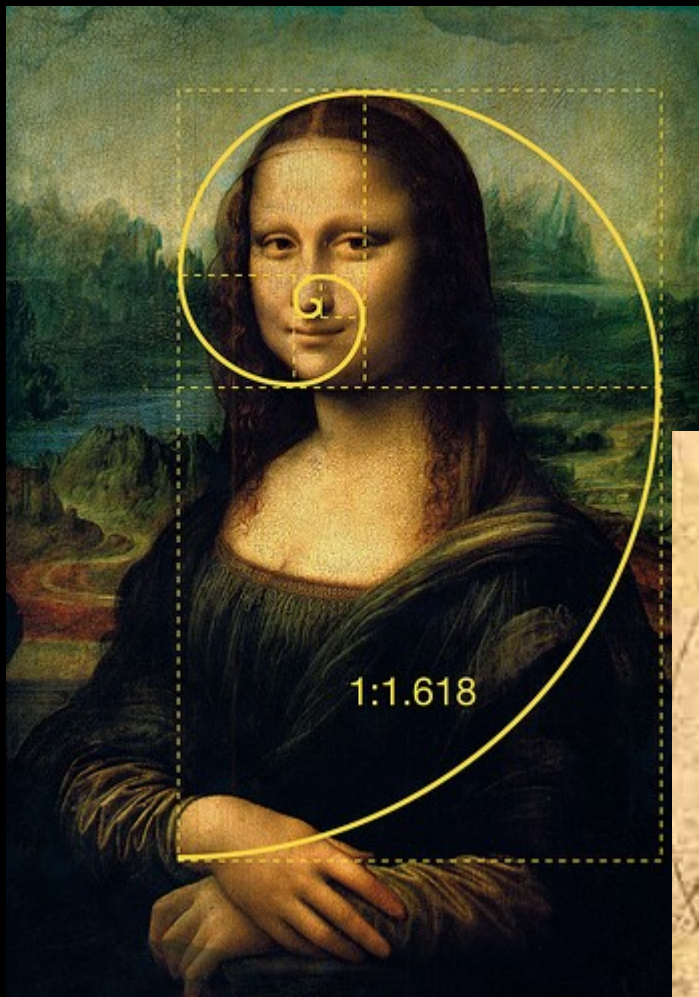
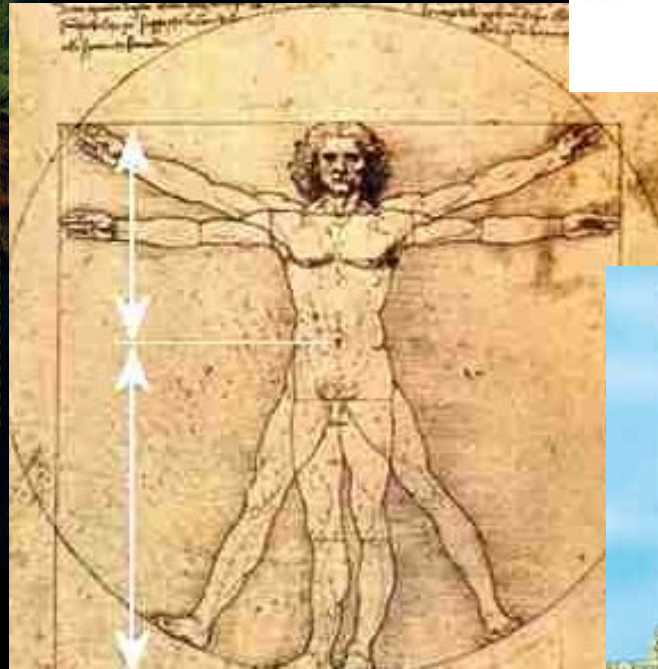


Golden ratio

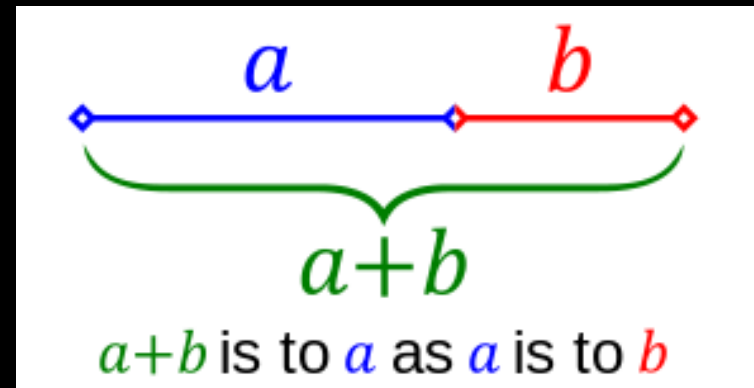
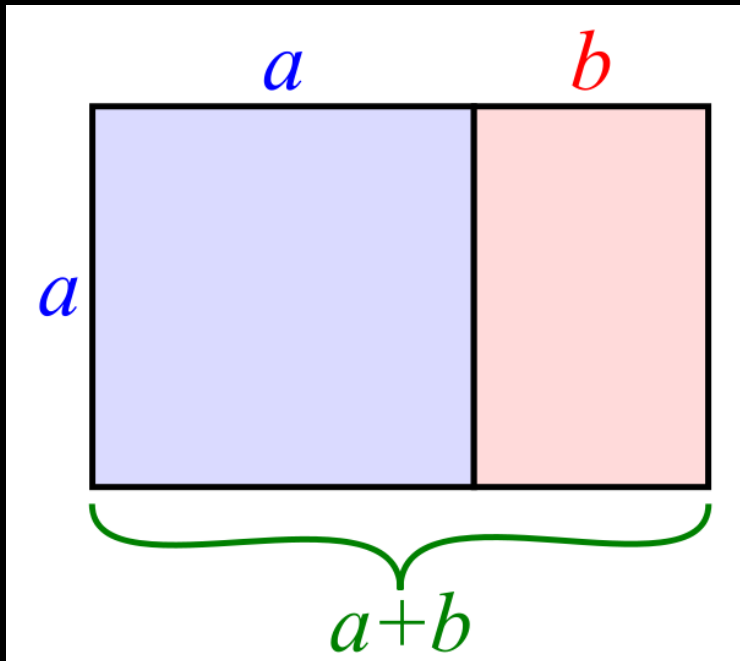


Φ
phi

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

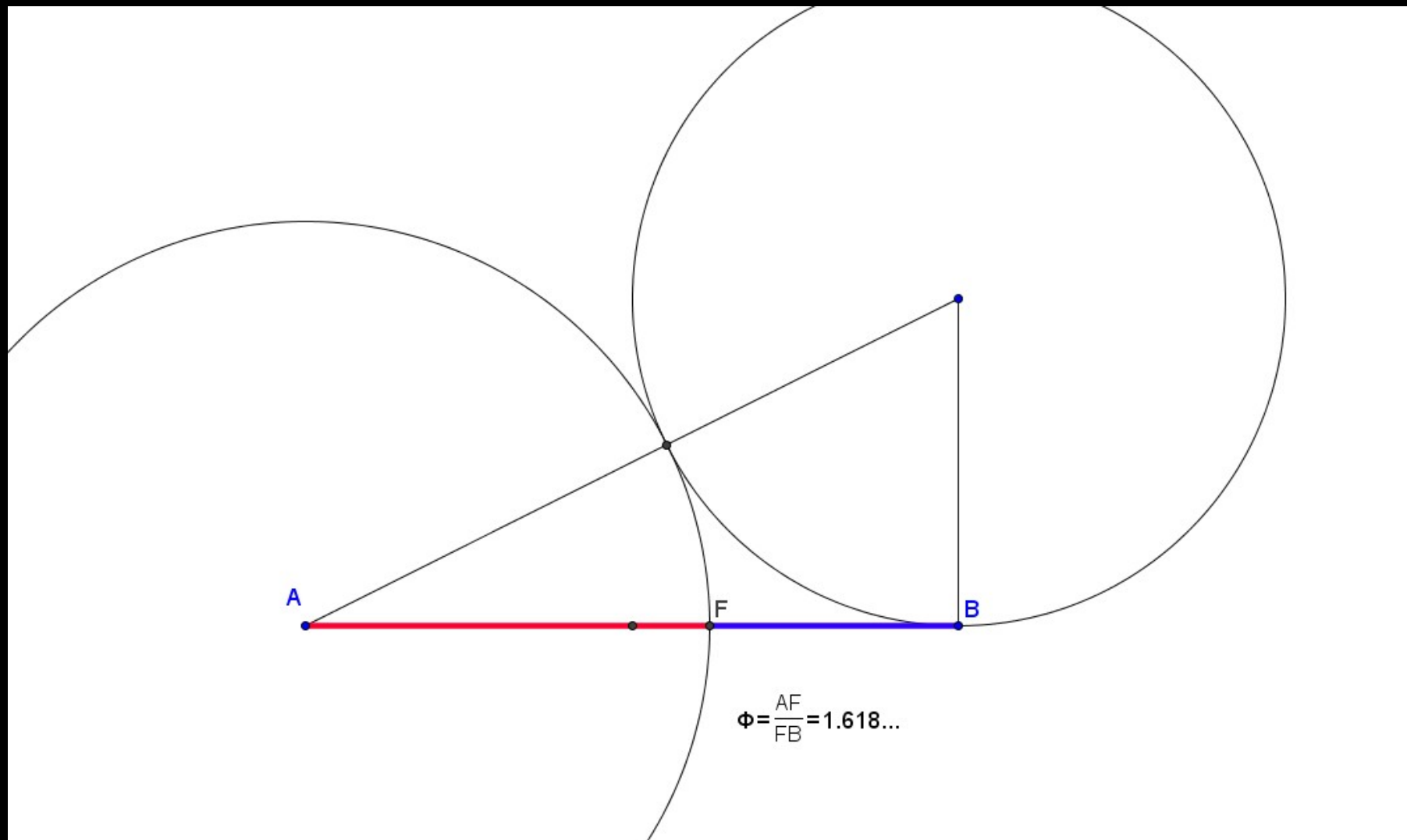


In mathematics, two quantities are in **the golden ratio** if their ratio is the same as the ratio of their sum to the larger of the two quantities.

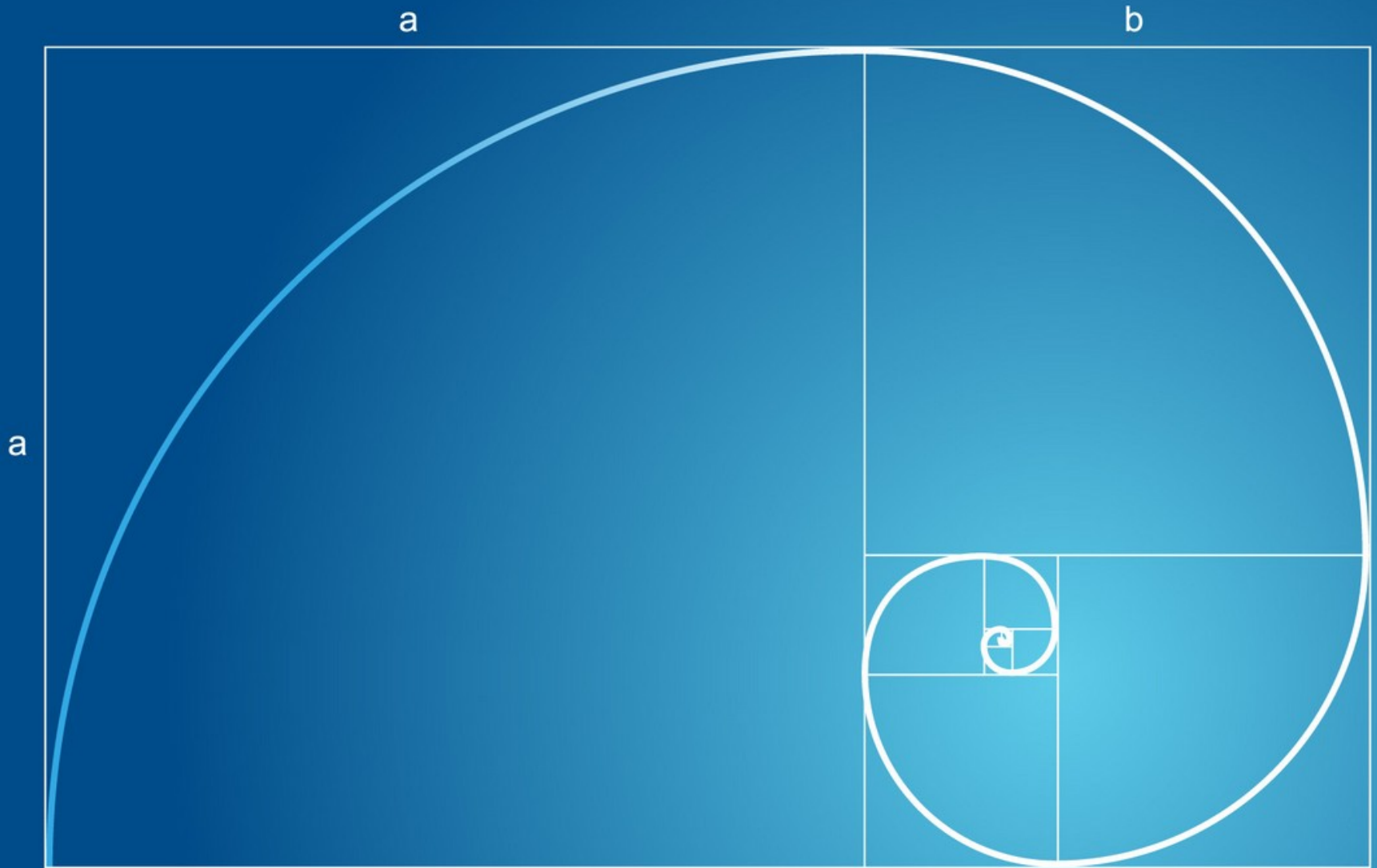


$$(a + b) : a = a : b$$

How to divide a line segment in two line segments where the ratio of the longer to the shorter line segment is the golden ratio

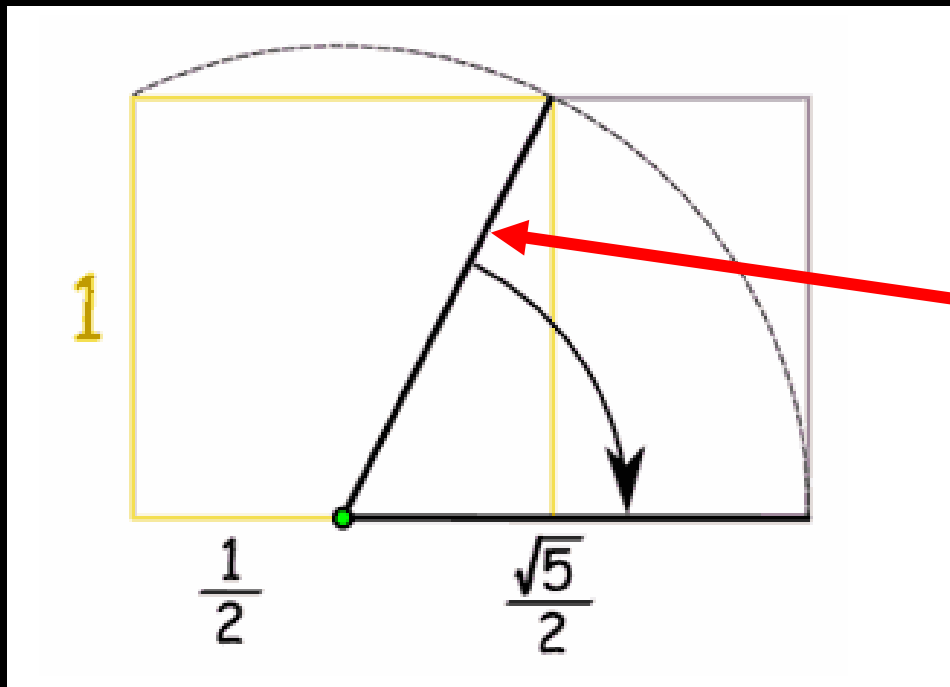


The golden spiral



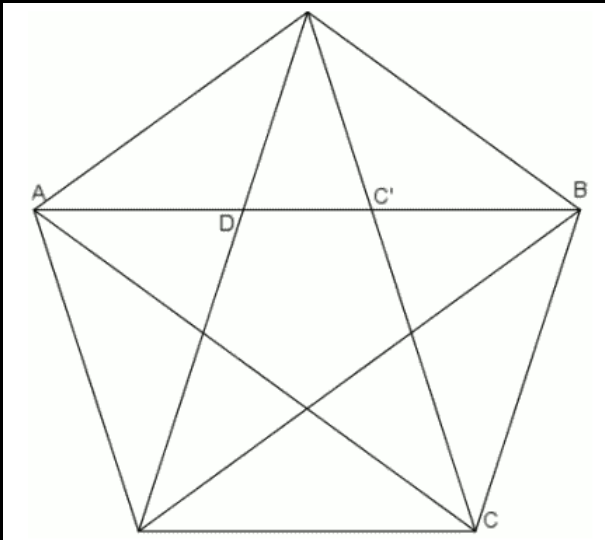
$$\frac{a+b}{a} = \frac{a}{b} = \varphi \approx 1,61803$$

A rectangle with the golden ratio...

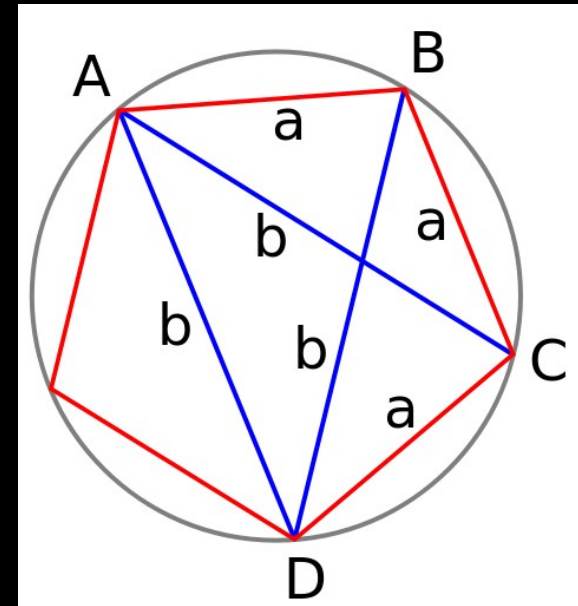
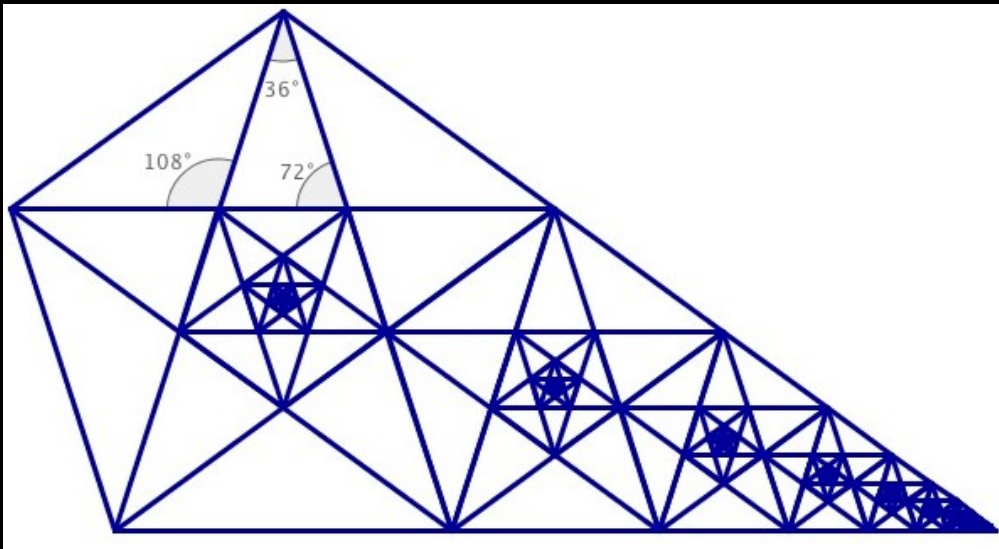


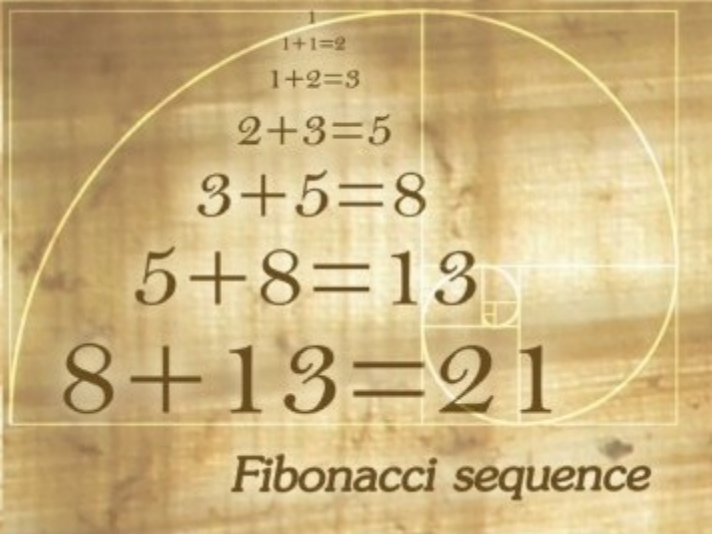
$$\sqrt{\left(\frac{1}{2}\right)^2 + 1^2} = \sqrt{\frac{1}{4} + 1} = \sqrt{\frac{1+4}{4}} = \sqrt{\frac{5}{4}} = \frac{\sqrt{5}}{2}$$

$$\frac{1}{2} + \frac{\sqrt{5}}{2} = \frac{1 + \sqrt{5}}{2} = \varphi = 1.618033988\dots$$



The golden ratio in a **regular pentagon**

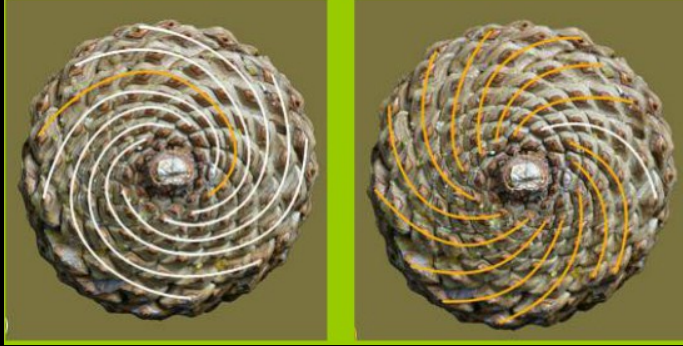




A	B	B/A
2	3	1.5
3	5	1.666666666...
5	8	1.6
8	13	1.625
...
144	233	1.618055556...
233	377	1.618025751...
...

Fibonacci
 and its
 rabbits...

Pinecone: 8 and 13 spirals



Bellis Perennis: 21 and 34 spirals



The beauty of math...



...So, let's go eTwinners... Ciao, Manuela.