Our project for "do it" at the Mobile Museum of Art is:

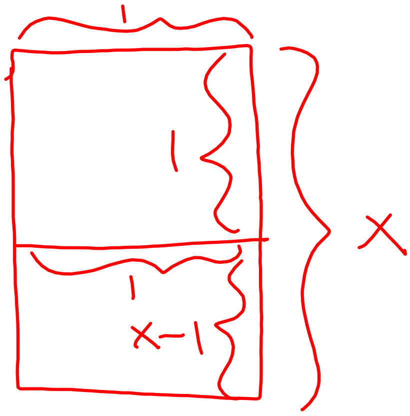
NETO, Ernesto
Watching birds fly, the game of the three points (2005)

Whenever you see a group of birds flying, choose three of them to follow. You will realize they make a triangle, but this triangle is always moving, spinning, stretching, flipping, getting smaller and bigger. Sometimes another bird jumps inside of the empty triangle changing places with one of them, which is going away, bringing us another triangle to follow.
(flying insects are pretty good too, a bit more nervous though)

The Golden Ratio

Fibonacci
Spirals
ratio
nature

pleasing to the eye
golden rectangle
phylotaxis



ratio of $\dfrac{\text{long edge length}}{\text{short edge length}}$

$$\boxed{\frac{x}{1} = \frac{1}{x-1}} = \text{golden ratio}$$

$$x(x-1) = 1 \qquad x^2 - x - 1 = 0$$

$$x^2 - x = 1 \qquad x = \frac{-(-1) \pm \sqrt{(-1)^2 - 4(1)(-1)}}{2(1)} = \frac{1 \pm \sqrt{5}}{2}$$

$$x = \boxed{\frac{1+\sqrt{5}}{2} = \varphi}$$

$$\approx 1.618$$

Phi is the golden ratio

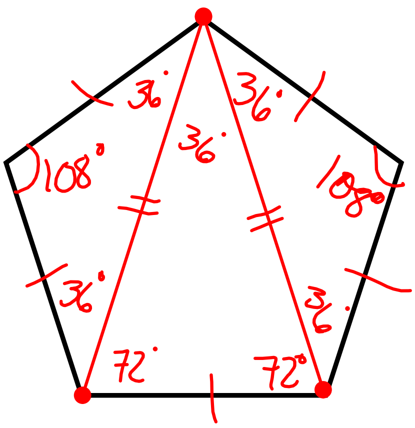
1, 1, 2, 3, 5, 8, 13, 21, 34, 55, ...

$$F_n = F_{n-1} + F_{n-2}$$

$$\boxed{\lim_{n\to\infty} \frac{F_n}{F_{n-1}} = \frac{1+\sqrt{5}}{2}}$$

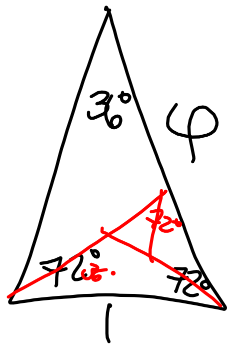
$$\frac{1}{1}, \frac{2}{1}, \frac{3}{2}, \frac{5}{3}, \frac{8}{5}, \frac{13}{8}, \frac{21}{13}, \frac{34}{21}, \frac{55}{34}, \ldots$$

$$1, 2, 1.5, 1.\overline{6}, \qquad \rightarrow \frac{1+\sqrt{5}}{2}$$



$$\frac{(n-2)180^\circ}{n} = \text{measure of each vertex angle of a regular } n\text{-gon}$$

$$\frac{3(180^\circ)}{5} = 108^\circ$$



← golden △