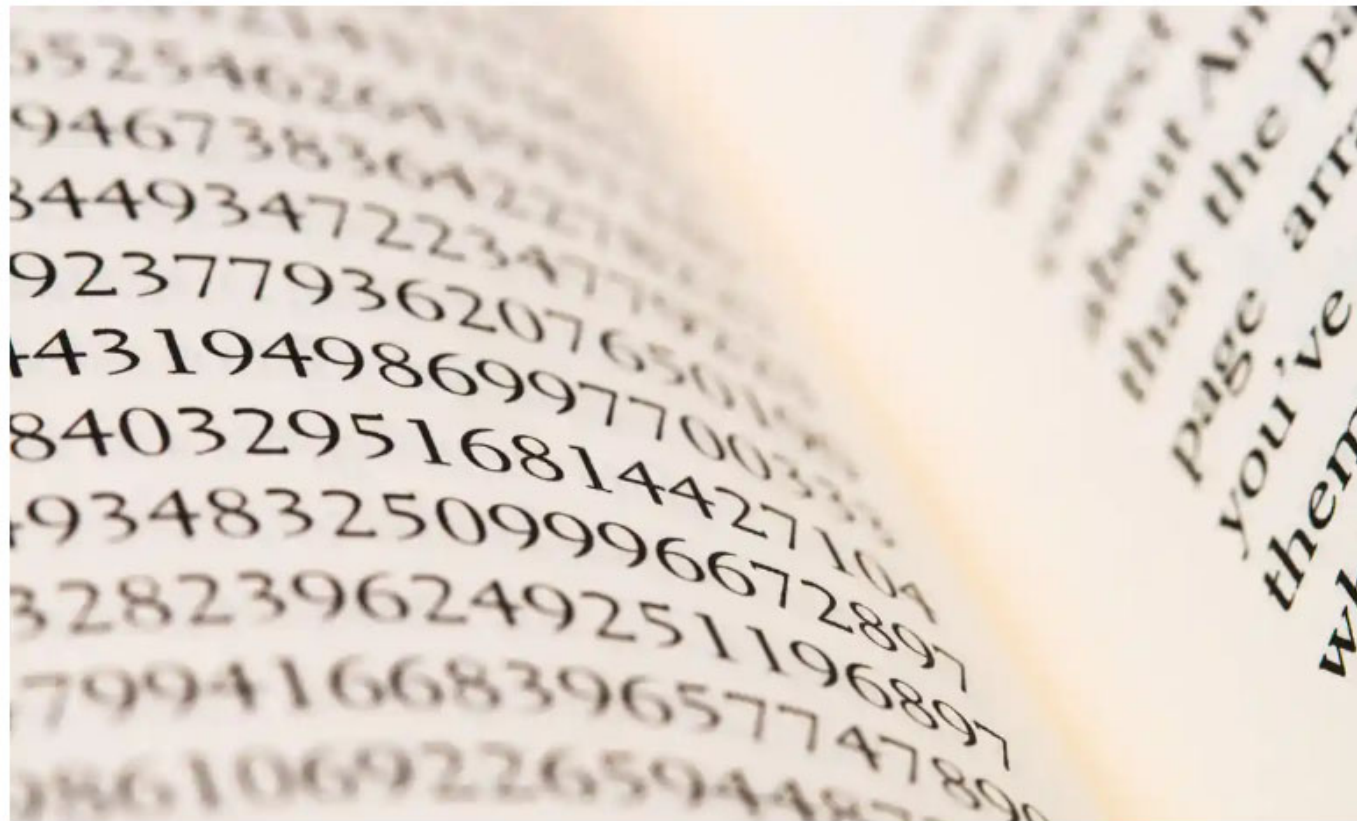
**Die Zauberflöte**  
"Der Hölle Rache kocht in meinen Herzen" - Act II. No. 14

Der Hölle Ra - che kocht in meinem Her - zen, Tod und Verzwei - flung,  
Tod und Verzwei - flung flam - met um mich her! Fühlt nicht  
durch dich Sa - ras tro To - des - schmer - zen, Sa - ras tro To  
des - schmer - zen, so bist du mei - ne Toch - ternim mer mehr,  
so bist du mein - mei ne Toch - ternim mer mehr,  
mei - ne Toch - ternim mer mehr,  
so bist du mei - ne Toch - ternim mer mehr,

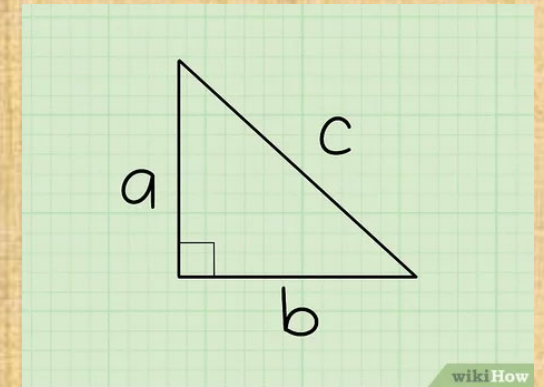


# Largest prime number yet discovered has 22 million digits

There's a new prime number towering above all the others - until the next one is discovered.



# Even terug naar Pythagoras



Wat als de rechthoekzijden van een rechthoekige driehoek beide gelijk zijn aan 1?

Dan zegt de stelling dat  $1^2 + 1^2 = c^2$

Dus is  $1 + 1 = c^2$

Dus is  $2 = c^2$

Bijgevolg is de lengte van  $c = \sqrt{2}$

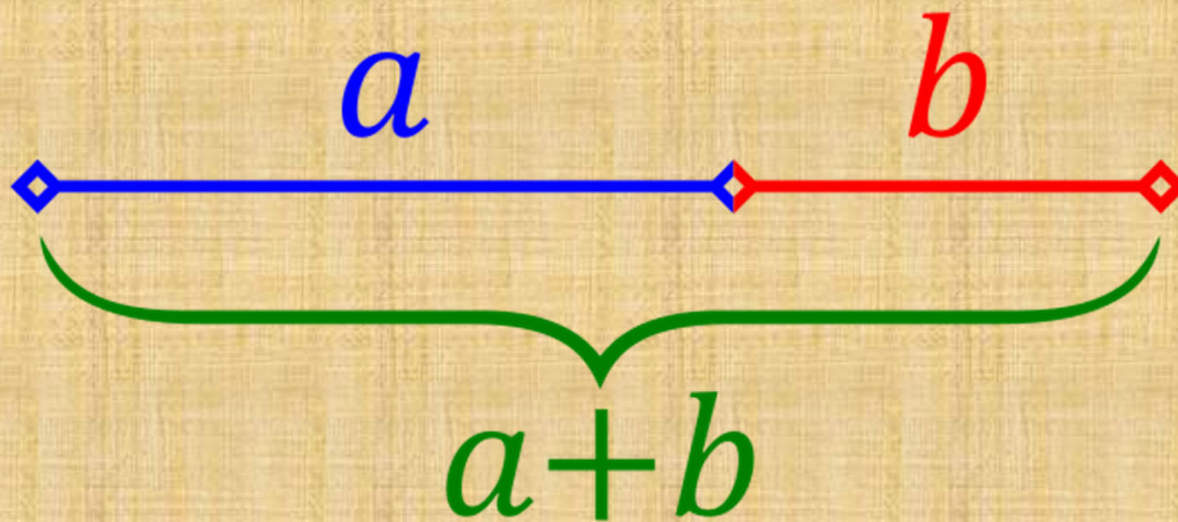
= 1,414213562373095048801688724209698078569671.....

= een *irrationaal* getal

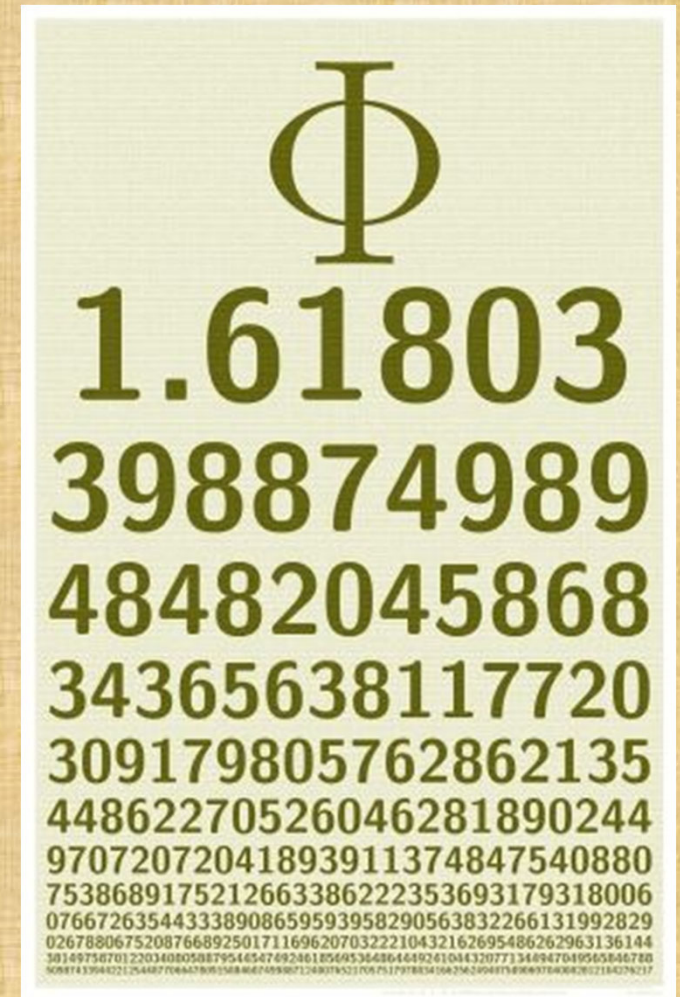
Een oneindig aantal irrationale getallen...

3.14159265358979323846264338327950288419716939937  
51058209749445923078164062862089986280348253421  
17067982148086513282351448149096660905505822317253  
594081284811174402415161469833720750115659848361  
95493038196442881097566593969171516264581284756482337867  
831652712019097974564856692344479052703617595919530921861  
393607260249141273765870073476836274956735188575  
962829254091715364737989259460011330530548820466  
5213841469519415733909433082703617595919530921861  
1738193261179310568548074101706131426868987660315588174881520920  
2724891227938115869377494194912981553652644065664308602  
13949463952247371907021798609437027705392171762931  
767523846748184676694051320005681271452635608277

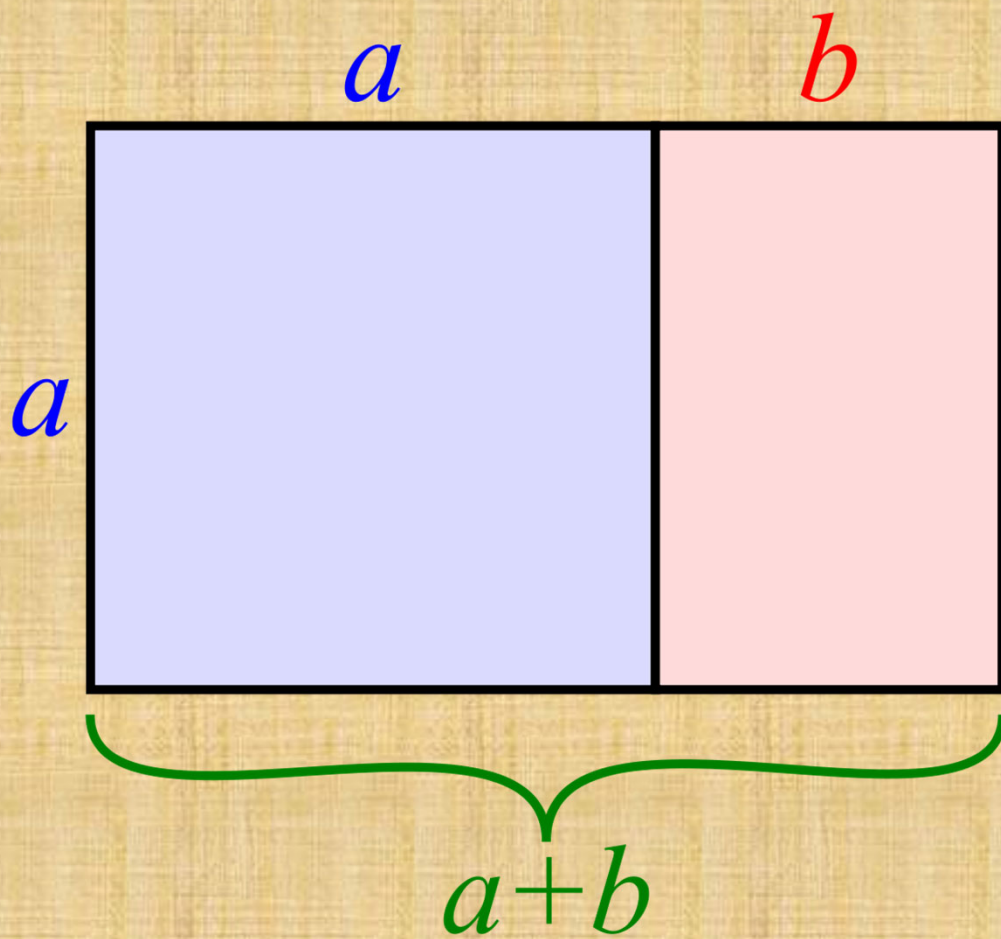
# Het meest merkwaardige irrationaal getal

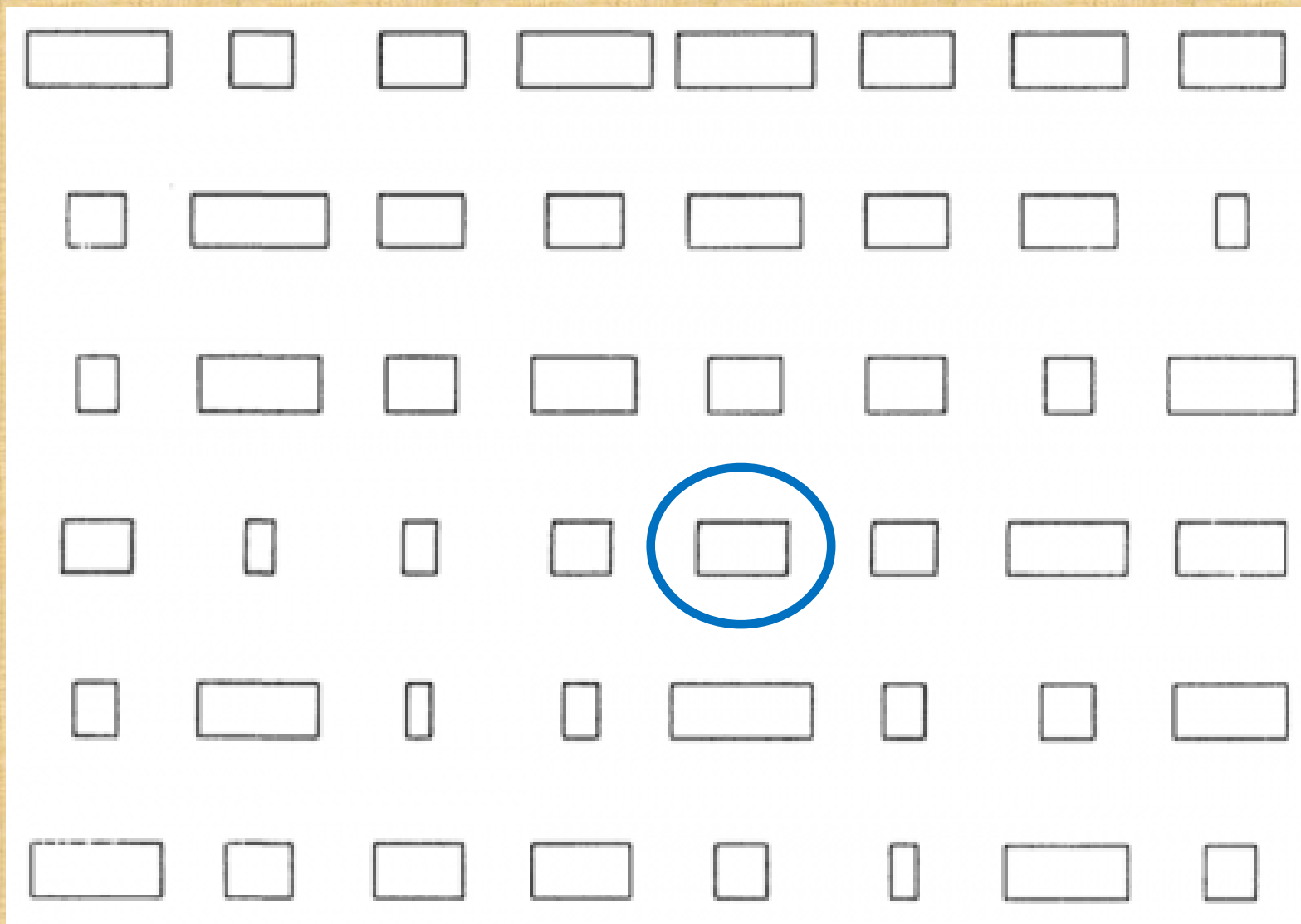


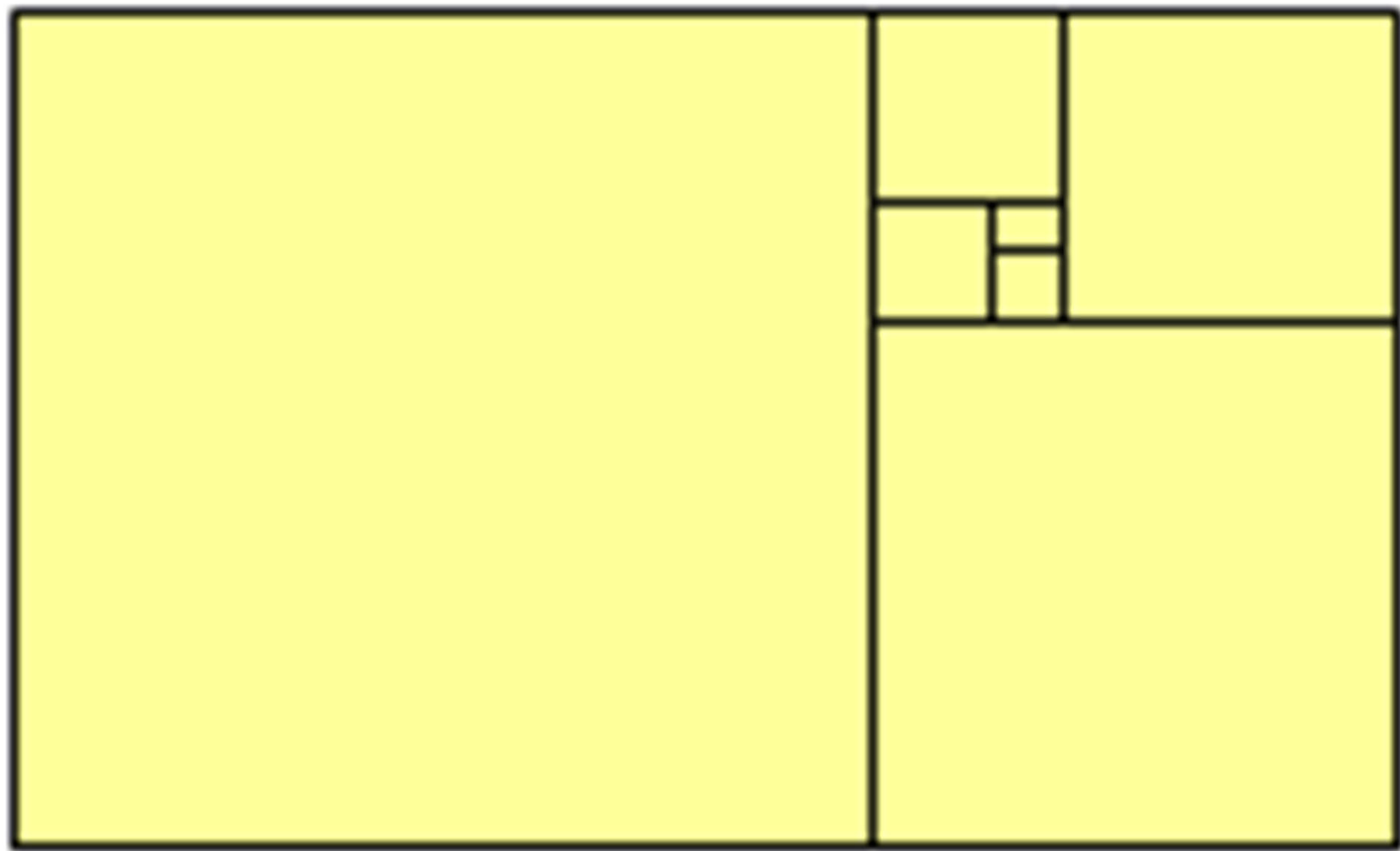
$a+b$  is to  $a$  as  $a$  is to  $b$

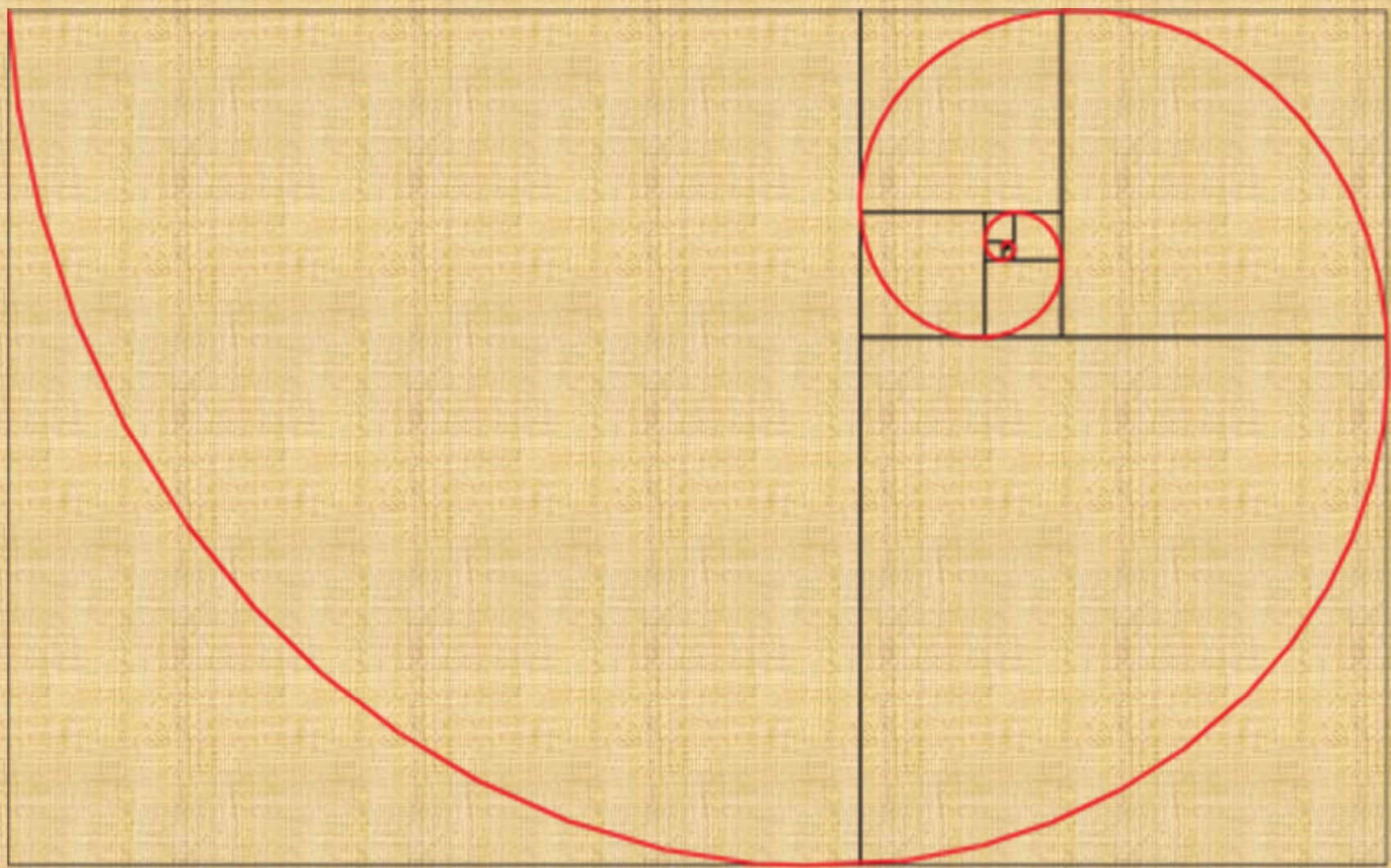


# De gouden rechthoek

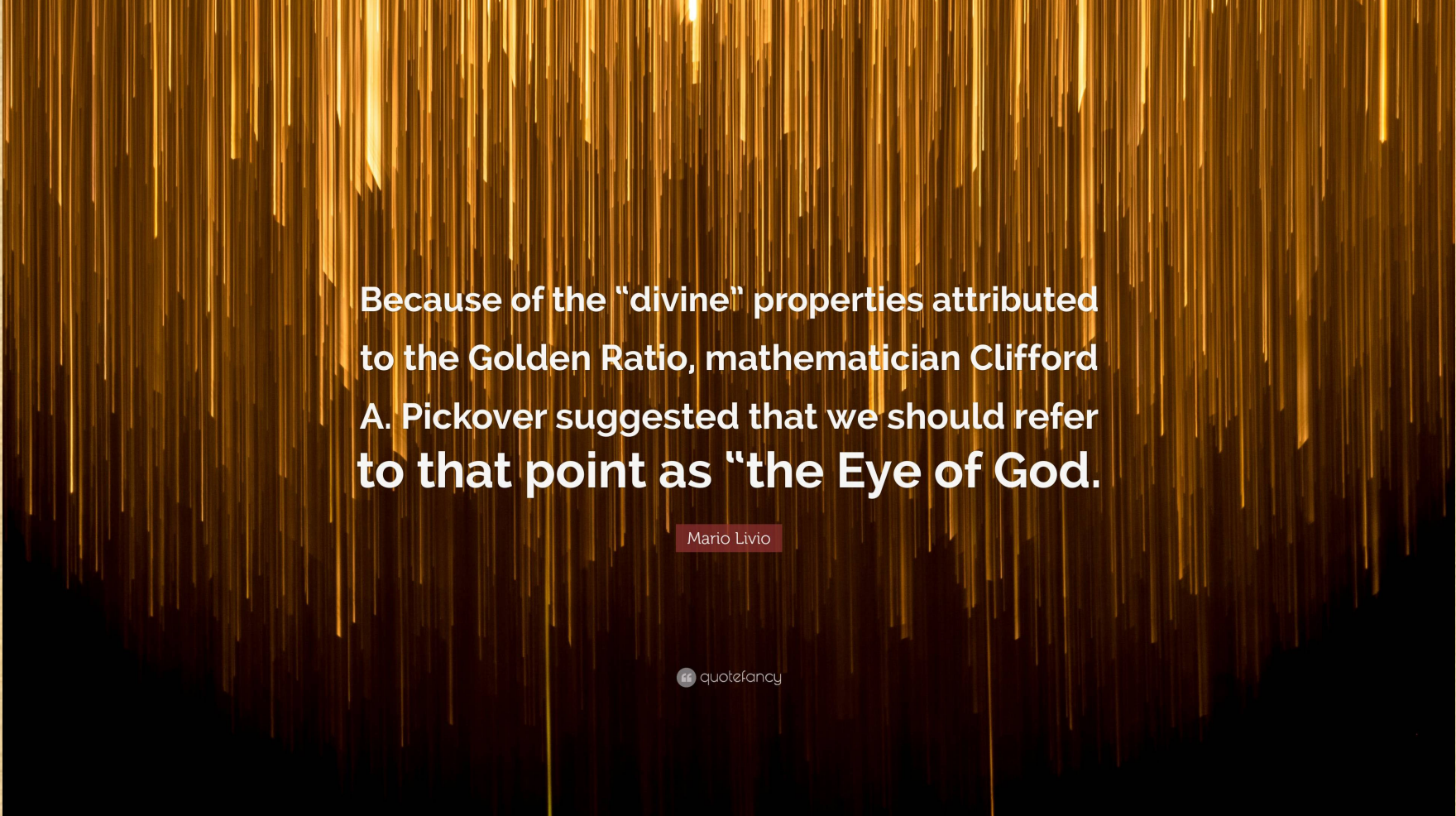








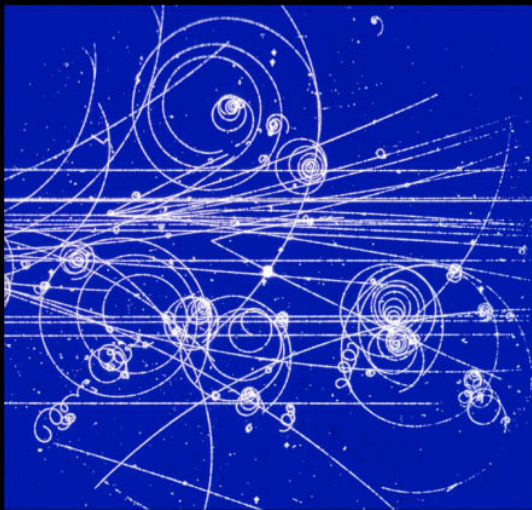
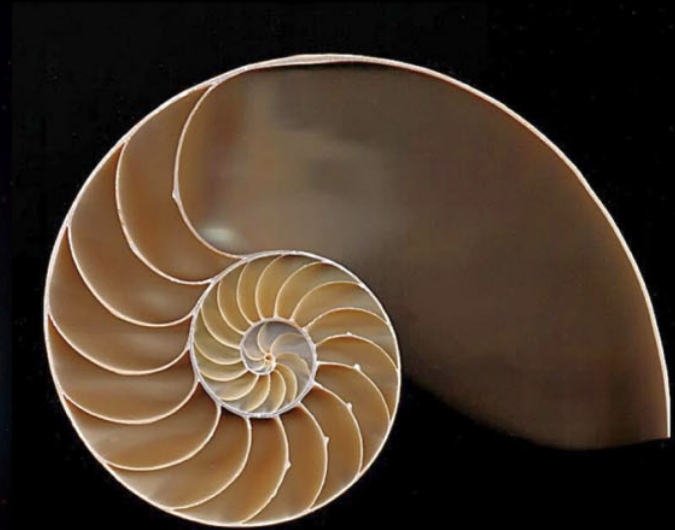
Merk op dat het 'eindpunt' van de spiraal nooit bereikt kan worden...

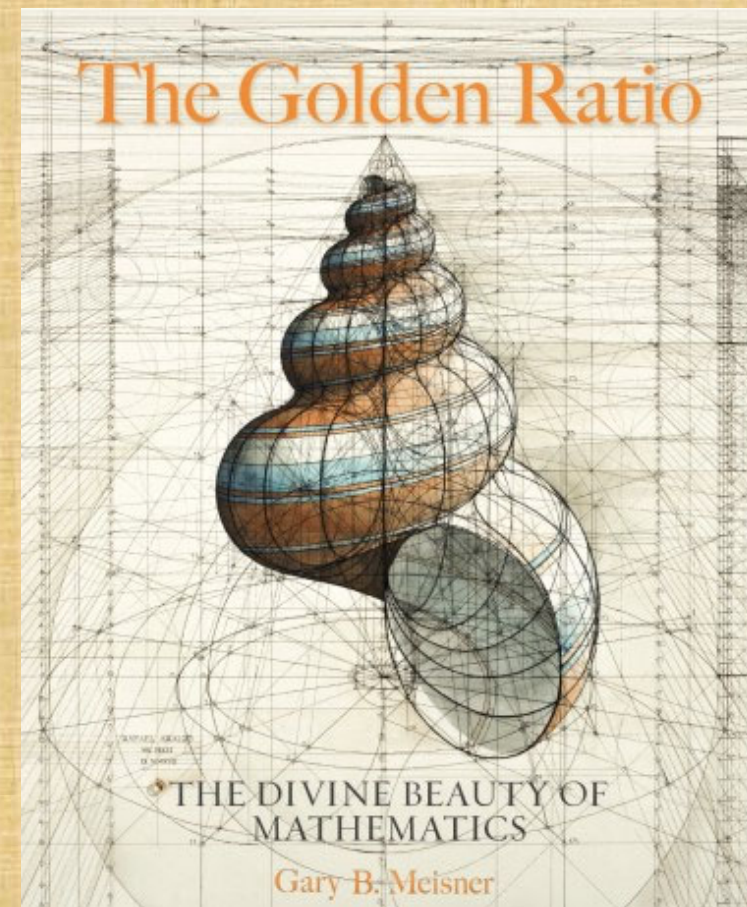
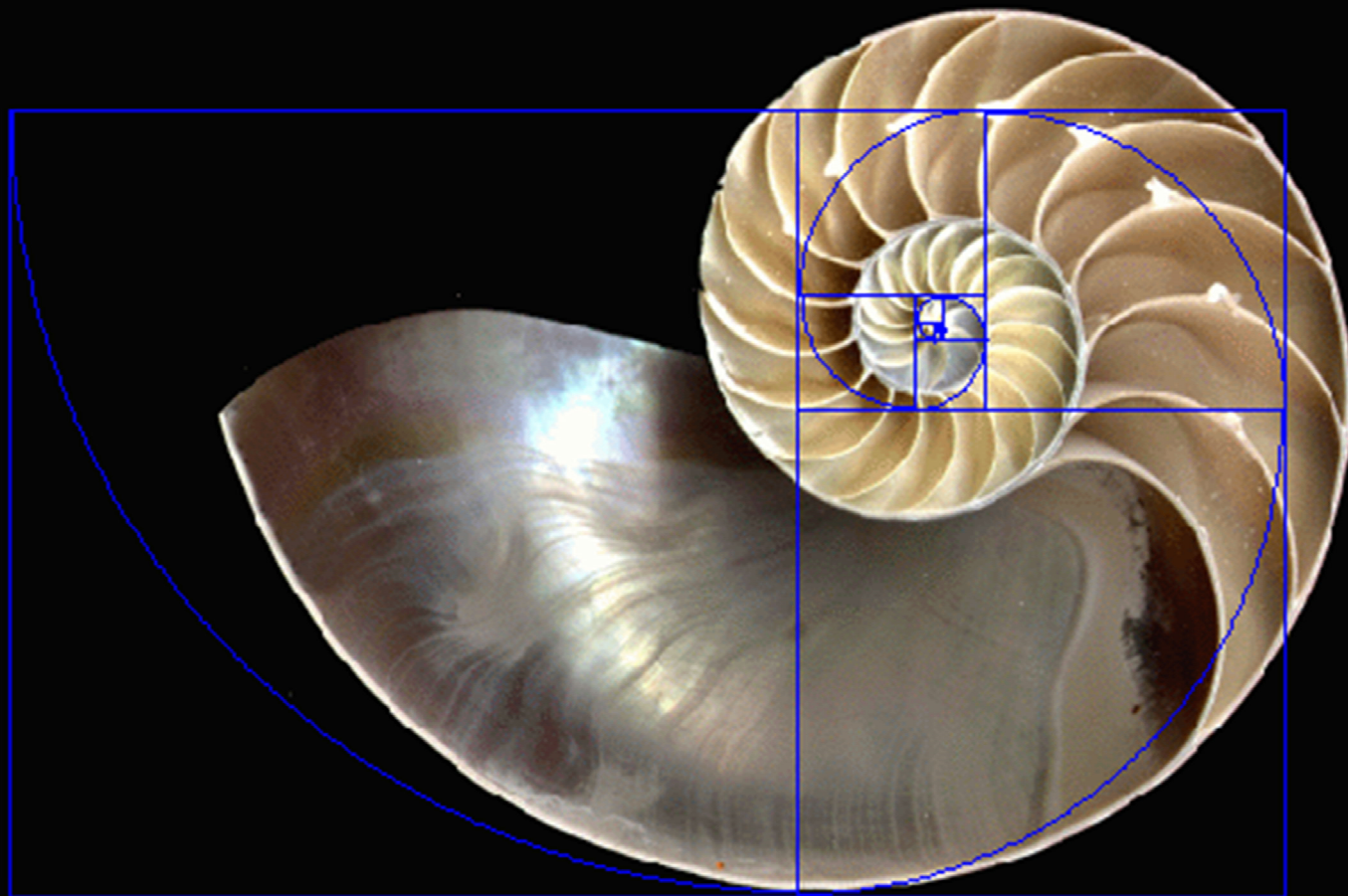
A golden spiral, resembling a nautilus shell, is shown against a dark background. The spiral starts from a central point and expands outwards, creating a sense of depth and movement. The text 'the Eye of God' is written in a stylized font at the center of the spiral.

Because of the “divine” properties attributed to the Golden Ratio, mathematician Clifford A. Pickover suggested that we should refer to that point as “the Eye of God.

Mario Livio

quote fancy





Is  $\phi$  – de gulden snede – de mathematische toegang tot volmaaktheid in proportie(s) en in schoonheid?

Pythagoras: muzikale harmonie/schoonheid = expressie getallen en wiskundige verhoudingen.

Kunnen we dit veralgemenen, naar de natuur, de mens, de kunst... de hele kosmos?

Eerst iets over konijnen. Boek Leonardo Fibonacci (1202): *Liber abaci*. In hoofdstuk 12: “Een man plaatst een jong konijnenpaar op een plek die volledig ommuurd is. Hoeveel konijnenparen zijn er na een jaar, gegeven dat elke maand elk konijnenpaar een nieuw paar voortbrengt, dat vanaf de volgende maand zelf ook vruchtbaar is?”

1  1

2  1

3   2

4    3

5      5

6         8

■ Generation

■ # of Pairs

 Mature

 Immature

De groei van de konijnenpopulatie volgt de reeks van Fibonacci:

**1,1,2,3,5,8,13,21,34,55,89,144,233,377...**

$$1+1=2$$

$$1+2=3$$

$$2+3=5$$

$$3+5=8$$

$$5+8=13$$

$$8+13=21$$

$$13+21=34$$

$$21+34=55$$

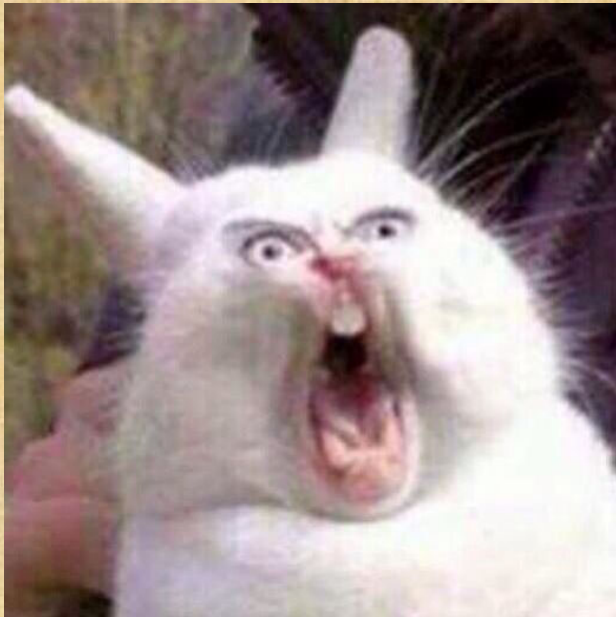
$$34+55=89$$

$$55+89=144$$

$$89+144=233$$

$$144+233=377$$

Opeenvolgende Fibonacci  
getallen delen door het  
voorafgaande getal geeft  
een reeks getallen die  
steeds dichterbij Phi  
benaderen!



$$1/1 = 1$$

$$2/1 = 2$$

$$3/2 = 1.5$$

$$5/3 = 1.66666666666666$$

$$8/5 = 1.6$$

$$13/8 = 1.625$$

$$21/13 = 1.61538461538$$

$$34/21 = 1.61904761905$$

$$55/34 = 1.61764705882$$

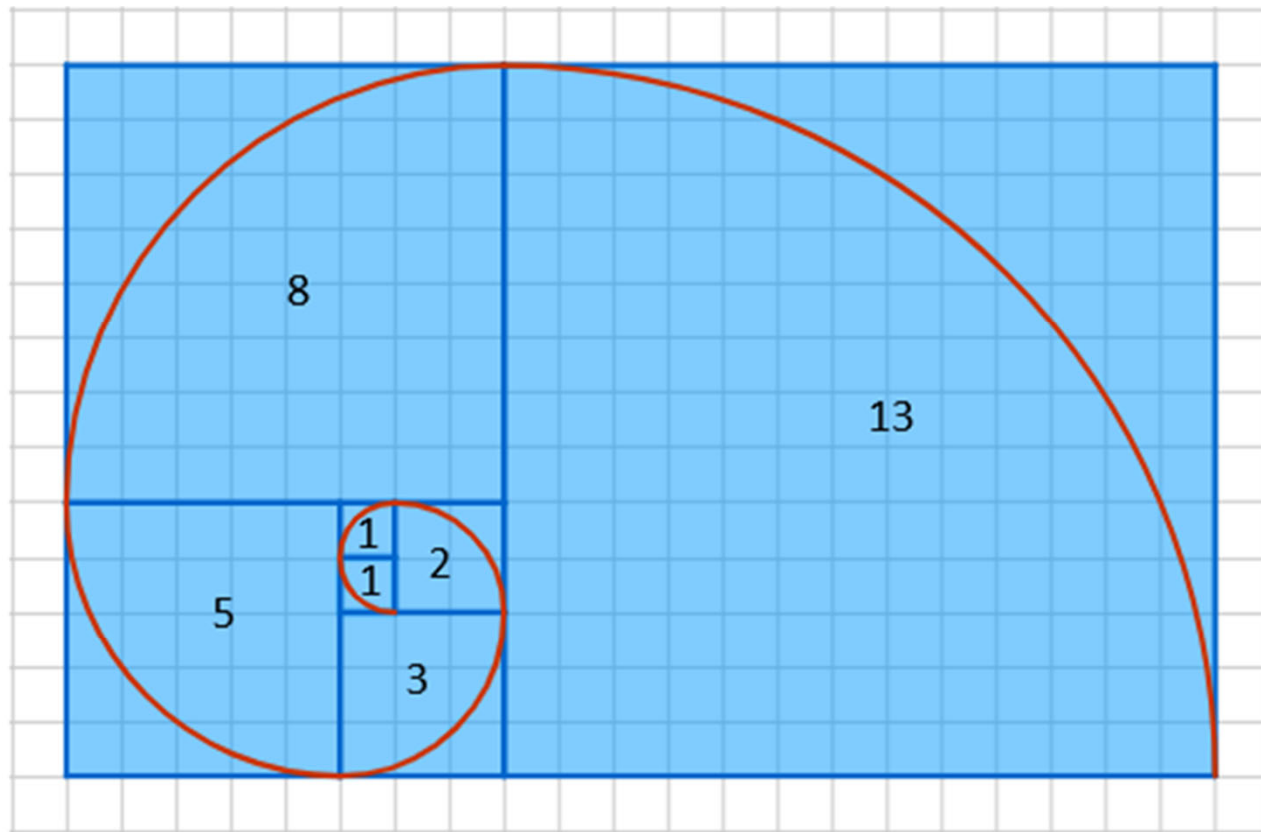
$$89/55 = 1.61818181818$$

—

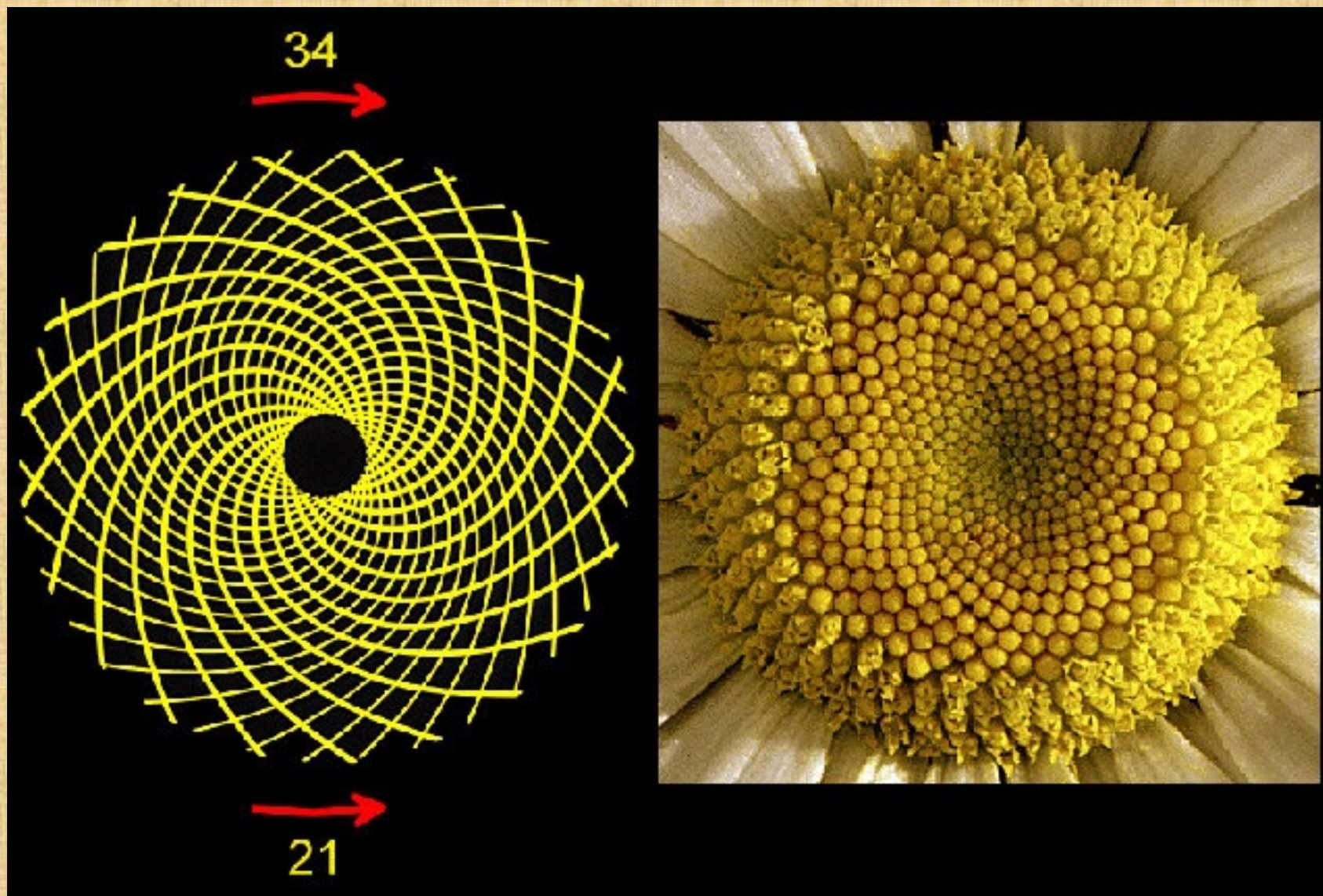
$$\text{Phi} = 1.6180339887...$$

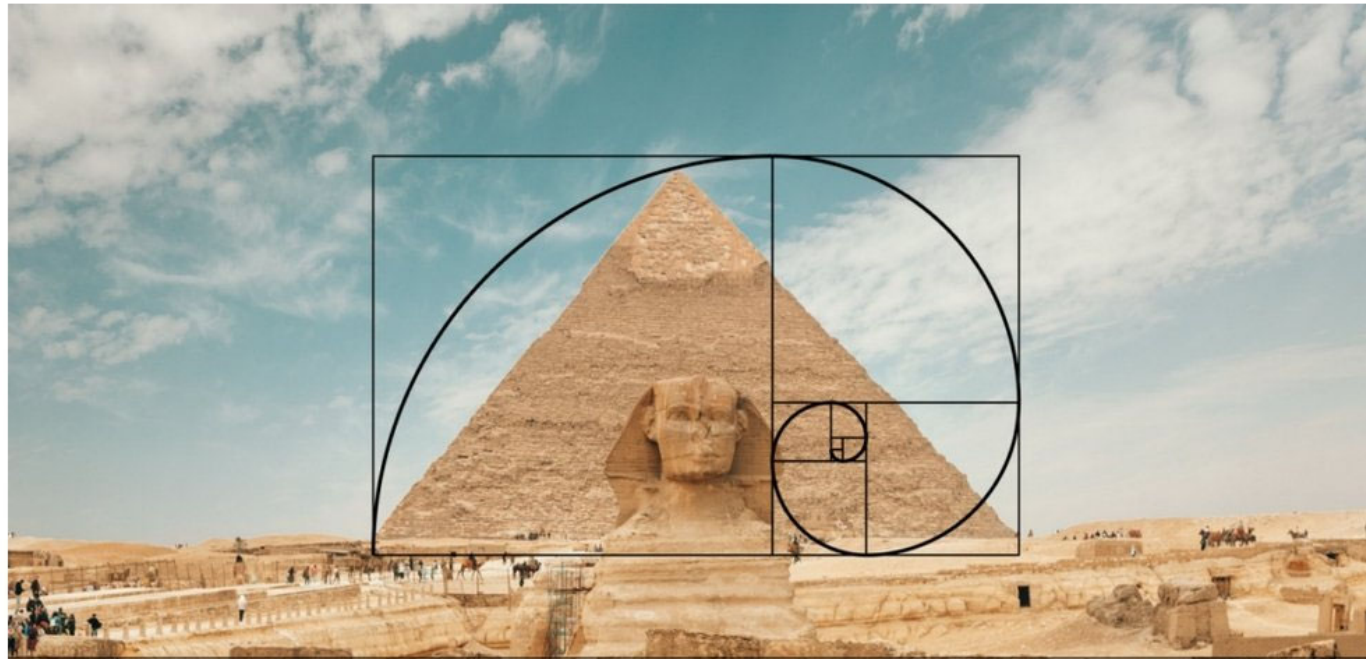
## Fibonacci Sequence

0, 1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89, 144,...



The Golden Spiral



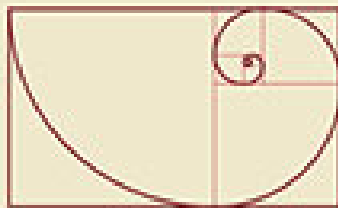


The Great Pyramid of Giza is the oldest of the Seven Wonders of the Ancient World. Ancient Egyptians too used Golden proportions to construct huge pyramids. Image credit: [thearchinsider.com](http://thearchinsider.com)

# GOLDEN RATIO 1.618

Based on the Fibonacci sequence, the Golden Ratio describes the relationship between two proportions. Fibonacci numbers follow a 1:1.618 ratio - this is what we refer to as the Golden Ratio.

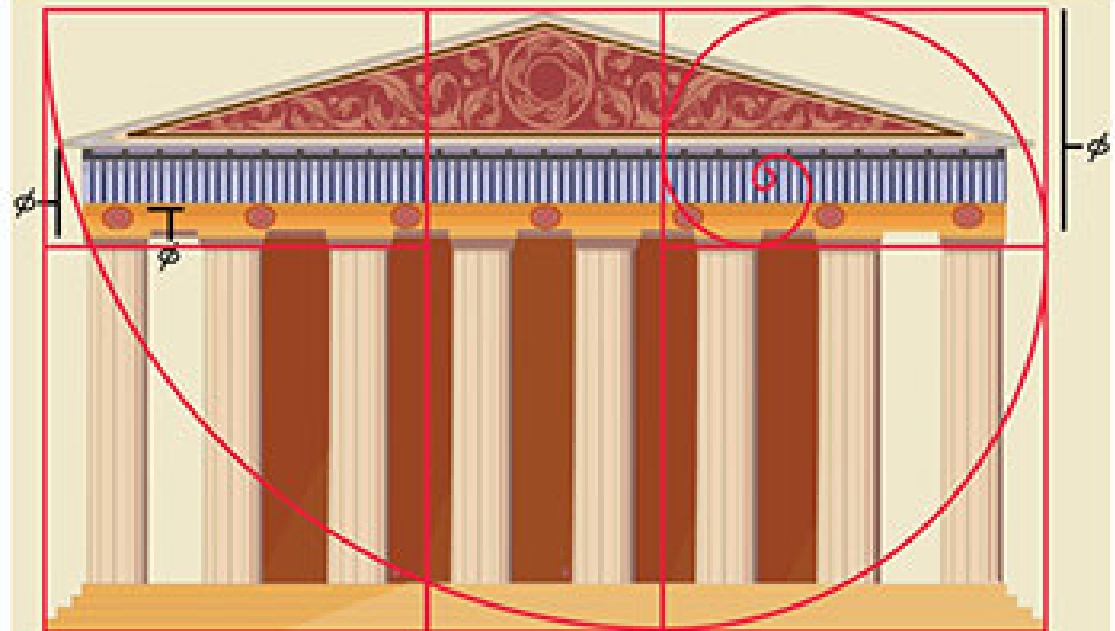
Throughout history, the ratio for length to width of rectangles of 1:1.618 has been considered the most pleasing to the eye



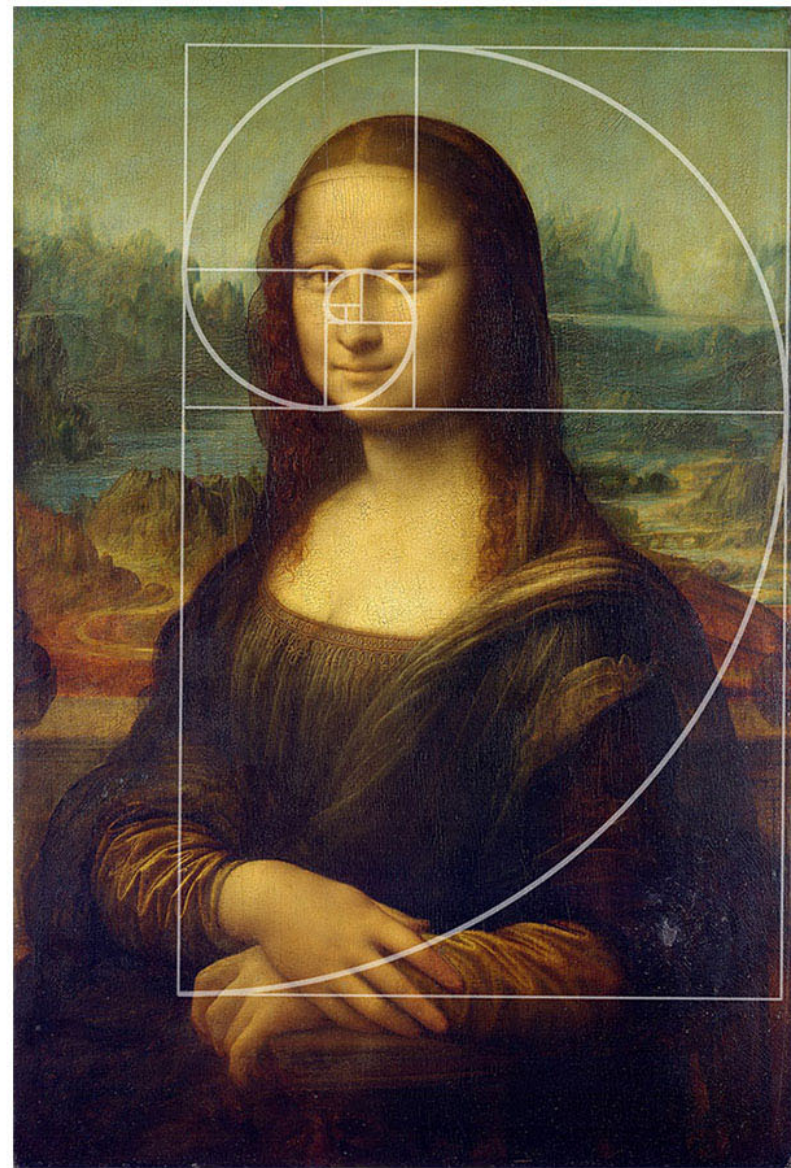
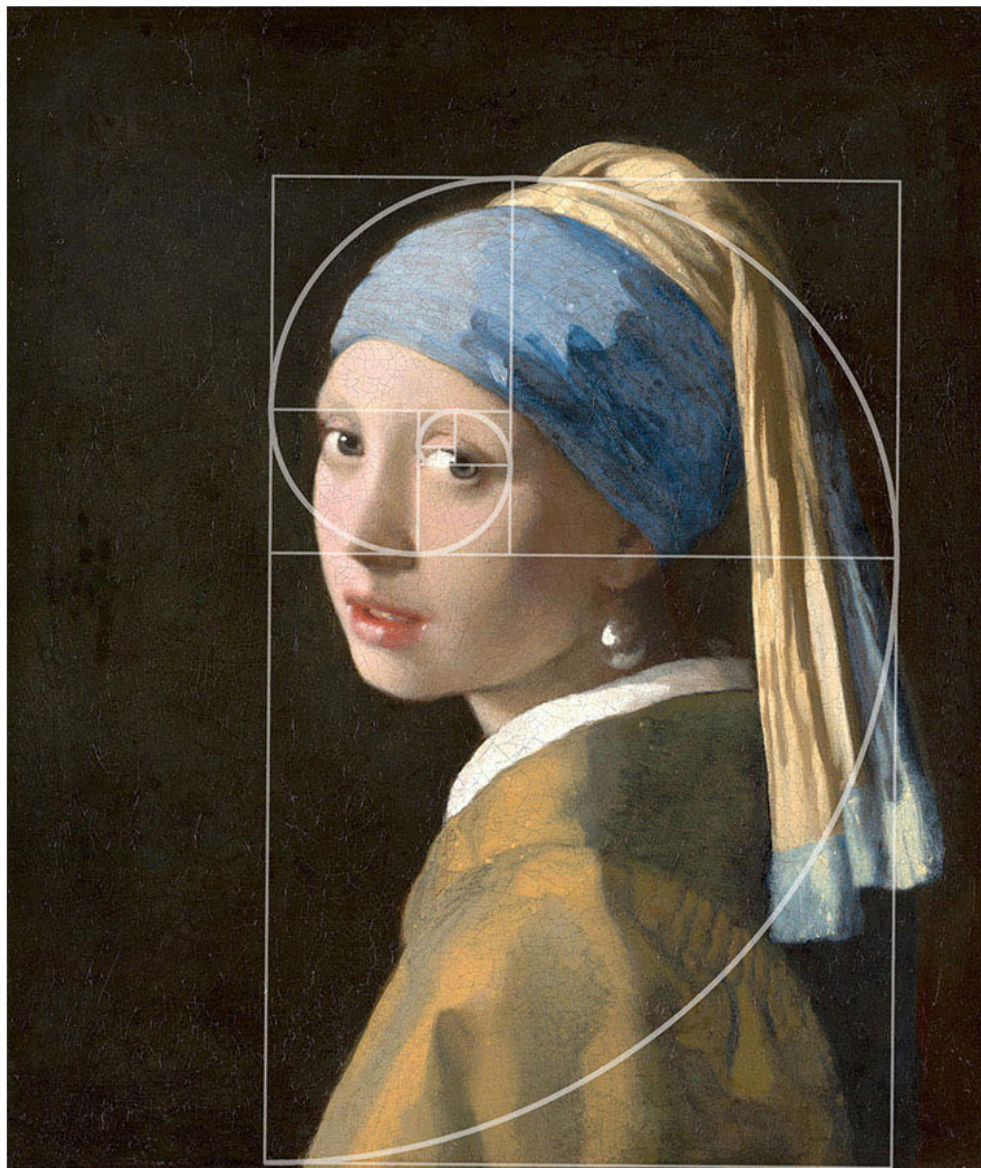
GOLDEN SPIRAL

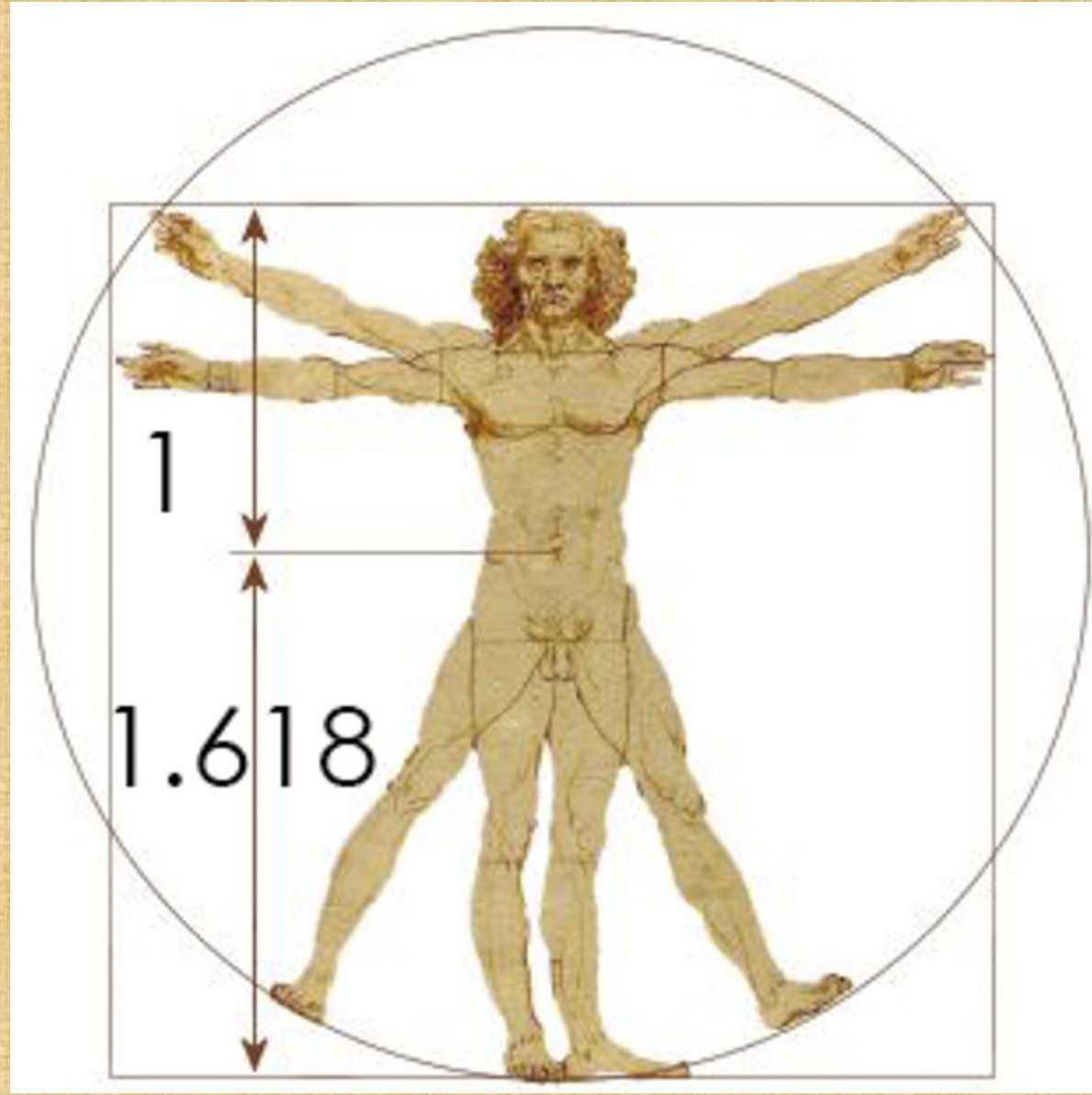


GOLDEN TRIANGLE



In architecture, Parthenon is a famous example of golden ratio being extensively used in the exterior dimensions of a building.









## THE GOLDEN RATIO IS EVERYWHERE

### — PLANTS —

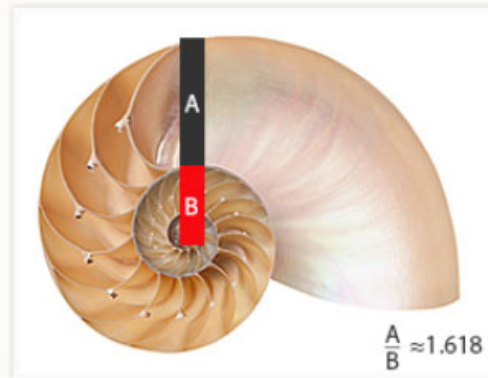


Sunflower

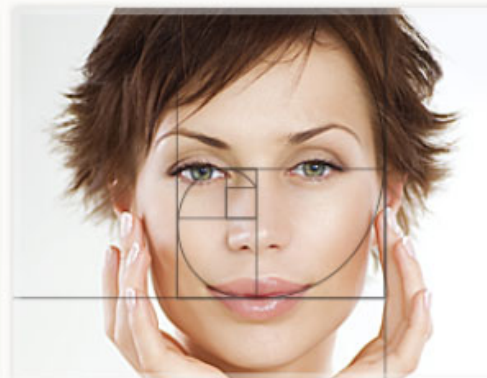


Spiral Aloe

### — ANIMALS —



Nautilus Shell



Human Face

## — SHAPES AND SYMBOLS —

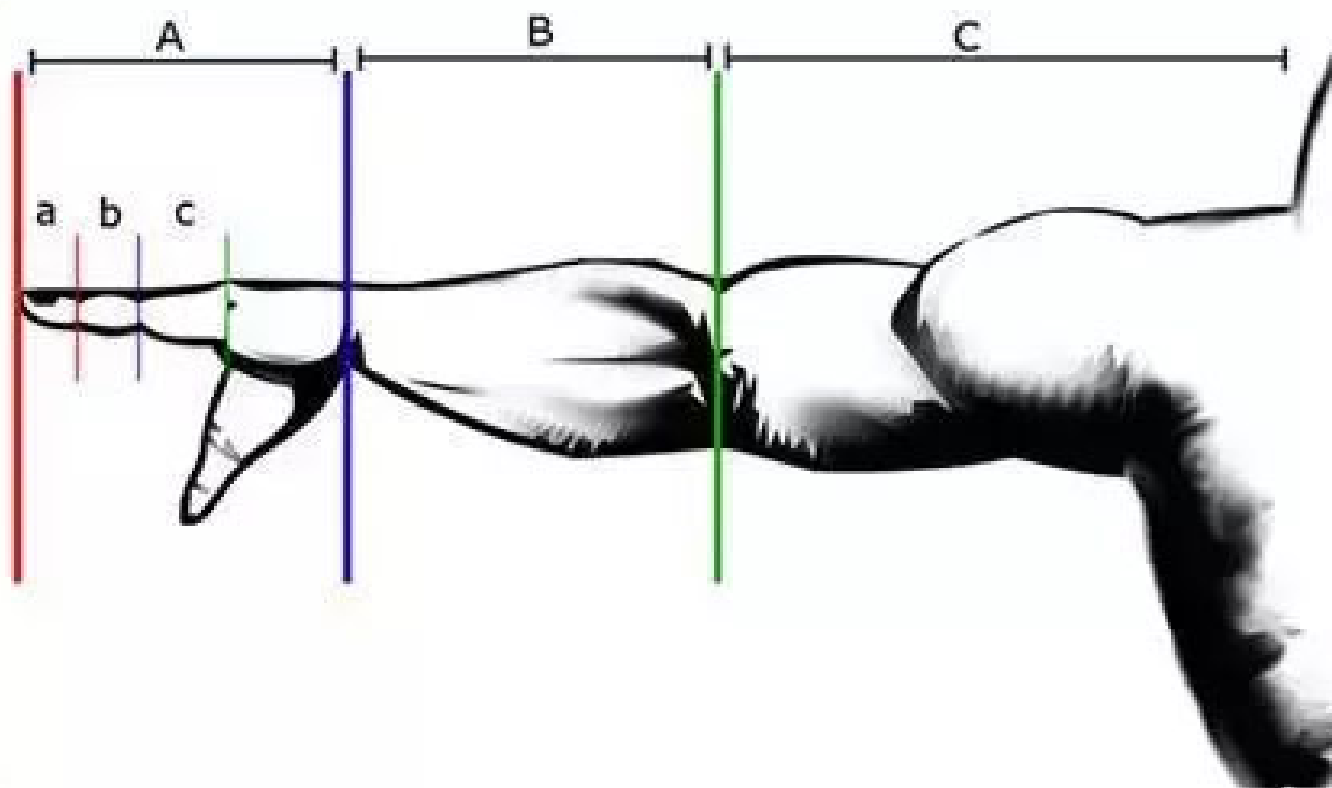
Use the golden ratio to add interest to vector-based shapes. Many major companies, for example, have used golden proportions in the design of their logos.



$$\frac{A}{B} \approx 1.618$$



$$\frac{C}{B} = \frac{B}{A} = \frac{c}{b} = \frac{b}{a} = \phi = \frac{1 + \sqrt{5}}{2} = 1.618 \dots$$



The golden ratio is seen in the phalanges and the metacarpals of the hand.

# Science says this is the most beautiful woman in the world

Updated: 17 Oct 2019, 03:21 PM IST



## 3/9 All Greek

Her eyes, eyebrows, nose, lips, chin, jaw and facial shape came closest to the ancient Greeks' idea of perfection. The measurements were conducted by Dr Julian De Silva, an eminent facial cosmetic surgeon at London's famous Harley Street.

## 2/9 94.35% accurate to Phi

The 23-year-old was found to be 94.35% 'accurate' to the Golden Ratio of Beauty Phi - a measure of physical perfection.

## 1/9 The perfect face

Supermodel Bella Hadid has been declared the most beautiful woman in the world after she passed a science test that determines what constitutes the 'perfect face'.

# 10 Female Celebs With Bodies Very Close To Perfection According To Ancient Greeks Golden Ratio!



Elsa Quartet - Onedio Member

June 01 2017 - 04:33pm

What's the ultimate measurement of beauty? Who decides who's beautiful or not? These are, of course, very valid questions and there's no doubt that the answer depends on countless parameters. Golden ratio, however, seems to be an interesting method to measure beauty as it is actually the "maths" of beauty! So here are 10 female celebrities and their closeness to perfection according to golden ratio.

# Scarlett Johansson has the world's most perfect body, according to the maths



Nedahl Stelio

May 26, 2015 – 8.51am

Save

Share

[A](#)

What makes a perfect woman's body? The measurements of Scarlett Johansson, according to a British lingerie company, Bluebella, who rated celebrity female forms using an ancient Greek equation of what is considered truly beautiful, and applied it to women's curves.

The Golden Ratio has been used by the Greeks for years as a way of determining the ultimate proportions, and Scar-Jo scored a super high 96.4 when it came to measuring bust to waist to thigh measurements. The holy trinity, naturally.

# **A Human Body Mathematical Model Biometric Using Golden Ratio: A New Algorithm**

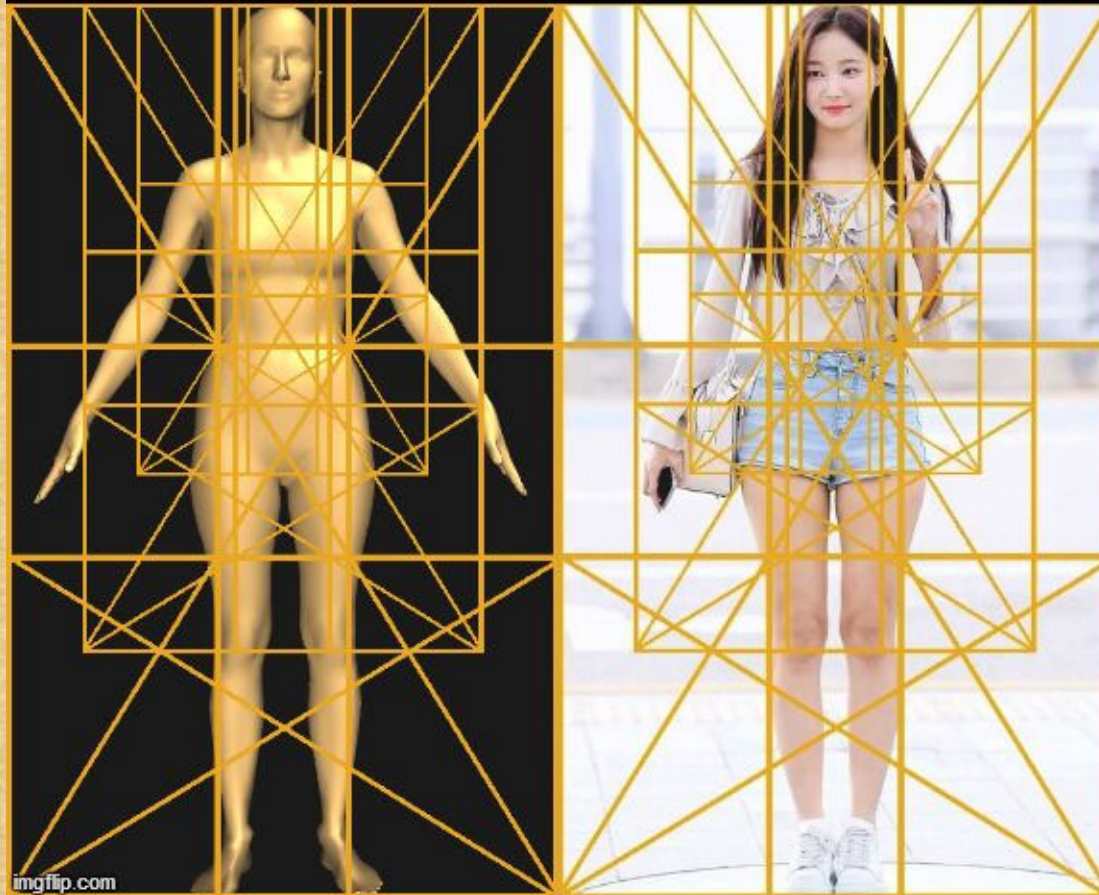
WRITTEN BY

**Evon Abu-Taieh and Hamed S. Al-Bdour**

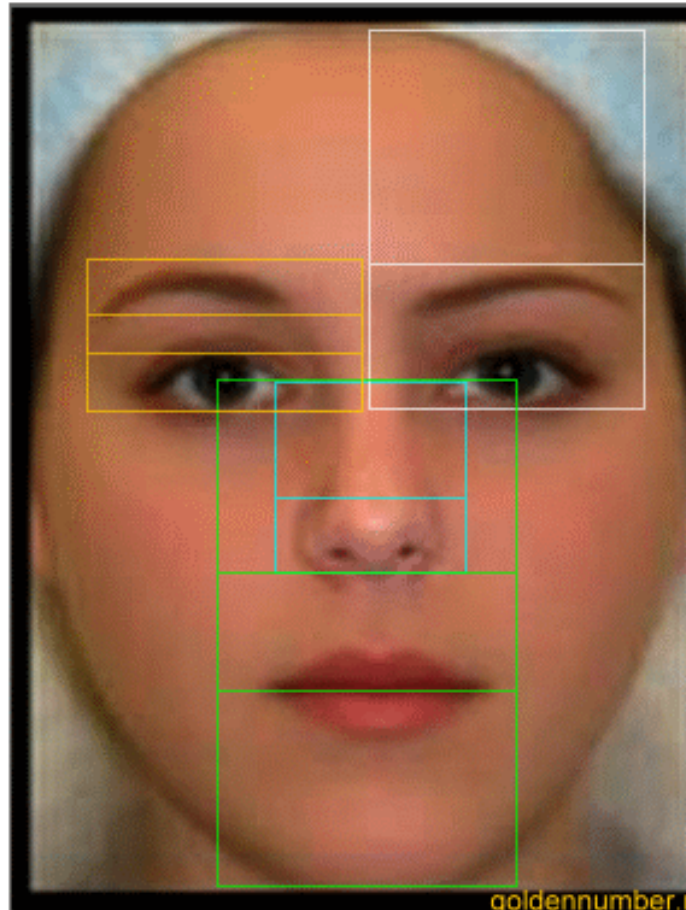
Submitted: December 19th, 2017 , Reviewed: March 1st, 2018 , Published: August 29th, 2018

DOI: [10.5772/intechopen.76113](https://doi.org/10.5772/intechopen.76113)

## **A BODY PROPORTIONED TO THE GOLDEN RATIO USING A WEB PROGRAM AND AN EXAMPLE**

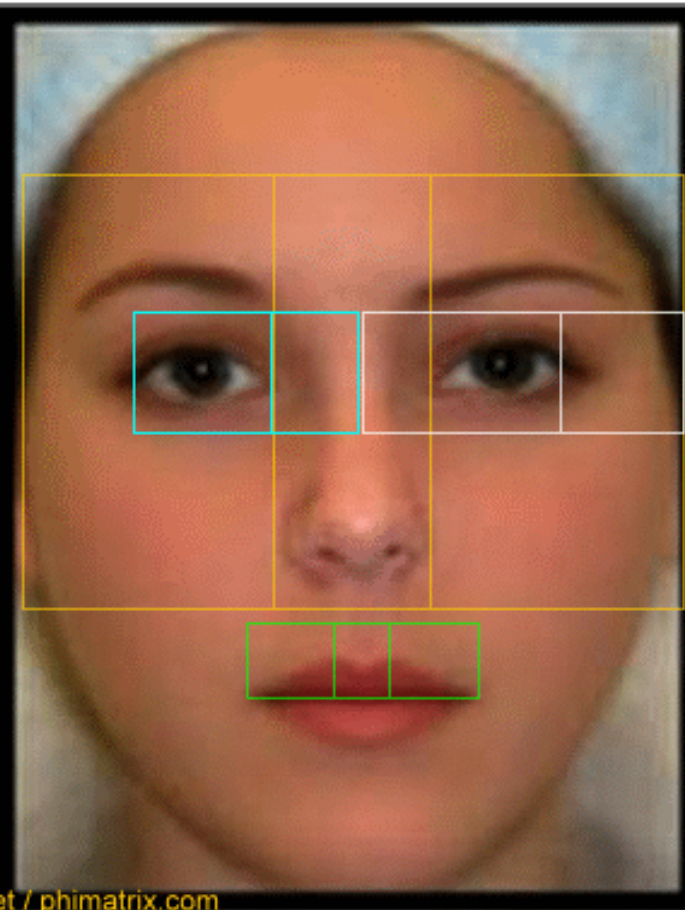


Golden Ratios in  
Vertical Dimensions



.36

Golden Ratios in  
Horizontal Dimensions



.46

[goldennumber.net](http://goldennumber.net) / [phimatrix.com](http://phimatrix.com)

The Golden Ratio, or "divine proportion" is standard for beauty in all things, based on a mathematical number derived by measuring regular polygons. The number is a repeating decimal that approximates to 1.618, and can be applied to the human body as the ideal ratio of specific body measurements. This perfect combination of female body measurements is extremely rare, with even the most shapely celebrities merely coming close.

According to the Golden Ratio, below are the ideal measurements for 28 year old woman who is **5 feet and 4 inches tall**:

Body weight: 124 lbs.

Upper chest and under bust measurements: 34 and 27.7 inches

Waist: 25 inches

Hips: 36 inches

Thighs: 20 inches

#### 5 Measurement Golden Ratio Base on Height

| Age         | 20-29        | 30-39 | 40-49 | 50-59 | 60-69 |
|-------------|--------------|-------|-------|-------|-------|
| Upper Chest | Height*0.515 | 0.525 | 0.545 | 0.52  | 0.52  |
| Lower Chest | 0.432        | 0.453 | 0.468 | 0.45  | 0.45  |
| Waist       | 0.37         | 0.386 | 0.401 | 0.39  | 0.39  |
| Hip         | 0.542        | 0.553 | 0.505 | 0.56  | 0.56  |
| Thigh       | 0.313        | 0.318 | 0.323 | 0.318 | 0.318 |



Fabulous > Celebrity

## **BREAST IN SHOW** Lucie & Samira are the Love Island girls with the best boobs, according to the 'Golden Ratio' - and they're all natural

Tiffany Wallis

Published: 14:42, 10 Jun 2021 | Updated: 15:00, 16 Jun 2021



## Geometric analysis of the shapes of beautiful breasts and breast implants based on the golden ratio (Phi): practical application

Análise geométrica da forma da beleza da mama e da forma de prótese baseado na proporção Phi: aplicação prática

### Original Article - Year2011 - Volume26 - Issue 1

Antonio Roberto Bozola<sup>1</sup>; Franco Marcelo Longato<sup>2</sup>; Adriana Parro Bozola<sup>3</sup>

#### ABSTRACT

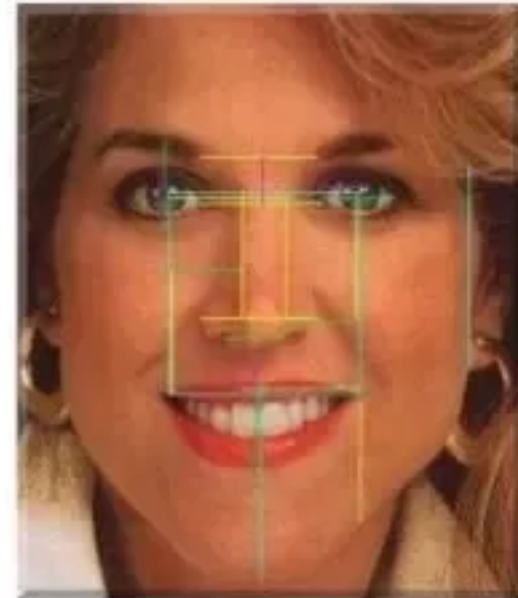
**Introduction:** The use of conventional prostheses for hypomastia often yields unsatisfactory and inconsistent results in the final form of the breasts. Considering the number of reported studies on breast and breast-prosthesis forms is negligible, the aim of this study was to optimize the shape results of breast implants on the basis of the Phi ratio, historically known as the golden or divine ratio. **Methods:** The Phi ratio (1/1.618...) is believed to be registered in the human limbic system as the value of beauty, harmony, and balance of proportions. The three-dimensional anatomy (front, lateral, and vertical views) of beautifully shaped breasts was analyzed geometrically on the basis of the Phi ratio. The various forms of hypomastia were classified. Further, two new forms of polyurethane-covered breast implants were fabricated on the basis of the Phi ratio. The prostheses were chosen by means of vertical measurement of the patient's chest in the frontal view and the hypomastia classification. **Results:** Ten pairs of prostheses were specially fabricated and implanted in 10 patients. Follow-up for 12 months showed good results for the breast shapes and volumes. **Conclusion:** Geometric and three-dimensional analysis of beautiful breast shapes and fabrication of breast prostheses based on the Phi ratio are possible to correct hypomastia. In addition to the simple choice of prostheses, the methods provide good and homogeneous results of breast shapes and volumes, reducing subjectivity.

# THE GOLDEN RATIO AND BEAUTY IN HUMANS

---

## *The Human Face*

- **Dr. Stephen Marquardt** a former plastic surgeon, used the golden section and some of its relatives to make a mask that he claims that is the most beautiful shape a human face can ever have, it used decagons and pentagons as its function that **embodies phi in all their dimensions**. Dr. Marquardt has been studying on human's facial beauty for many years.

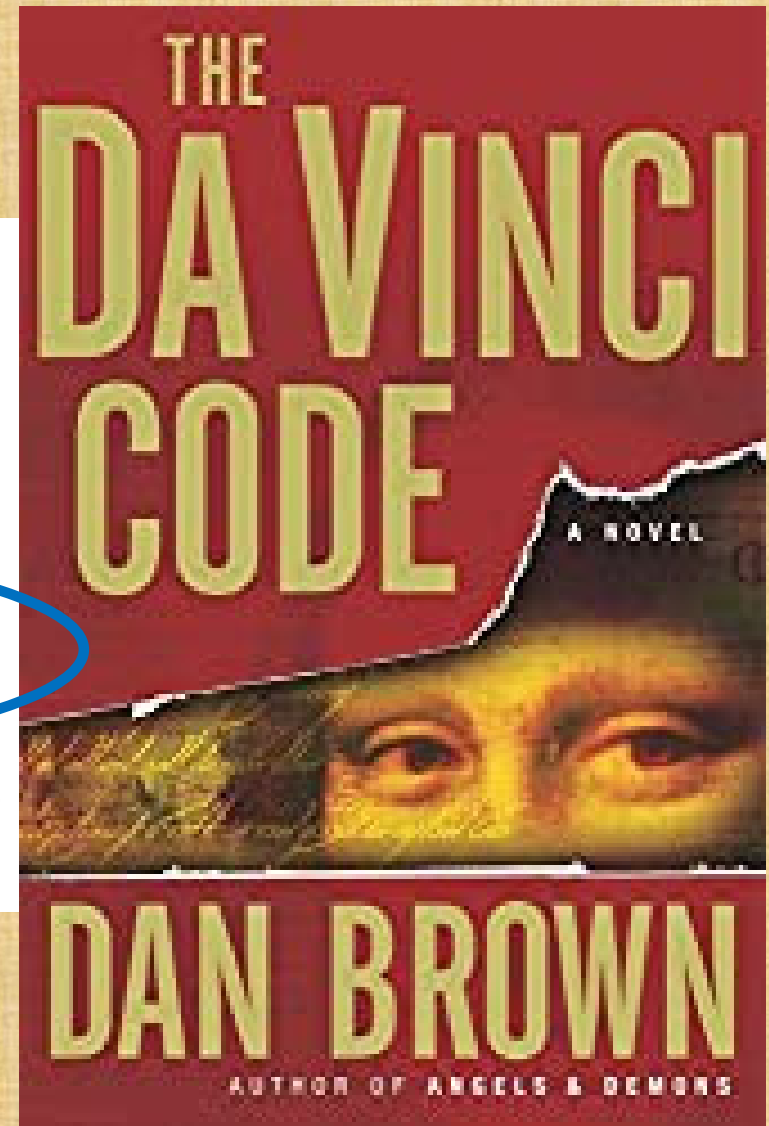


# The Da Vinci Code of fertility: How the 'golden ratio' made popular by Dan Brown could reveal the most fertile wombs

- Study suggests women with mathematically perfect wombs are the most fertile
- Based on the 'golden ratio' of 1.618, which comes from the Fibonacci number sequence

By [CLAIRE BATES](#)

UPDATED: 13:42 BST, 15 August 2012



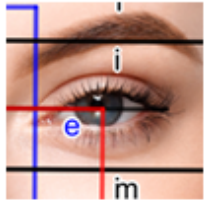


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TAKE A BRAIN  
BREAK**

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**Realiteit of  
“number juggling”?  
Pseudowiskunde,  
pseudo-architectuur,  
pseudopsychologie  
...**





## Myths of maths: The golden ratio

Chris Budd



Submitted by Marianne on 23 February, 2020

Most of you will have heard about the number called the *golden ratio*. It appears, for example, in the book/film *The da Vinci Code* and in many articles, books, and school projects, which aim to show how mathematics is important in the real world. It has been described by many authors (including the writer of the da Vinci Code) as the basis of all of the beautiful patterns in nature and it is sometimes referred to as the *divine proportion*. It is claimed that much of art and architecture contains features in proportions given by the golden ratio. For example it is claimed that both the Parthenon and the pyramids are in this proportion. It has also been claimed that the golden ratio appears in the human body, for example as the ratio of the height of an adult to the height of their navel, or of the length of the forearm to that of the hand.

***This article is based on a talk in an ongoing Gresham College lecture series. You can see a video of the talk below.***

Yet in my whole career of applying mathematics to the real world I have come across the golden ratio exactly twice. Yes, twice! So are any of these great claims made for the golden ratio true?



BY JOHN BROWNLEE 8 MINUTE READ

In the world of art, architecture, and design, the golden ratio has earned a tremendous reputation. Greats like **Le Corbusier** and Salvador Dalí have used the number in their work. The Parthenon, the Pyramids at Giza, the paintings of Michelangelo, the Mona Lisa, even **the Apple logo** are all **said to incorporate it**.

It's bullshit. The golden ratio's aesthetic bona fides are an urban legend, a myth, a design unicorn. Many designers don't use it, and if they do, they vastly discount its importance. There's also no science to really back it up. Those who believe the golden ratio is the hidden math behind beauty are falling for a 150-year-old scam.

# Mathematicians dispute claims that the 'golden ratio' is a natural blueprint for beauty

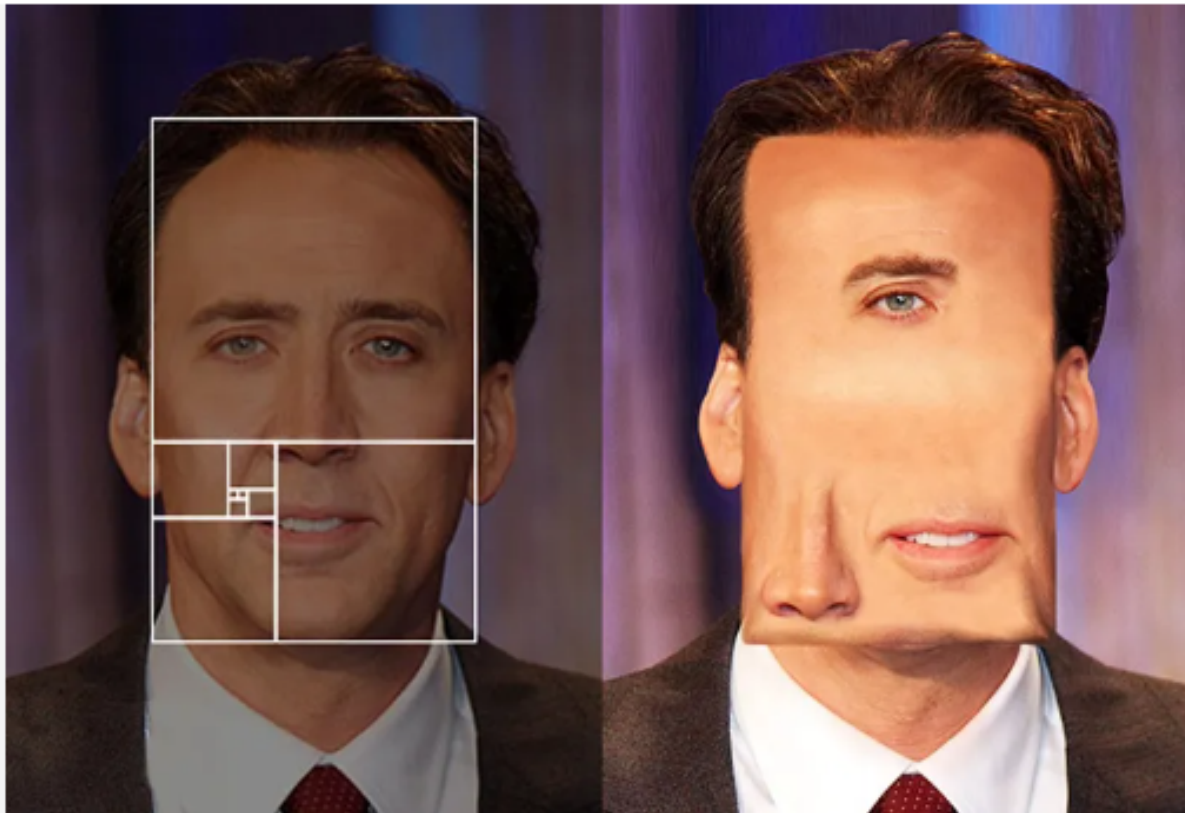
Experts blast 'myth that refuses to go away', saying that sums alone cannot define which faces are easy on the eye

Ian Johnston • Monday 27 April 2015 09:57 • [Comments](#)



# How Celebrity Faces Would Look if They Fit the Golden Ratio

Believed to hold the key to beauty in design, art, and nature, the ratio doesn't do much for these famous actors.





### Math Encounters -- Fibonacci & the Golden Ratio Exposed -- Keith Devlin (Presentation & Workshop)



National Museum of Mathematics  
15,8K abonnees

Abonneren

664



Delen

Downloaden



<https://www.youtube.com/watch?v=JuGT1aZkPQ0>

# The Human Skull Obeys the 'Golden Ratio,' Study Suggests. Anatomists Say That's Ridiculous.

News

By [Yasemin Saplakoglu](#) published October 10, 2019



# Jabberwocky

Lewis Carroll

'Twas brillig, and the slithy toves  
Did gyre and gimble in the wabe;  
All mimsy were the borogoves,  
And the mome raths outgrabe.

"Beware the Jabberwock, my son!  
The jaws that bite, the claws that catch!  
Beware the Jubjub bird, and shun  
The frumious Bandersnatch!"

He took his vorpal sword in hand:  
Long time the manxome foe he sought--  
So rested he by the Tumtum tree,  
And stood awhile in thought.

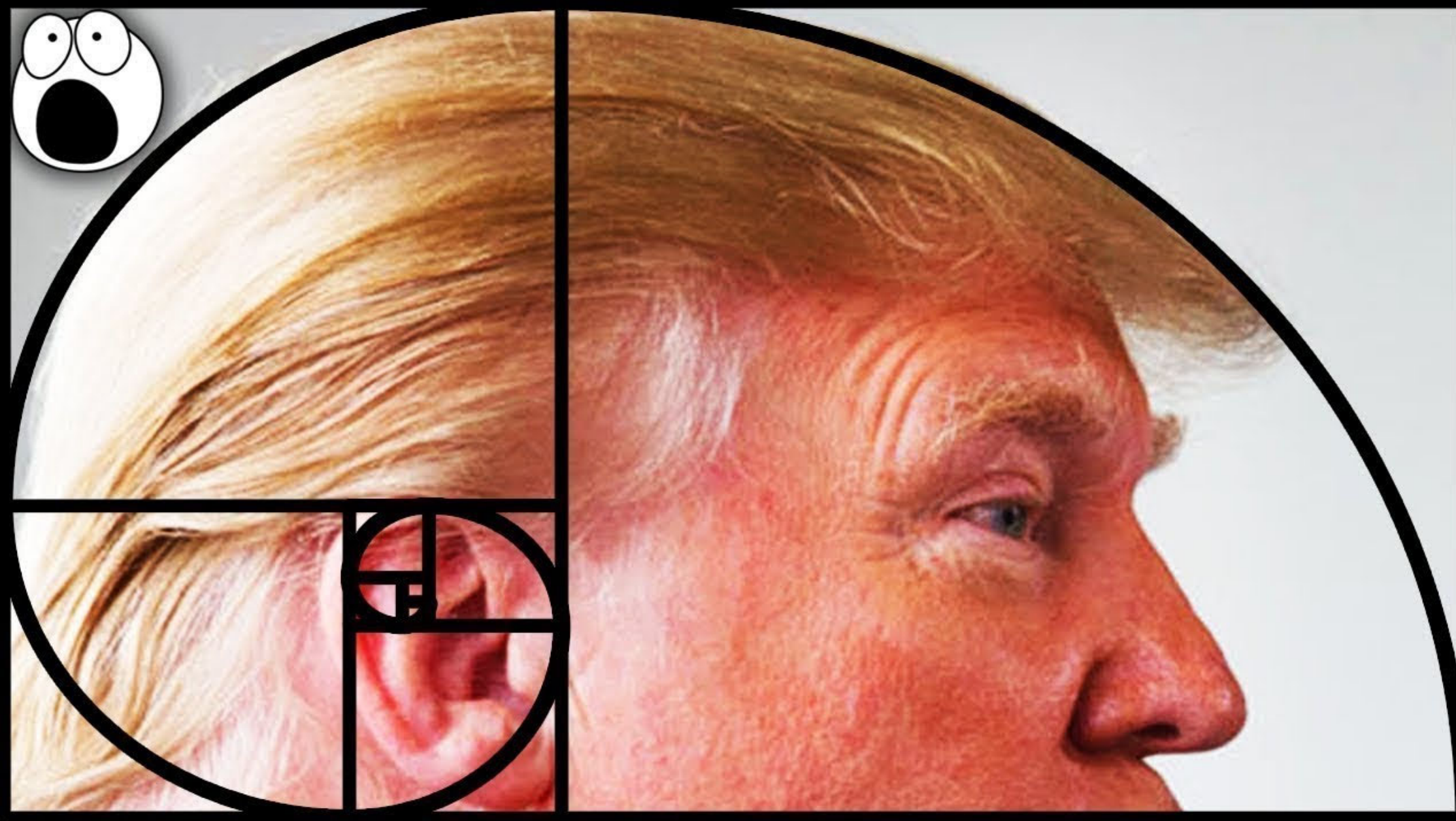
And, as in uffish thought he stood,  
The Jabberwock, with eyes of flame,  
Came whiffling through the tulgey wood,  
And burbled as it came!

One two! One two! And through and through  
The vorpal blade went snicker-snack!  
He left it dead, and with its head  
He went galumphing back.

"And hast thou slain the Jabberwock?  
Come to my arms, my beamish boy!  
O frabjous day! Callooh! Callay!"  
He chortled in his joy.

'Twas brillig, and the slithy toves  
Did gyre and gimble in the wabe;  
All mimsy were the borogoves,  
And the mome raths outgrabe.





# Geen wiskunde maar numerologie

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## Pythagorean Numerology

|   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| A | B | C | D | E | F | G | H | I |
| J | K | L | M | N | O | P | Q | R |
| S | T | U | V | W | X | Y | Z |   |

J-o-h-a-n B-r-a-e-c-k-m-a-n

X

hocus pocus numerologie

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