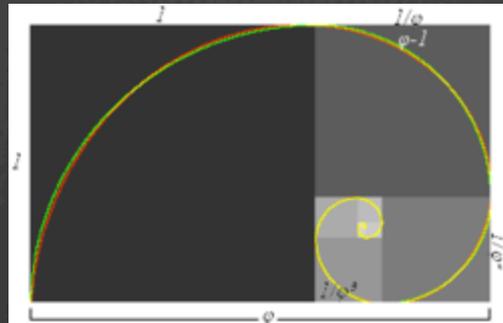


The Golden Mean



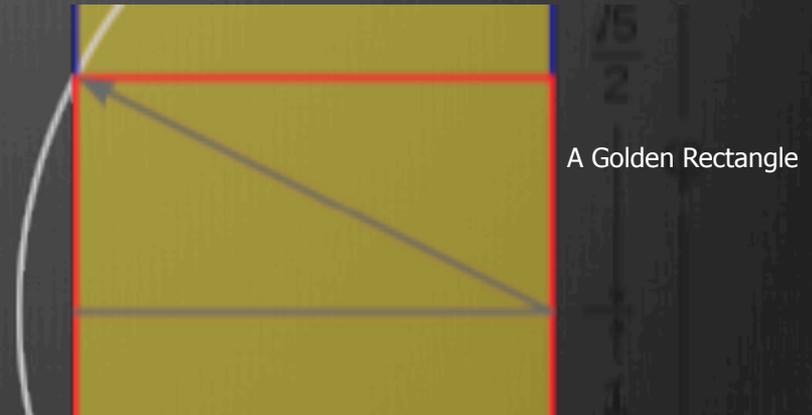
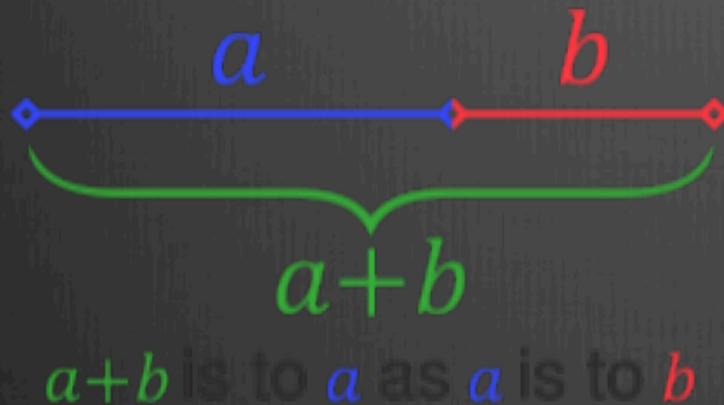
By Susan Convery Foltz
Broward College
EPI 003 Technology
February 8, 2009

The Golden Mean

- ⊗ The Golden Mean is the divine proportion, or golden section, represented by the Greek letter phi Φ . It is one of those mysterious natural numbers like pi π that seems to arise out of the basic structure of the universe.
- ⊗ Phi appears clearly and regularly in the realm of things that grow and unfold in steps, especially living things, but also in art and architecture.

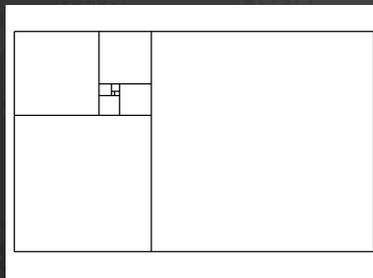
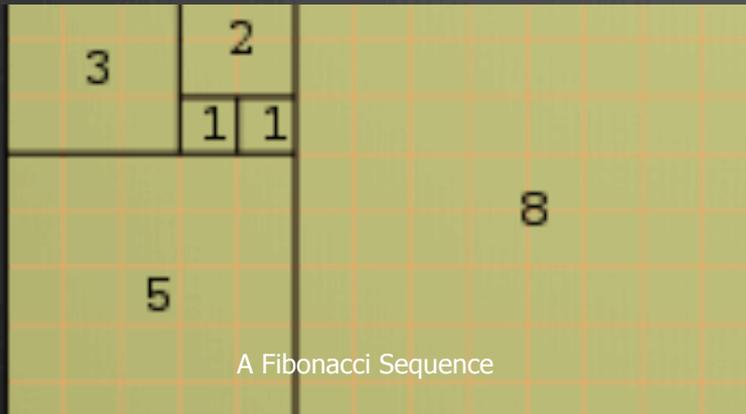


How to Calculate the Golden Mean:



- ⦿ The Golden Mean is the ratio most pleasing to the eye.
- ⦿ The ratio is the same as the ratio of the number 1 to Phi Φ (1.6180339887)

Fibonacci Numbers and the Golden Mean

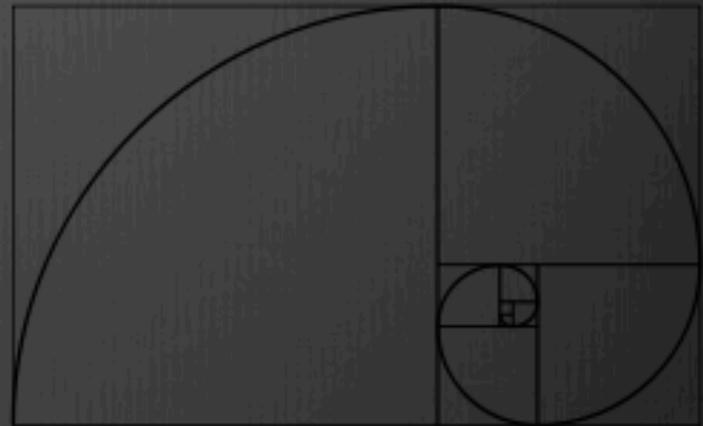


A Golden Sequence

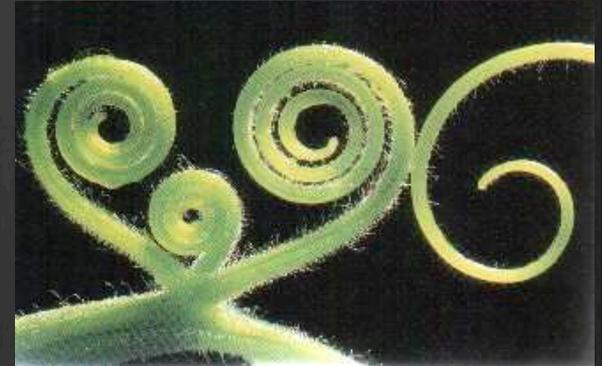
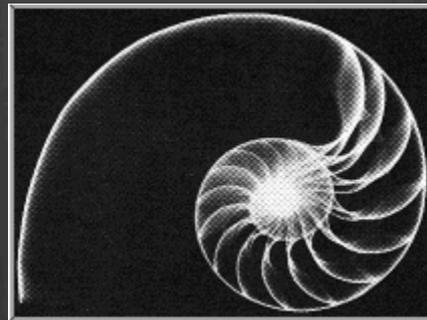
- The 11th century Mathematician, Leonardo of Pisa, derived a formula for the same relationship commonly found in nature. All Fibonacci Series begin with 0, 1 and every number thereafter is the sum of the two previous numbers. 0, 1, 1, 2, 3, 5, 8, 13, 21, 34....
- As a Fibonacci rectangle grows larger it resembles the perfect proportions of the Golden Mean

To Create a Golden Spiral

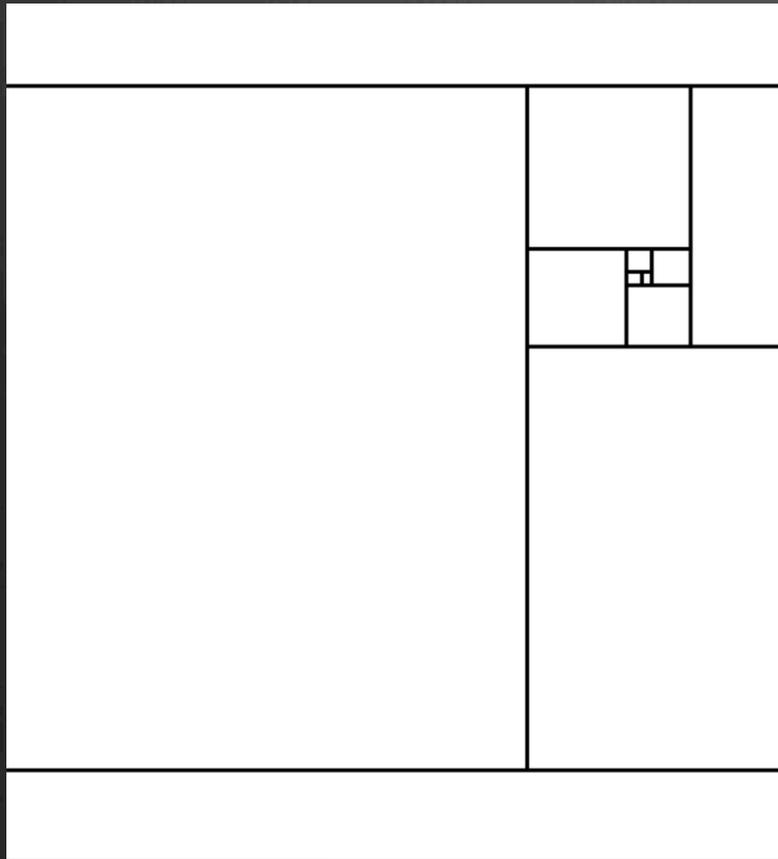
- ⊗ We now draw a quarter circle on each square and bring all the squares back to where they were in the original rectangle. There then emerges a winding (logarithmic) spiral. By spinning the pinwheel in clockwise or counterclockwise direction, the spiral pattern implodes into the pole or expands outwardly.



Examples of Golden Spirals found in nature



The Golden Mean in Art



- ⊗ When a building or artwork is designed to incorporate Φ it has the purest possible proportions and is the most pleasing to the eye.
- ⊗ Since painting and photography are most often produced on a rectangular field we can use this formula to create a Golden Rectangle and find the most harmonious location for our center of interest.

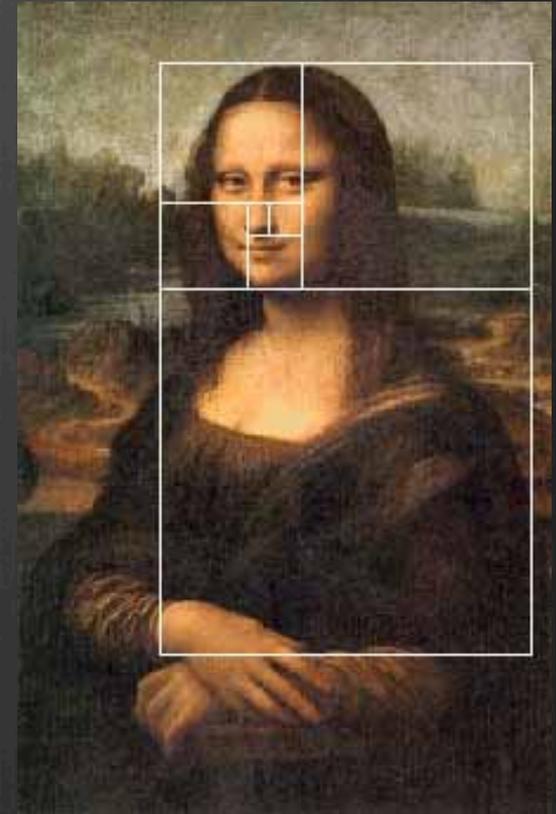
The Golden Mean in Music and Architecture



- ⦿ The early Greeks used these formulas to produce the Parthenon
- ⦿ Mozart's sonata's seem to divide into parts at the golden section of the total time of the work.
- ⦿ In Beethoven's 5th symphony the opening motto is repeated at exactly the golden section of the work.

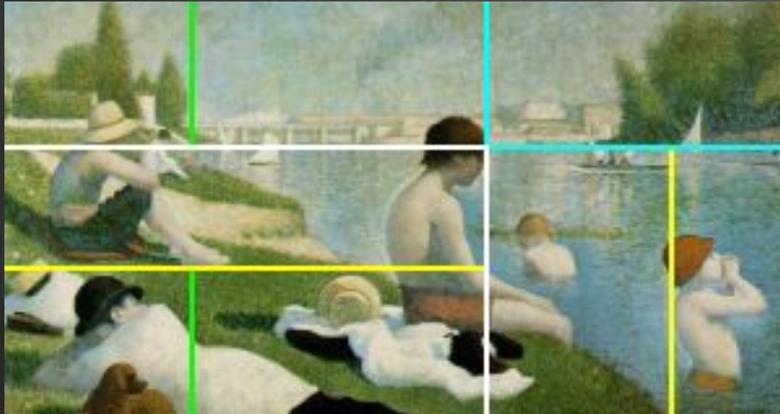
Famous Artists and the Golden Mean

- ⊗ Leonardo Da Vinci was a great Italian Renaissance painter, as well as a scientist and inventor, who lived in 15th century. In his art, Da Vinci carefully examined the proportions of the human body and found many occurrences of the golden ratio and golden rectangles.



- ⊗ Follow this link for more on the Mona Lisa
[http://
britton.disted.camosun.bc.ca/
monalisa.swf](http://britton.disted.camosun.bc.ca/monalisa.swf)

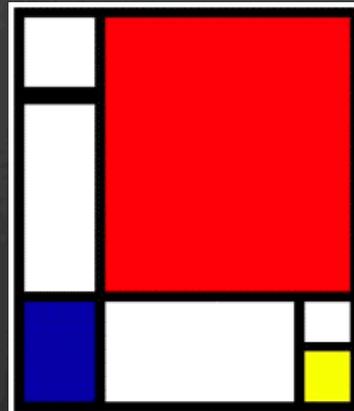
More Artists who used the Golden Mean



Georges Seurat



Henri Cartier-Bresson



Piet Mondrian