

[asa Jizo](#)

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Mathematics · Enthusiastic amateur mathematician

Do you see any creativity in math?

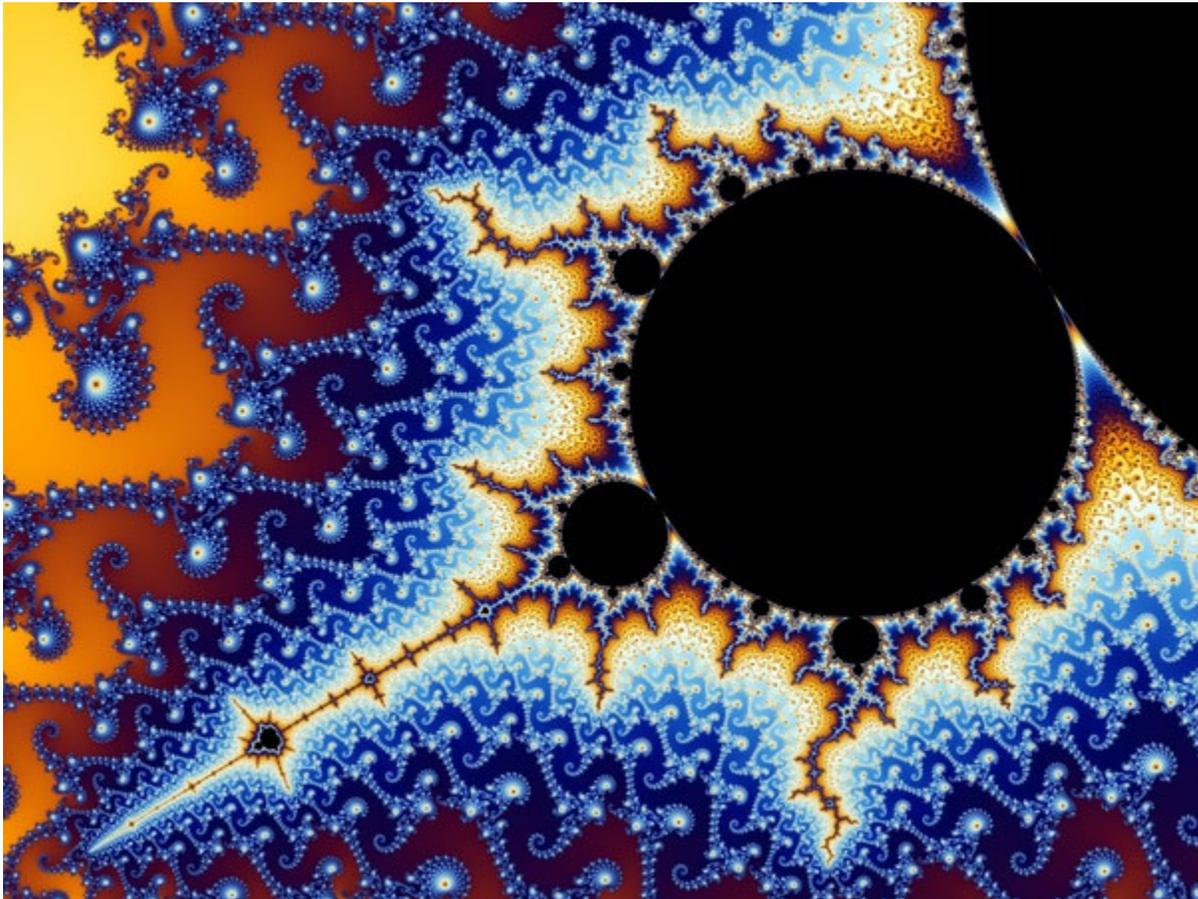
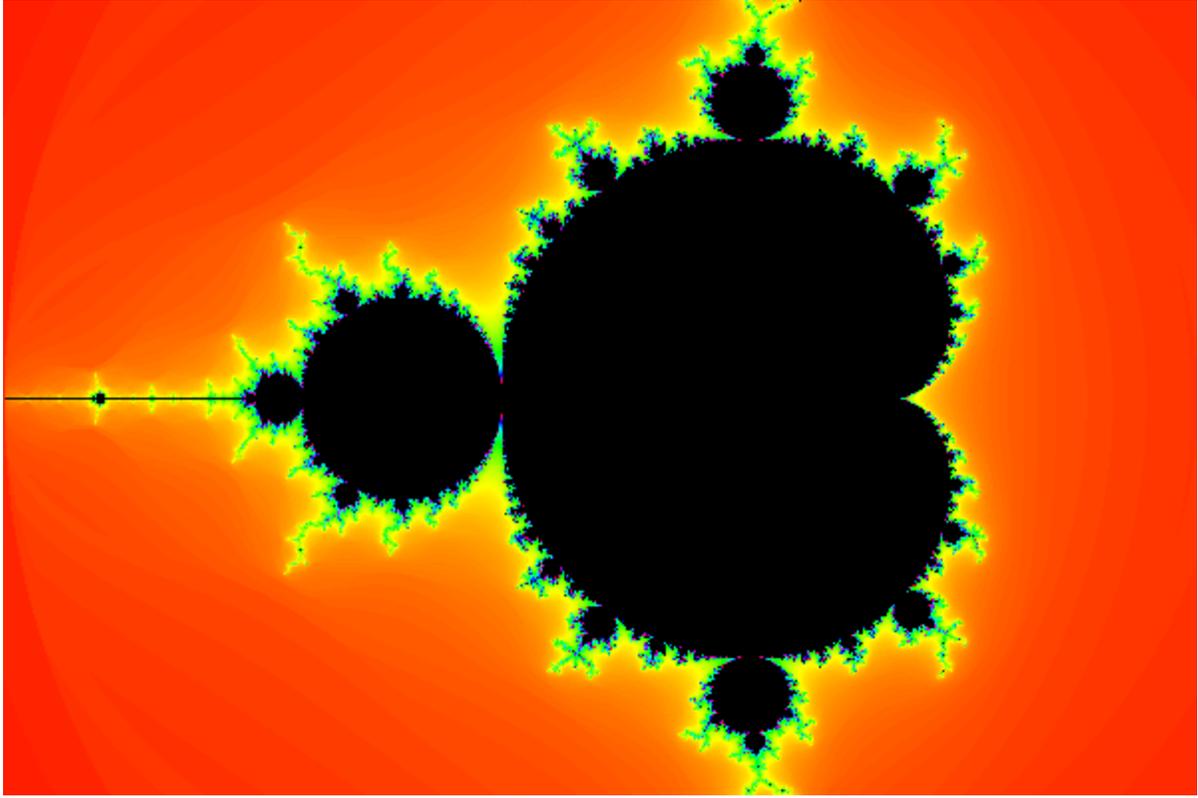
Yes, absolutely.

This is what mathematics is to the average person:

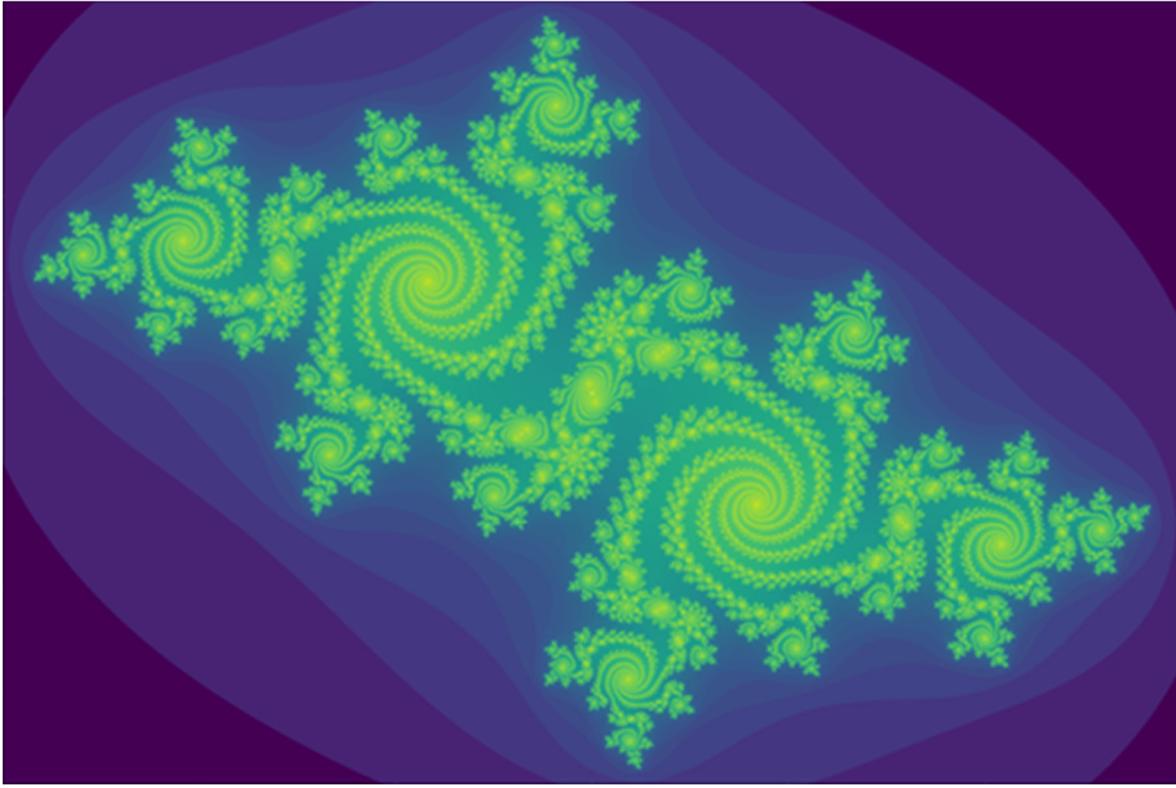
- (1.) $17x + 12 = 54 - 4x.$
- (2.) $6x - 16 = 5x - 9.$
- (3.) $4x - 4 = 3x + 2.$
- (4.) $13x - 25 = 9x - 13.$
- (5.) $9x + 2 = 7x + 15.$
- (6.) $3x + 39 = 2x + 42.$
- (7.) $5x - 3x = 36 - x.$
- (8.) $7x - 12 + 5 = 8x - 24.$
- (9.) $30 - x + 12 = 3x + 2.$
- (10.) $6x - 30 = 60 - 8x - 20.$
- (11.) $9x - 16 = 3x - (x - 5).$
- (12.) $5x - 10 + 2x = 6(x + 1) - x.$
- (13.) $2(5x + 1) = x + 2.$
- (14.) $5(x + 1) = 2(x - 5) + 6.$
- (15.) $3(x - 2) - 2(x - 3) - 5 = 0.$
- (16.) $(3 - 2x) + 3(1 - 4x) - 4(1 - 5x) = 2(1 - 3x.)$

Boring and repetitive.

This is what mathematics is actually about:

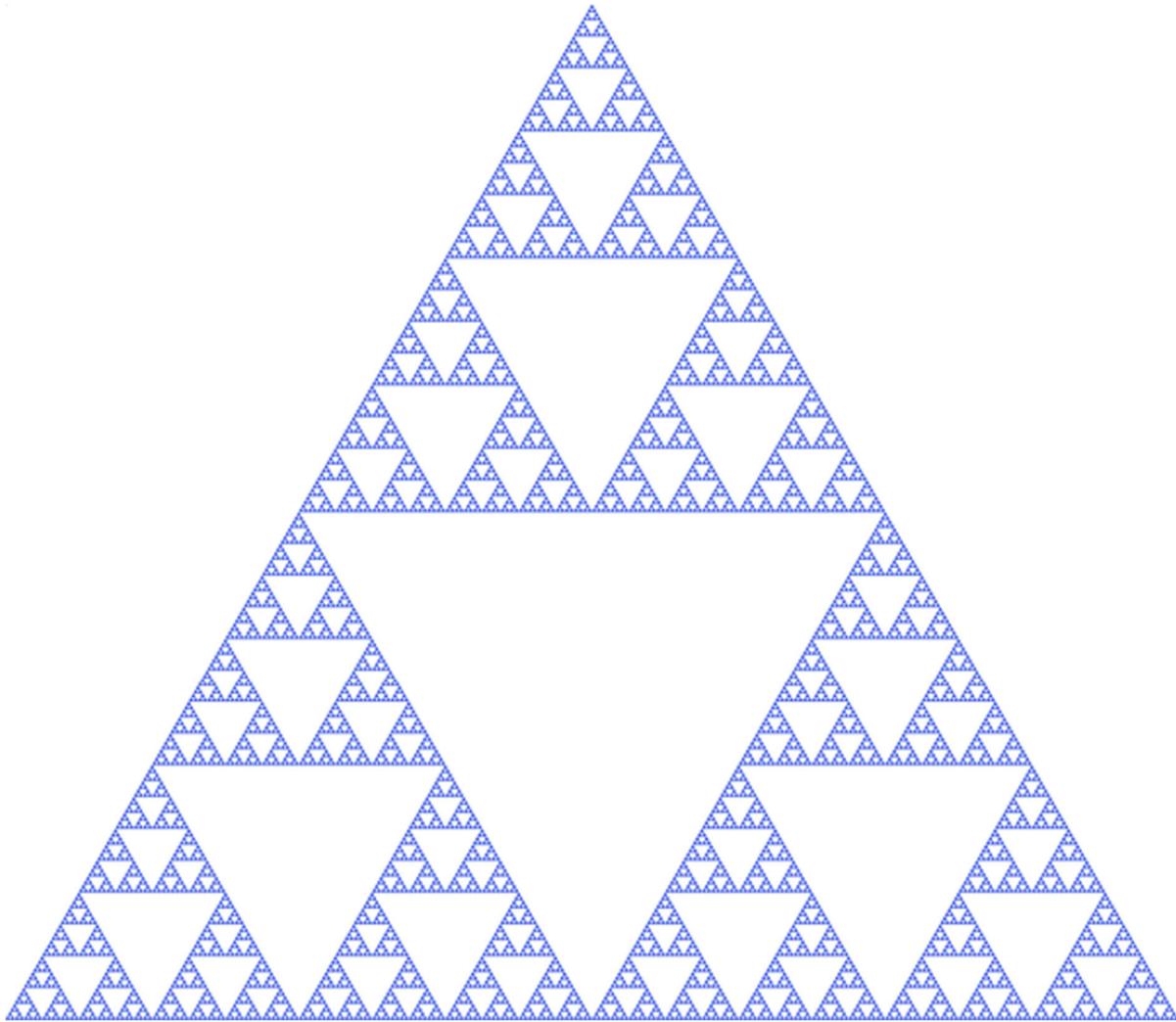


Mandelbrot Set

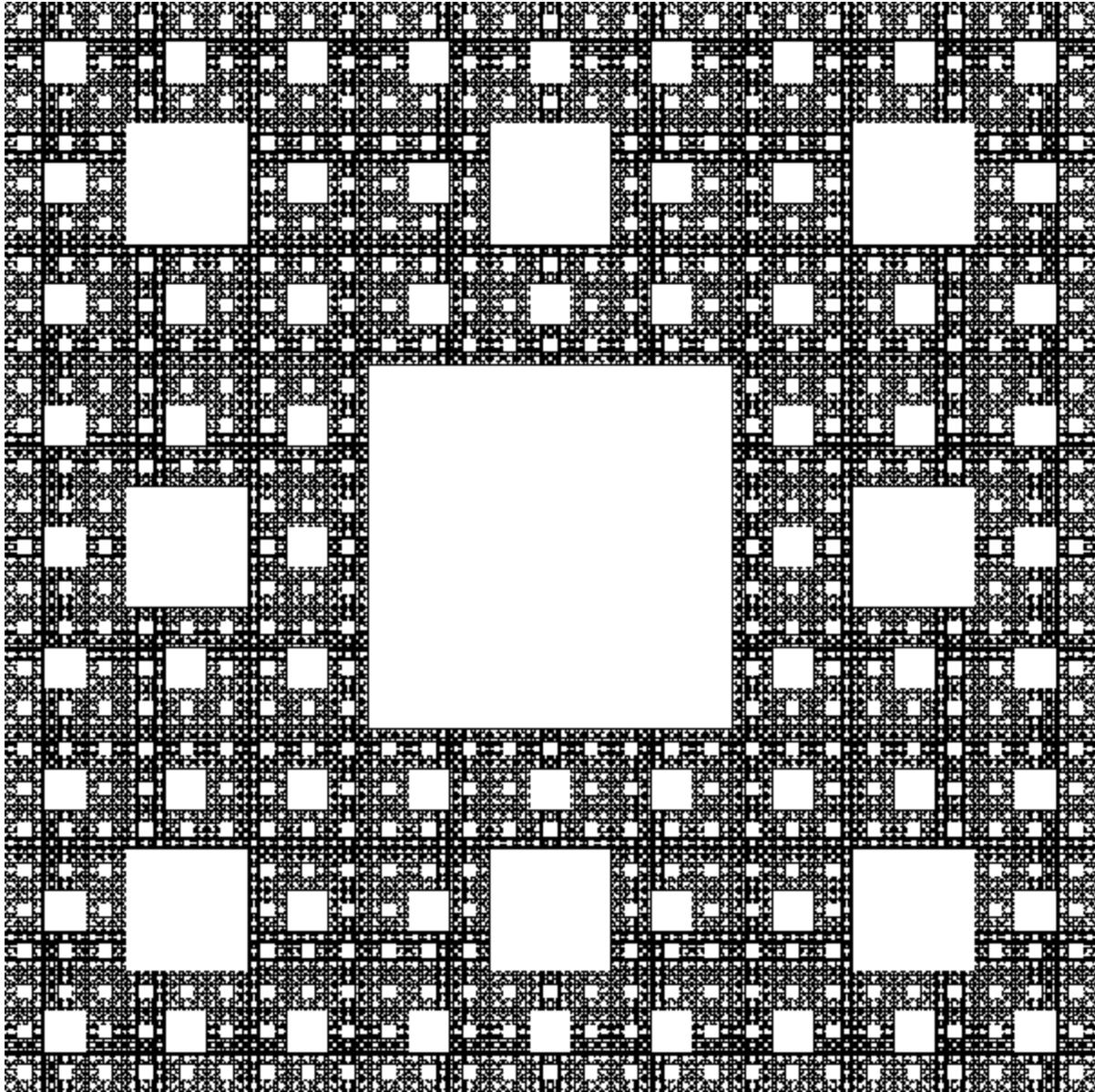


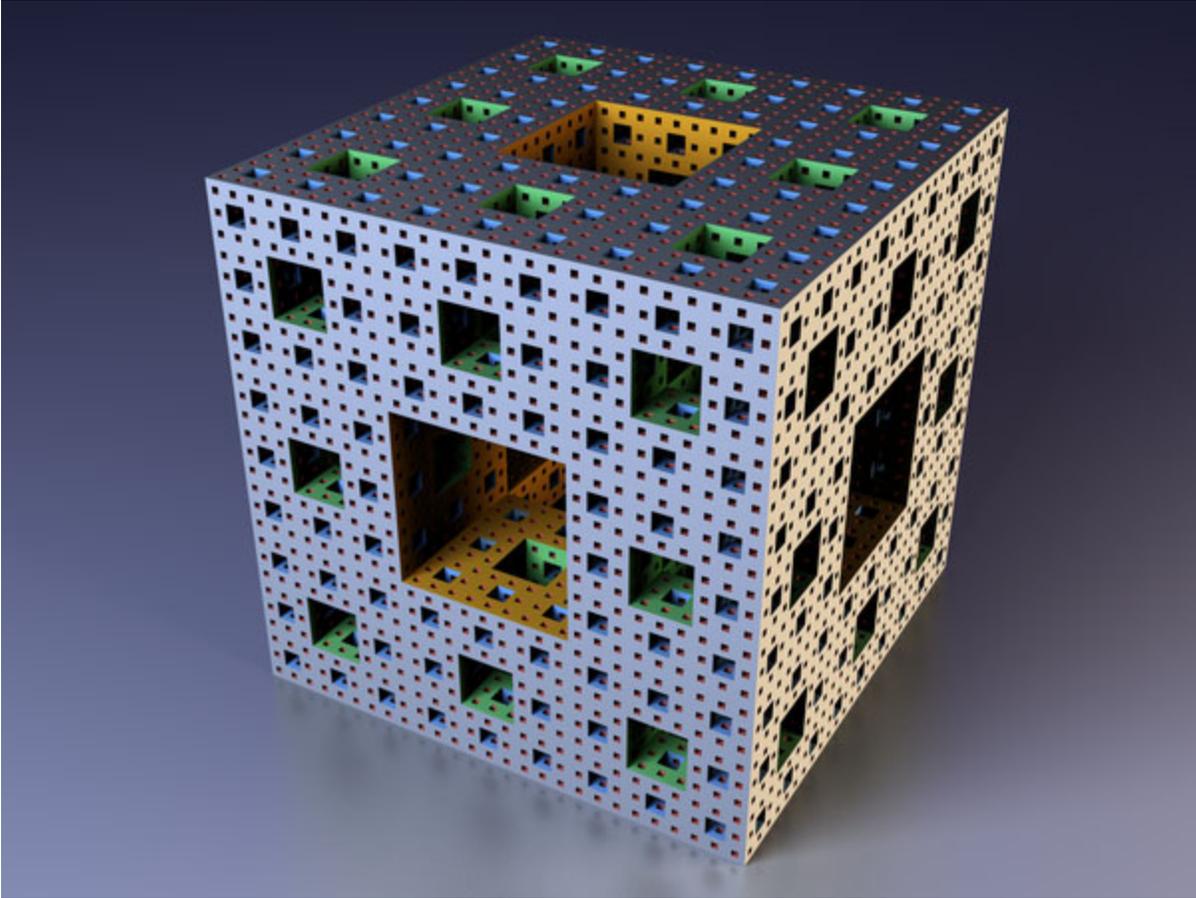
Julia Set

Koch Snowflake

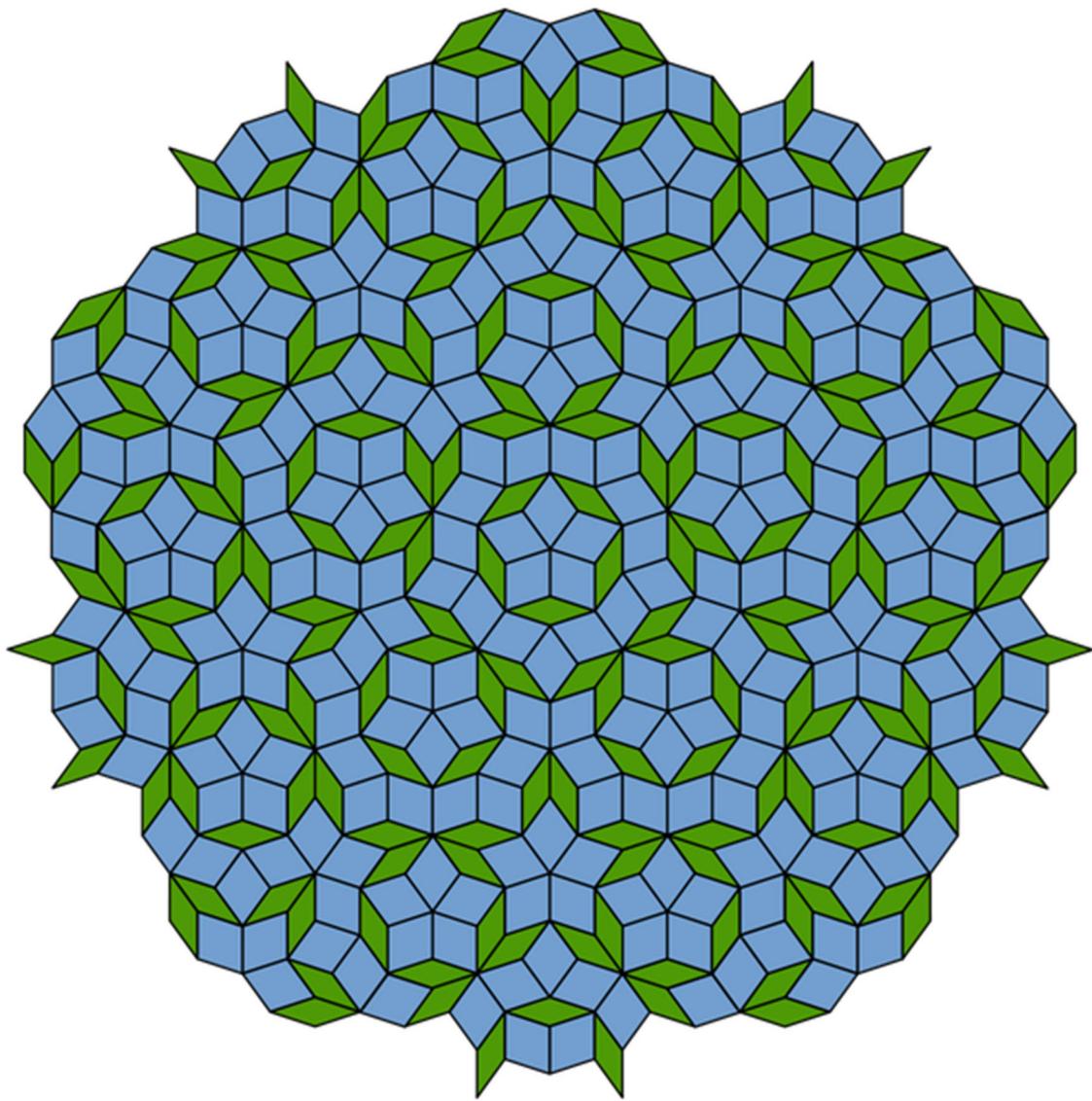


Sierpinski Triangle

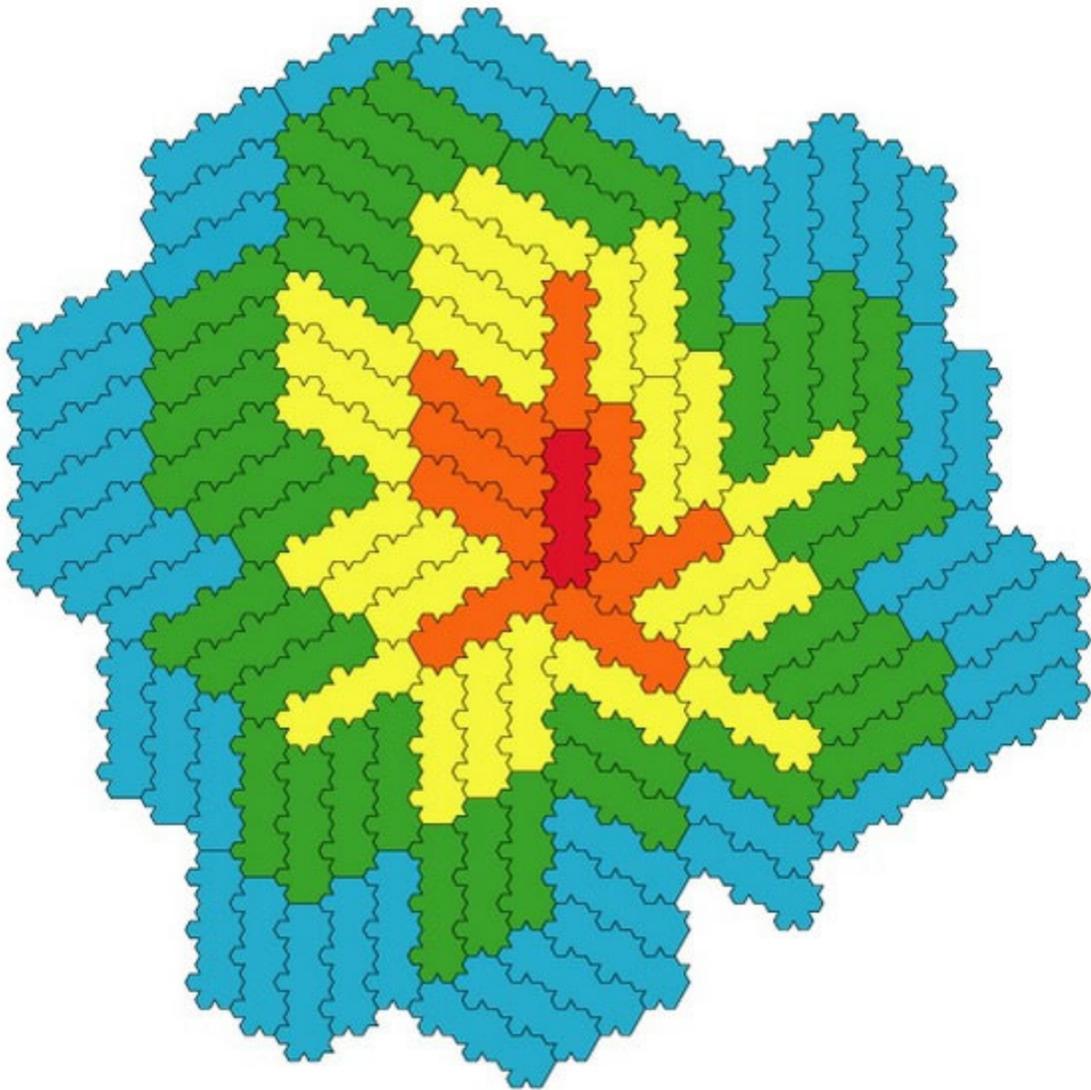




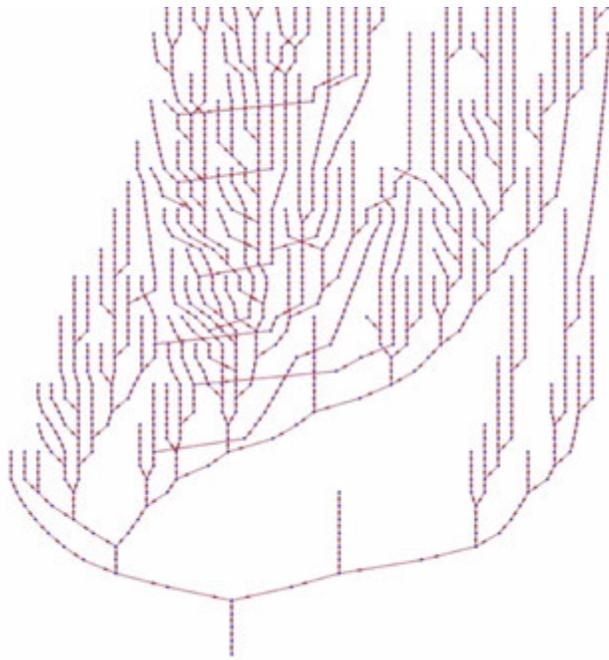
A Sierpinski Carpet and its 3D counterpart, the Menger Sponge



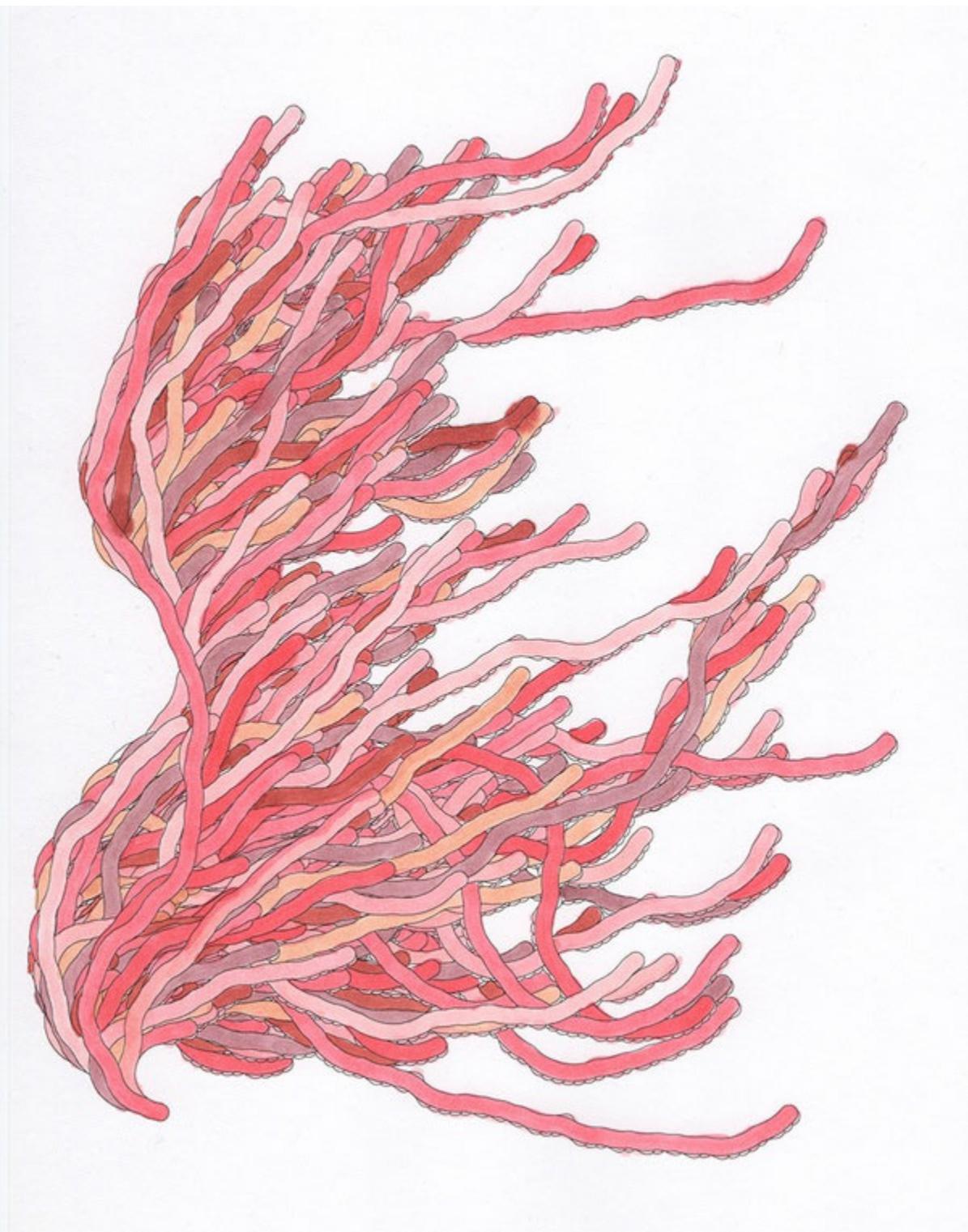
Penrose Tiling



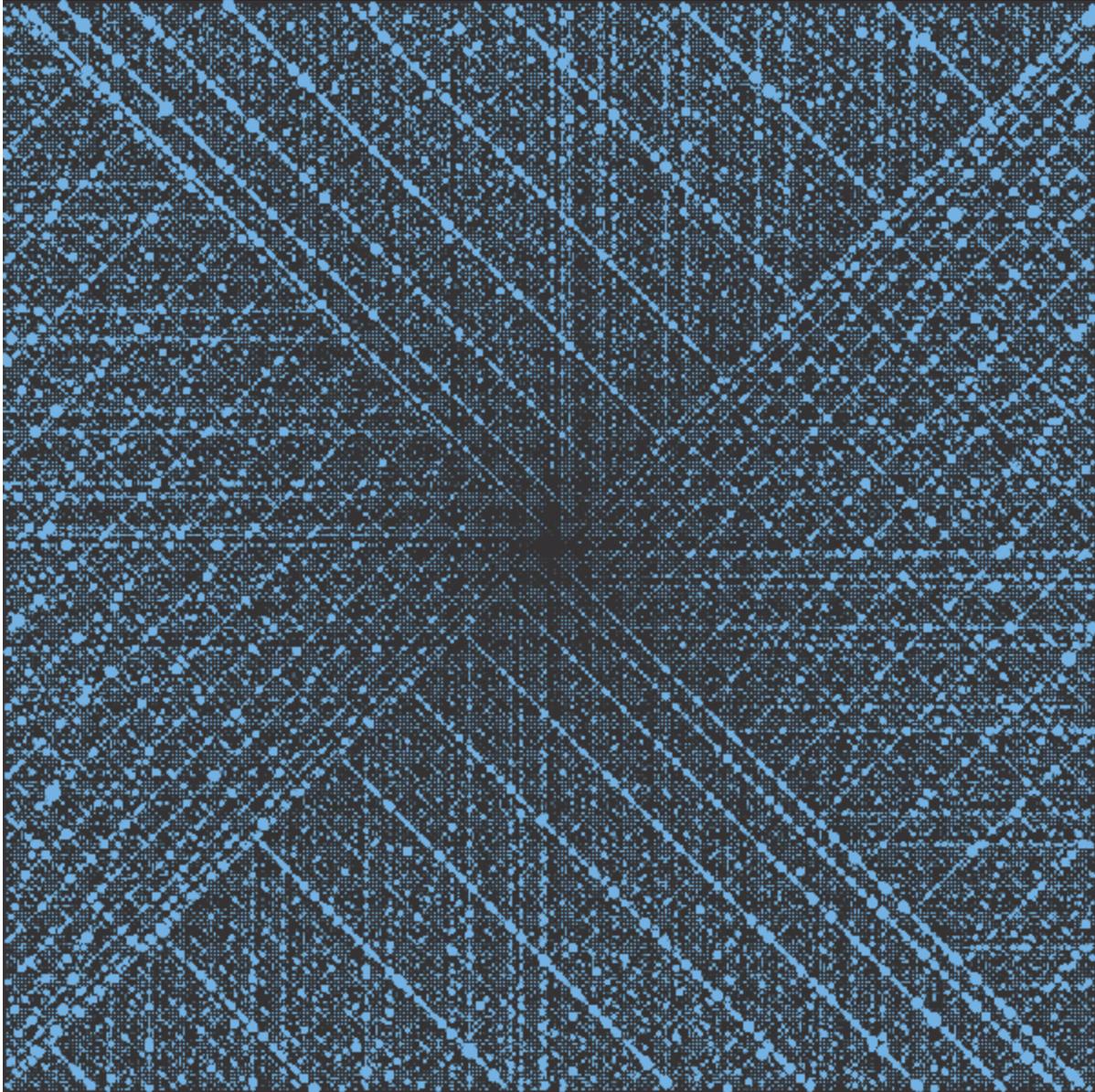
Heesch Tiling



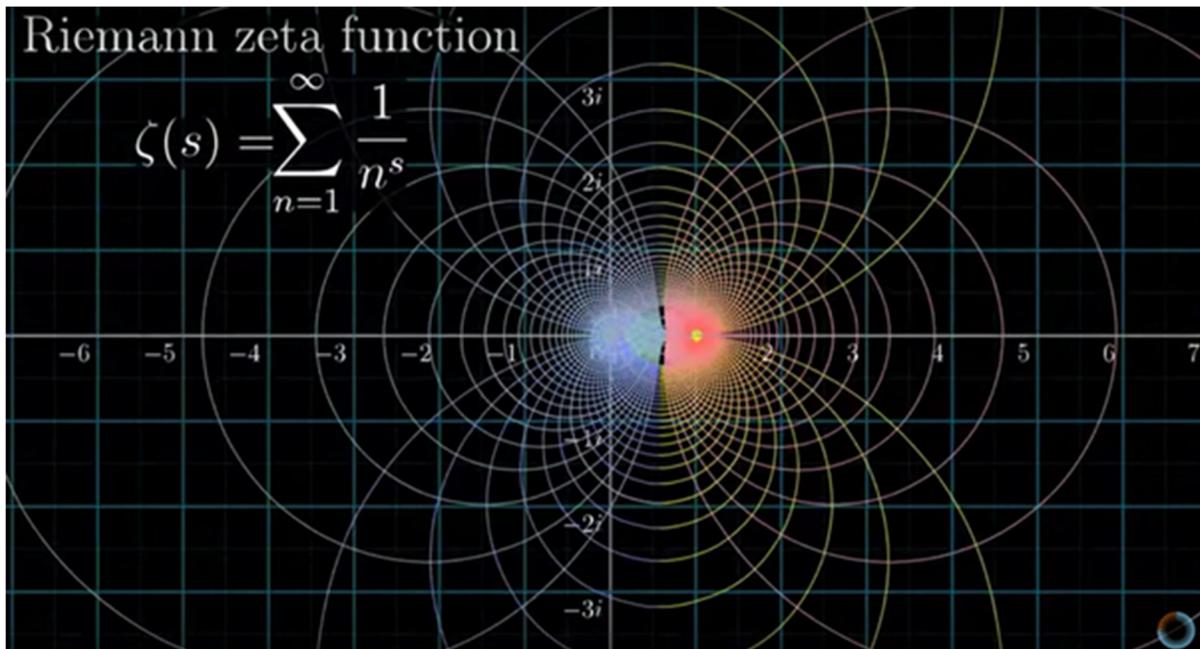
Jon McLoone



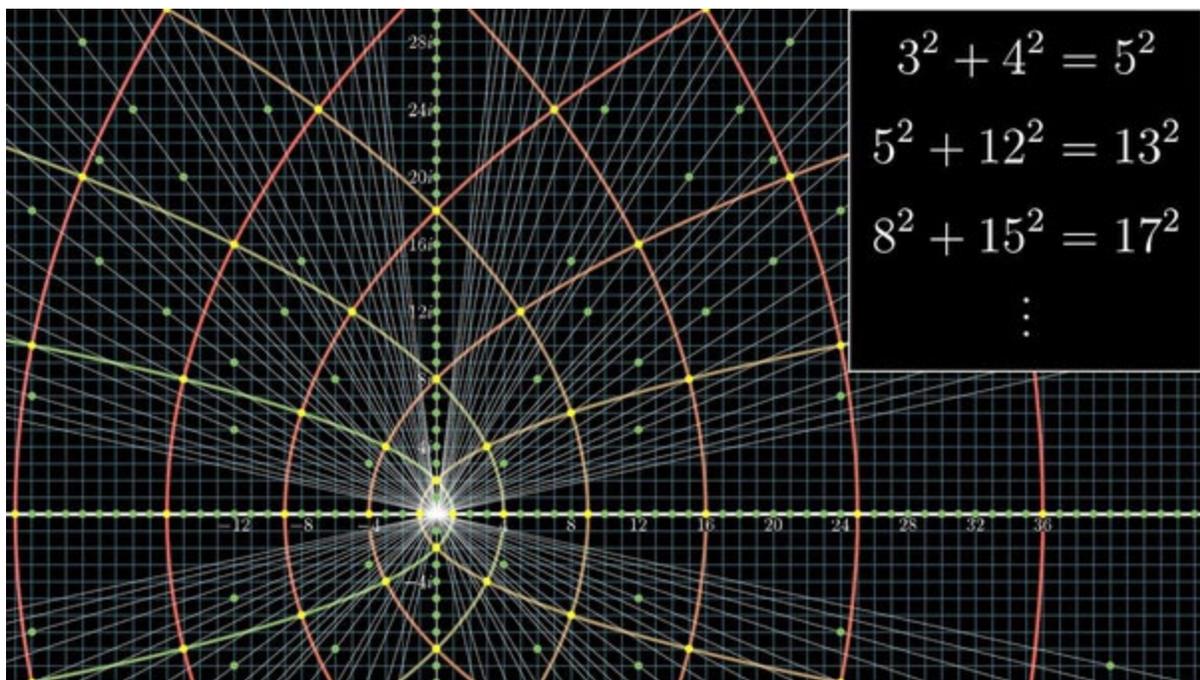
The Collatz Conjecture, visualized



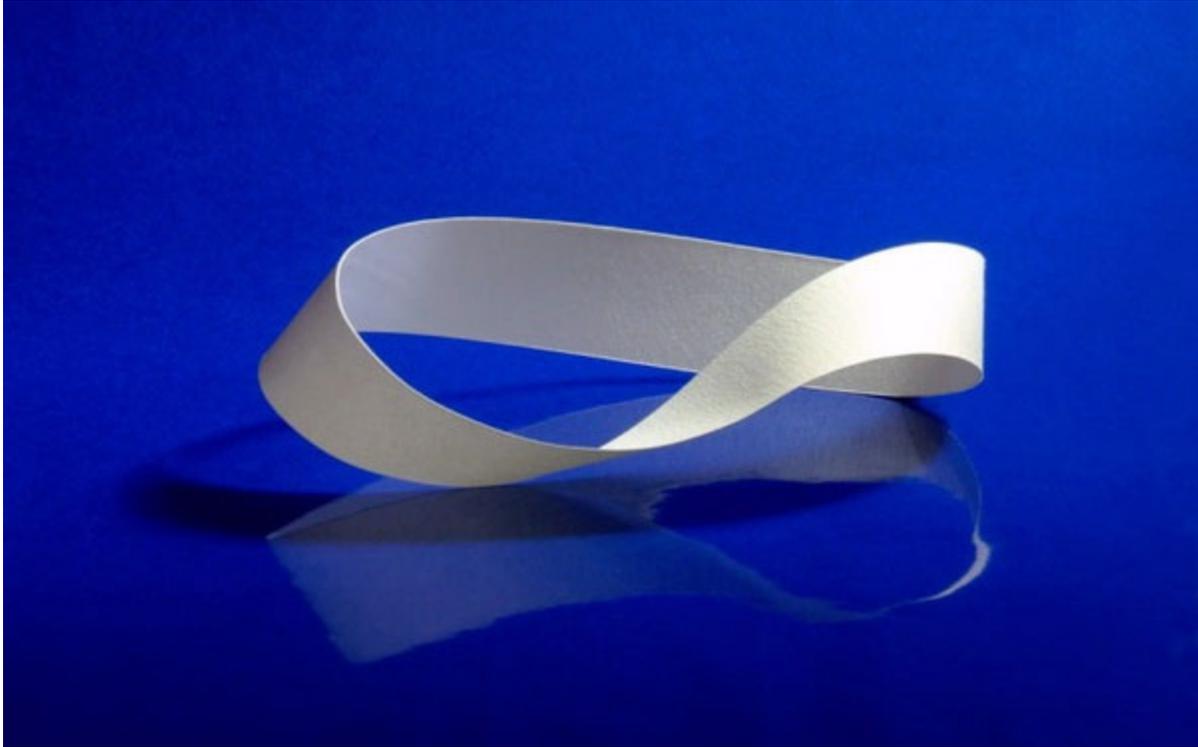
The Ulam Spiral, a graphical depiction of the set of prime numbers (dots) when written in a spiral



The Riemann Hypothesis, visualized



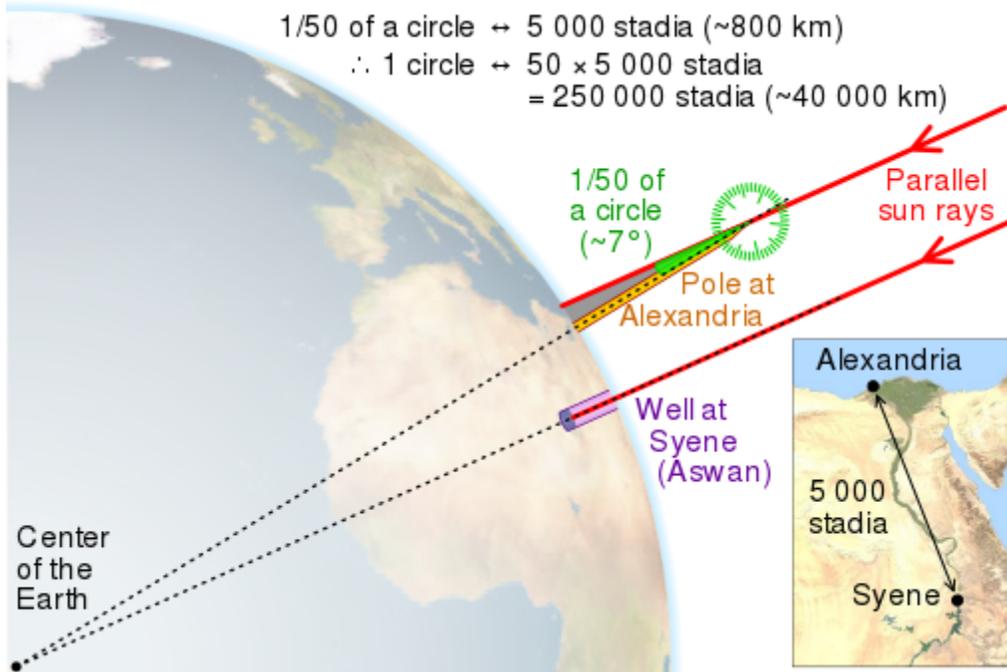
Pythagorean Triples, visualized



A Möbius Strip, a surface with only one side and only one edge



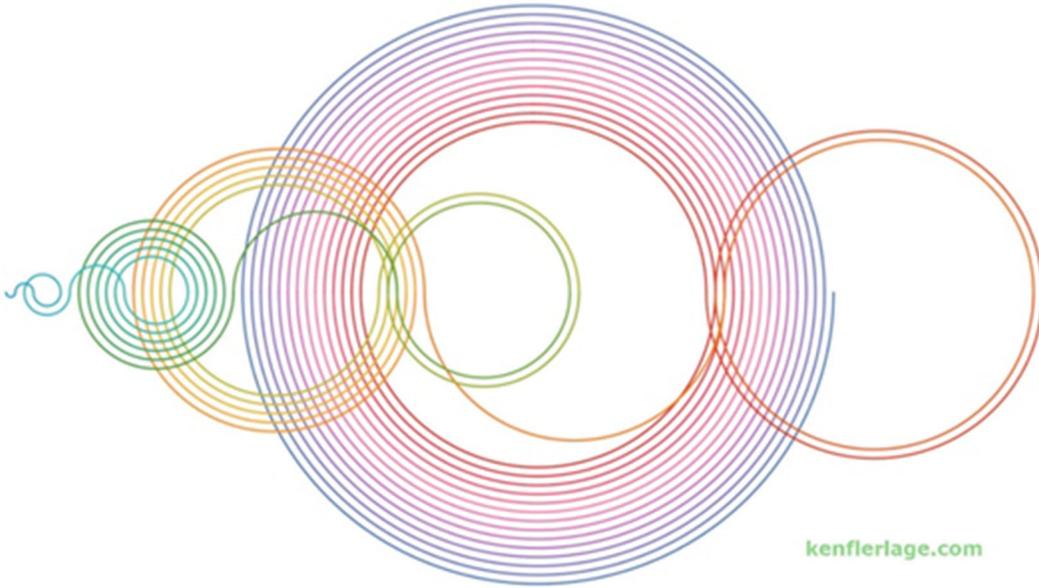
A Klein Bottle, a surface with no edge and no volume



Eratosthenes' calculation for the circumference of the Earth

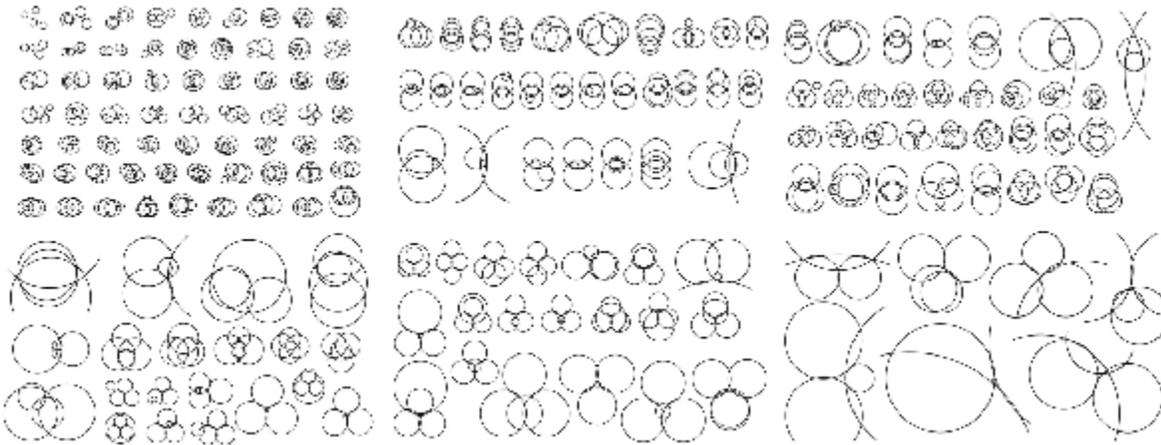


Conway's Game of Life

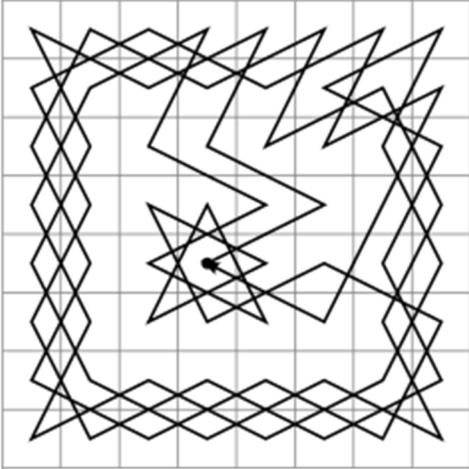


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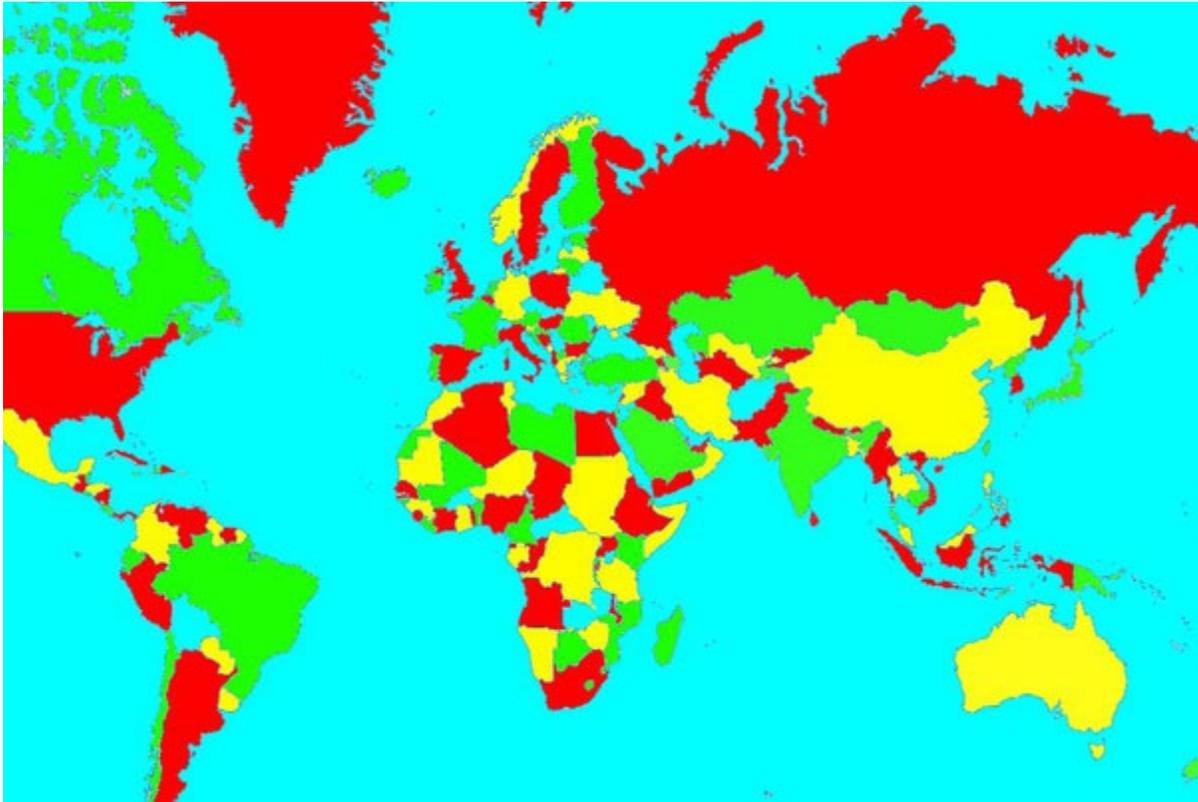
Recamán's Sequence



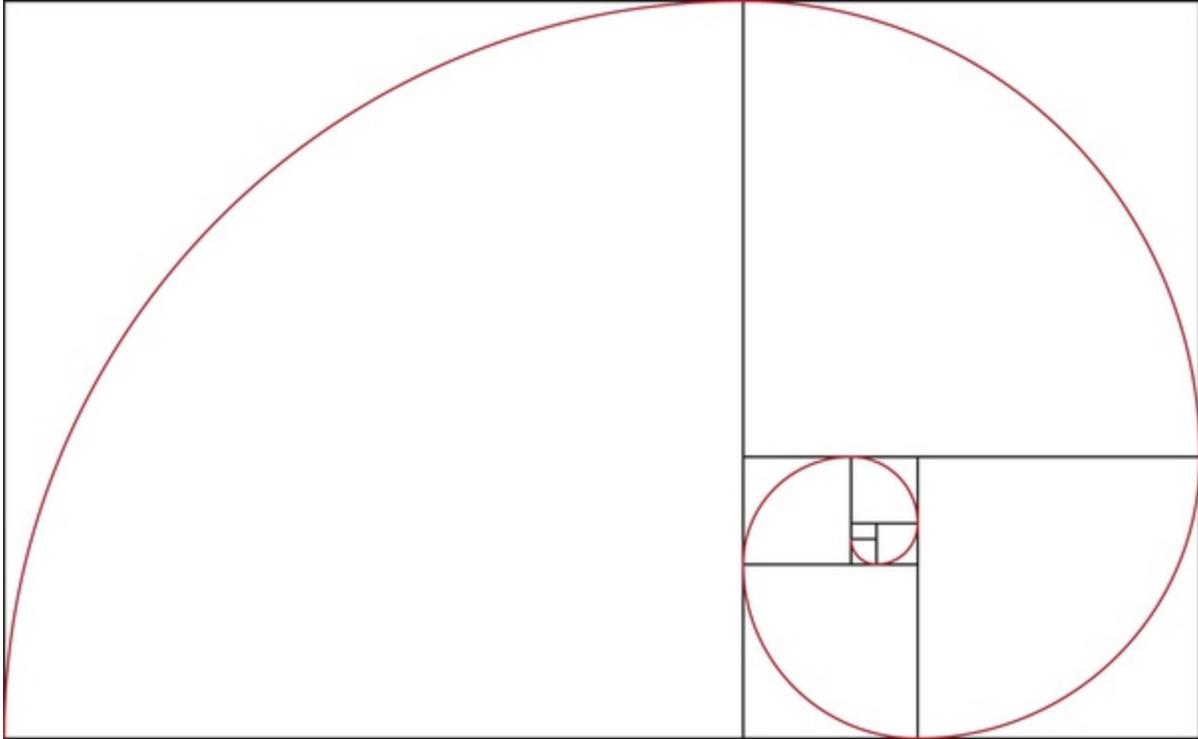
173 ways to overlap 4 circles



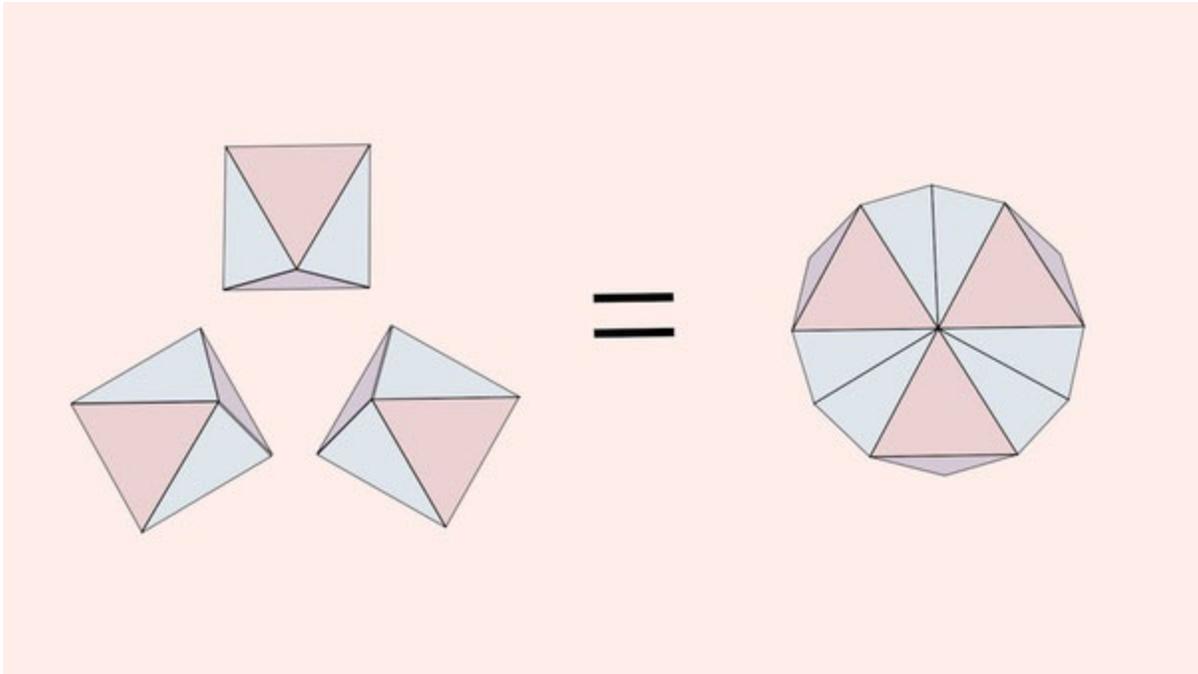
Knight's tour of a chessboard



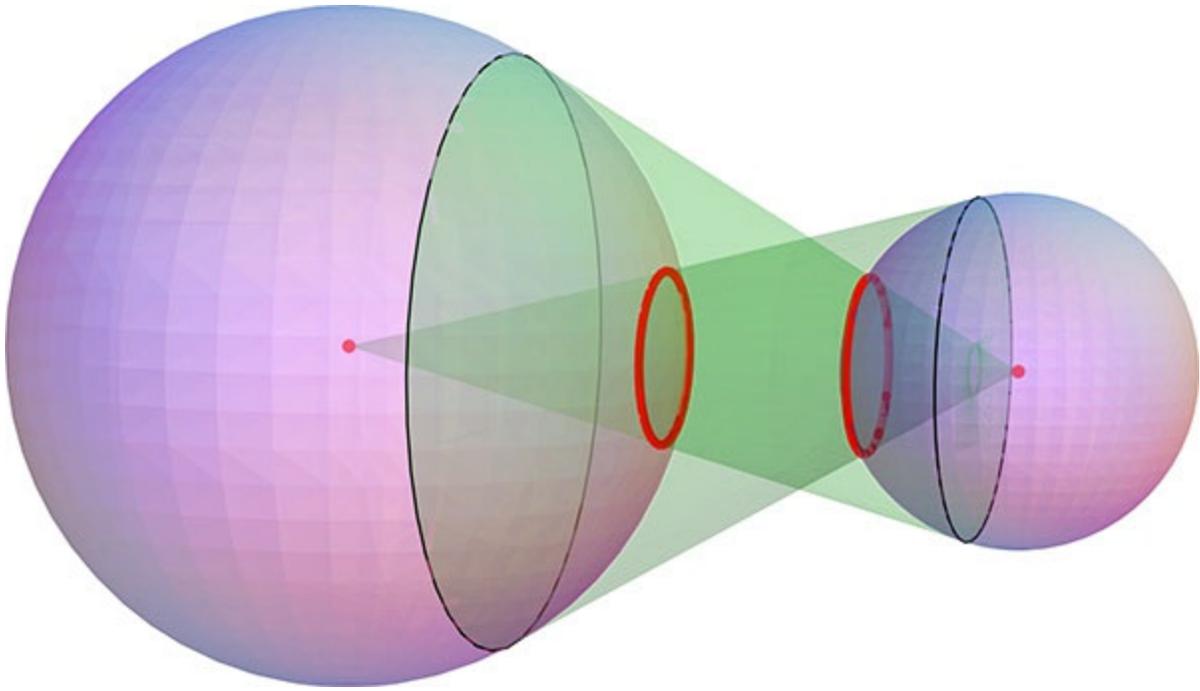
The Four Colour Map Theorem



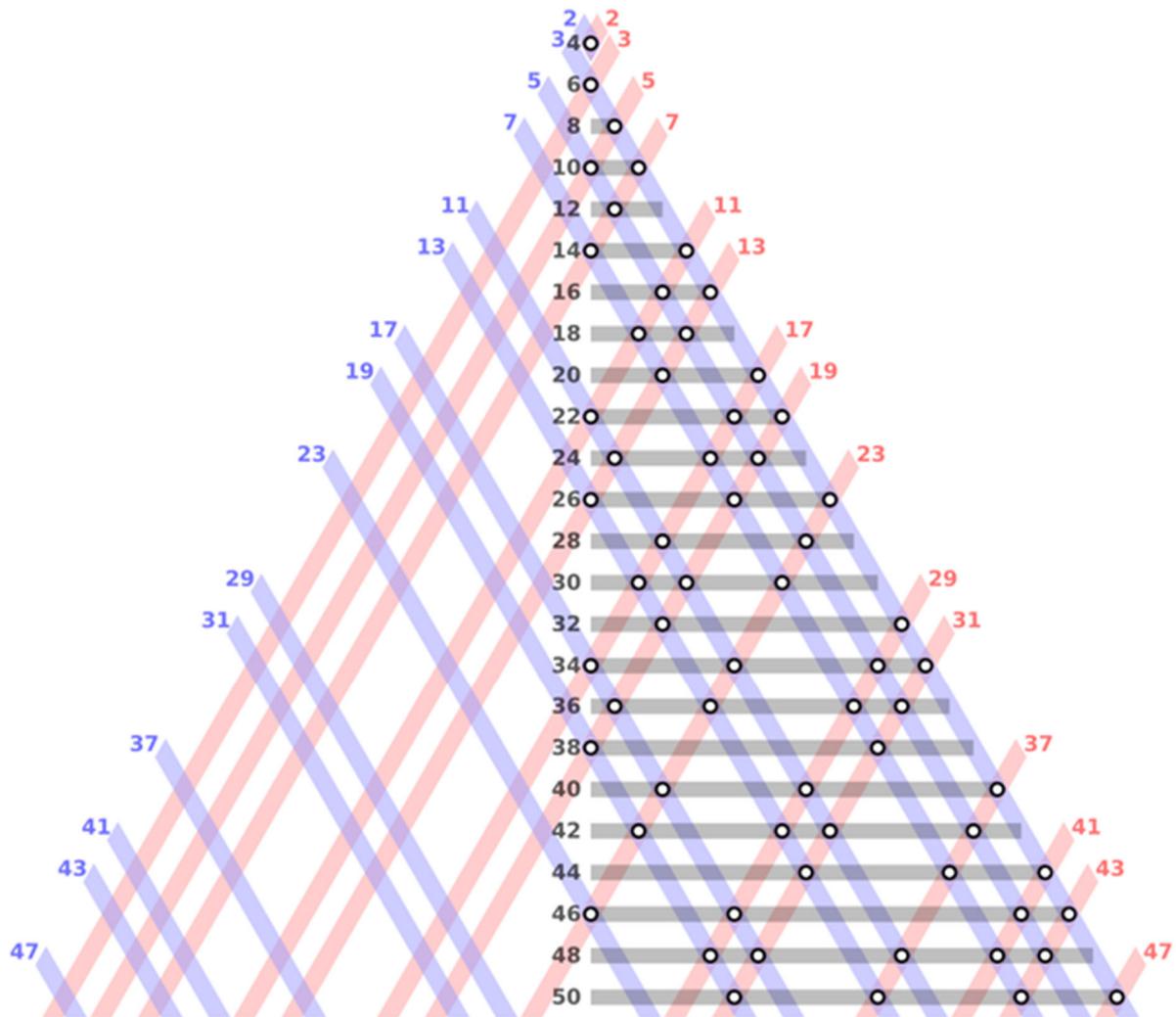
The Golden Ratio



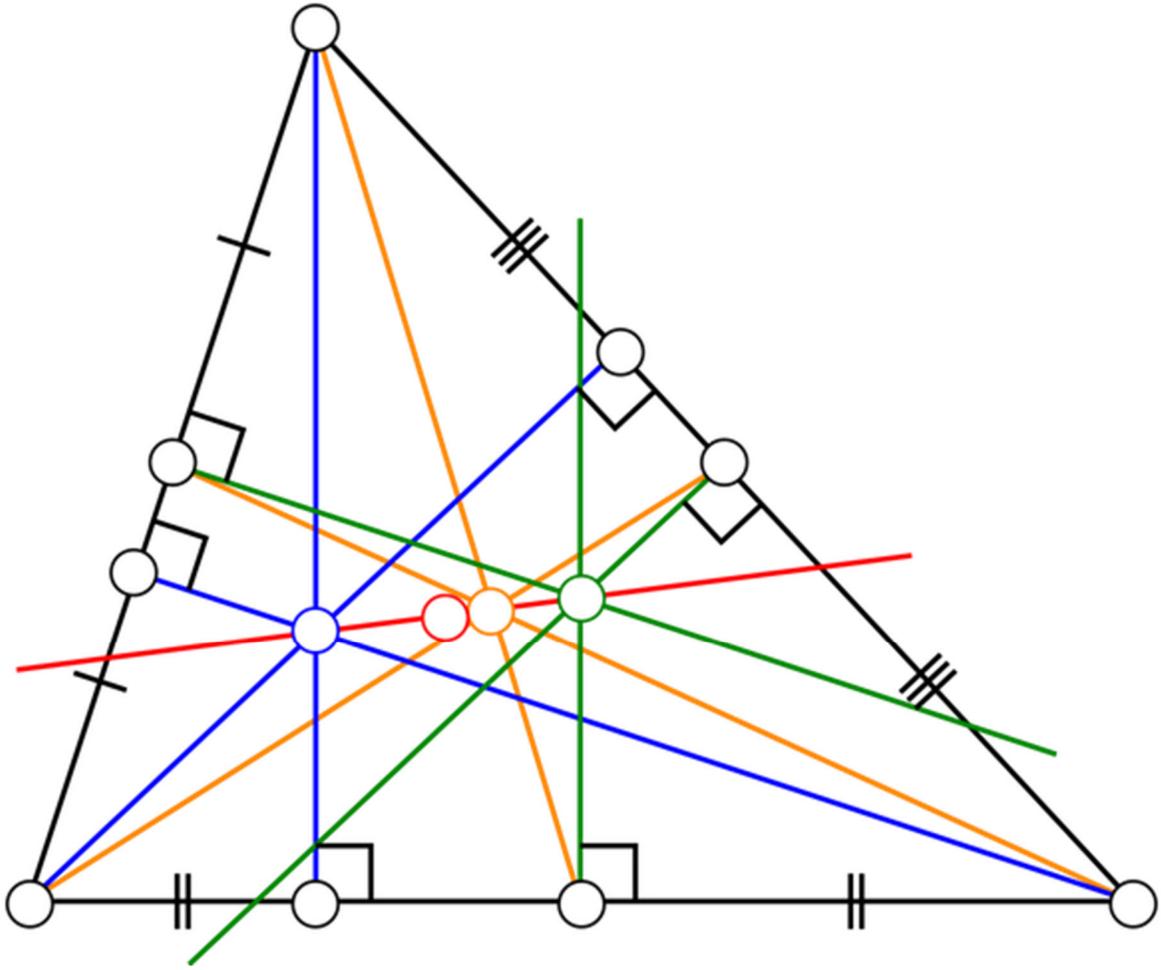
Area of a dodecagon



The Eyeball Theorem



Goldbach's Conjecture, visualized



Euler Line

$$n = \log_{\sqrt{4}/4} \log_4 \underbrace{\sqrt{\sqrt{\dots \sqrt{4}}}}_n$$

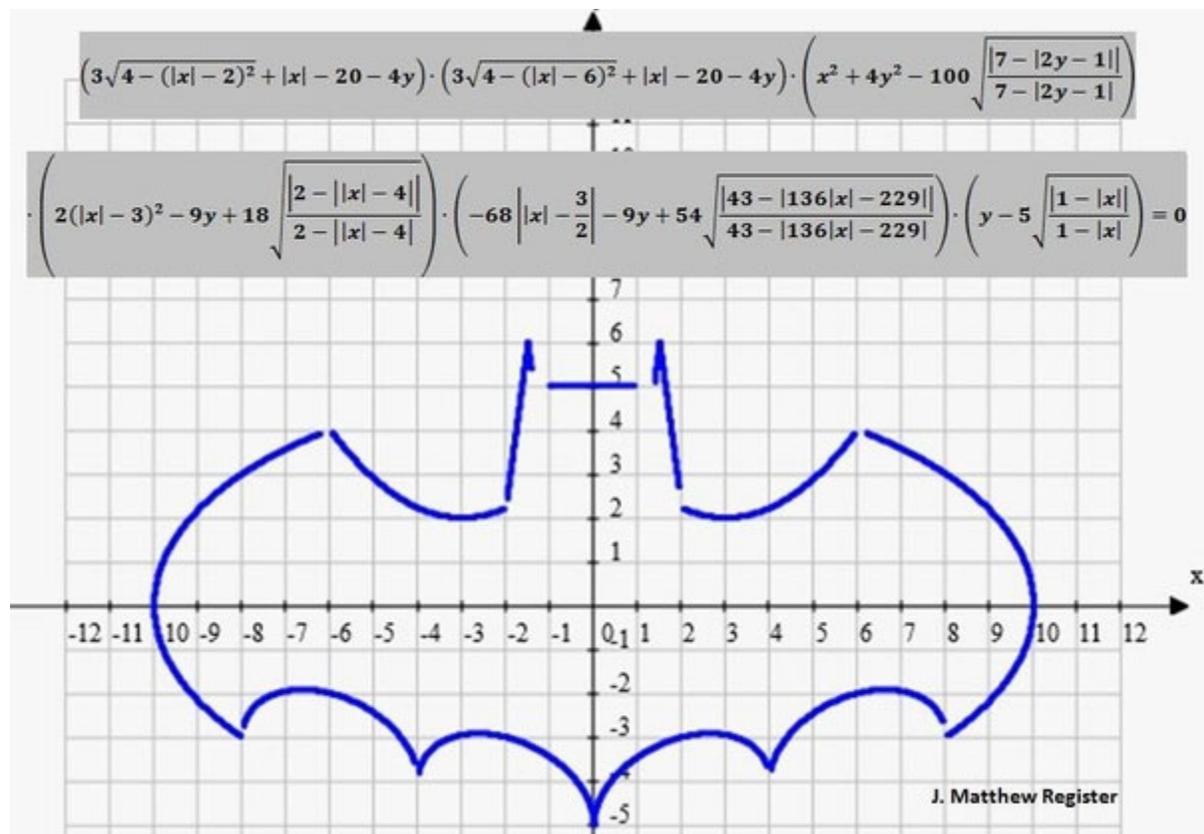
Formula for generating any positive integer using only four 4s

$$e^{i\pi} + 1 = 0$$

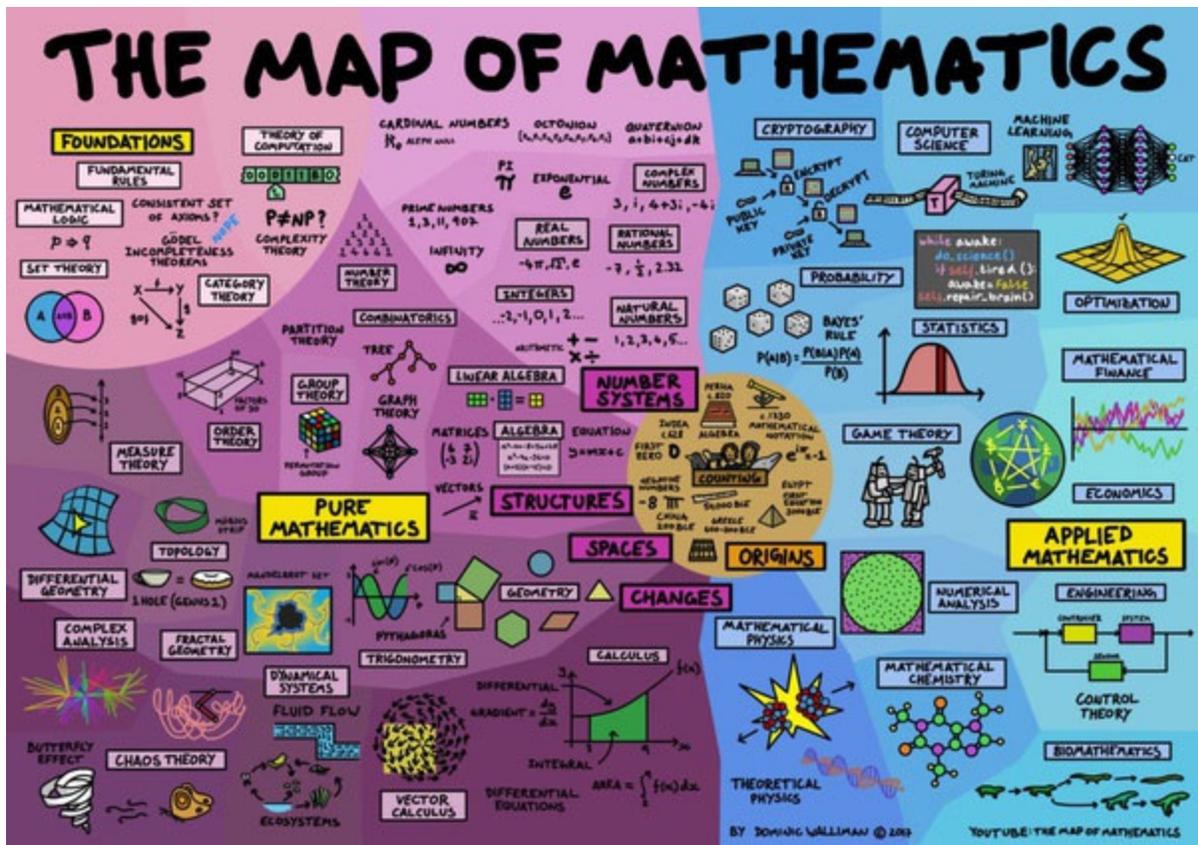
Euler's Identity

$$1 + \frac{1}{4} + \frac{1}{9} + \frac{1}{16} + \frac{1}{25} + \dots = \frac{\pi^2}{6}$$

The Basel Problem



The Batman Equation



Mathematics is highly intuitive. In order to solve a problem one must use logic as well as outside-the-box thinking and intuition. The mathematical world is governed by patterns and symmetries, some of them known and most of them awaiting our discovery.

Creativity is about exploration, discovery, imagination and innovation. The reason why many people don't see any creativity in mathematics is because it is taught as a boring subject with a set of rigid rules that one must follow. When people think of creativity they think of creating something without having rules to guide them.

But remember that other creative disciplines such as literature, music and art also have rules. In music there is structure, tonality, harmony, rhythm and instrumentation, just like how in mathematics there is algebra, arithmetic, operations and formulae. Once you've learnt the language of a subject, any subject can be creative. Science can be just as creative as art. Mathematics can be just as creative as music.

The misconception is that mathematics itself is just a tool for all other scientific disciplines. But mathematics is more than just a language. Mathematics is a profession, an art and a way of life.