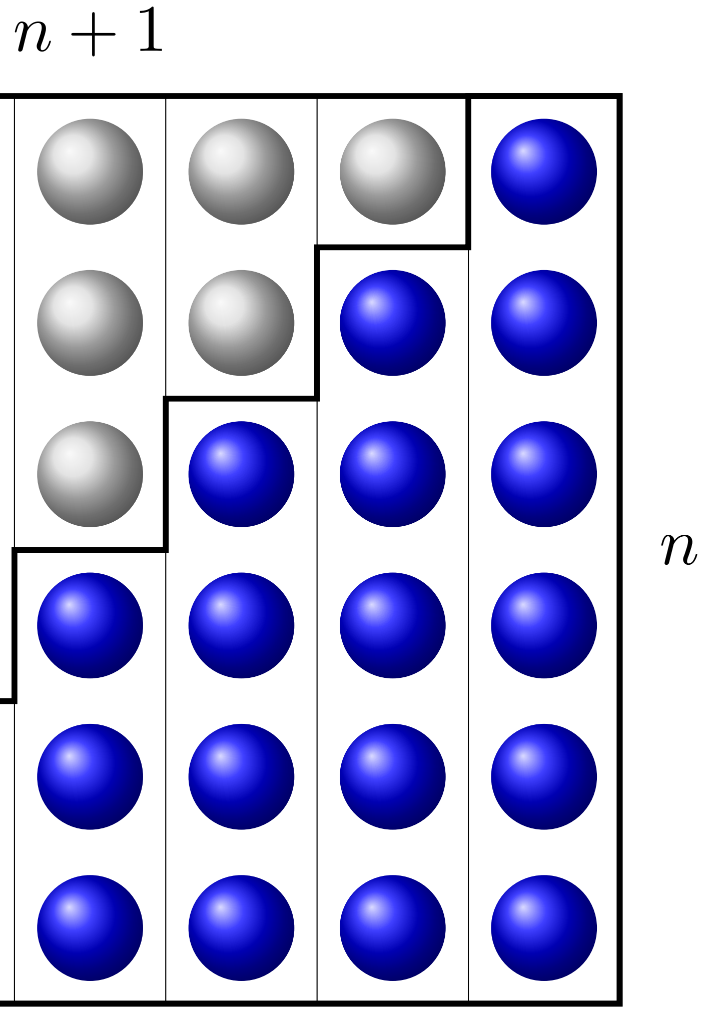
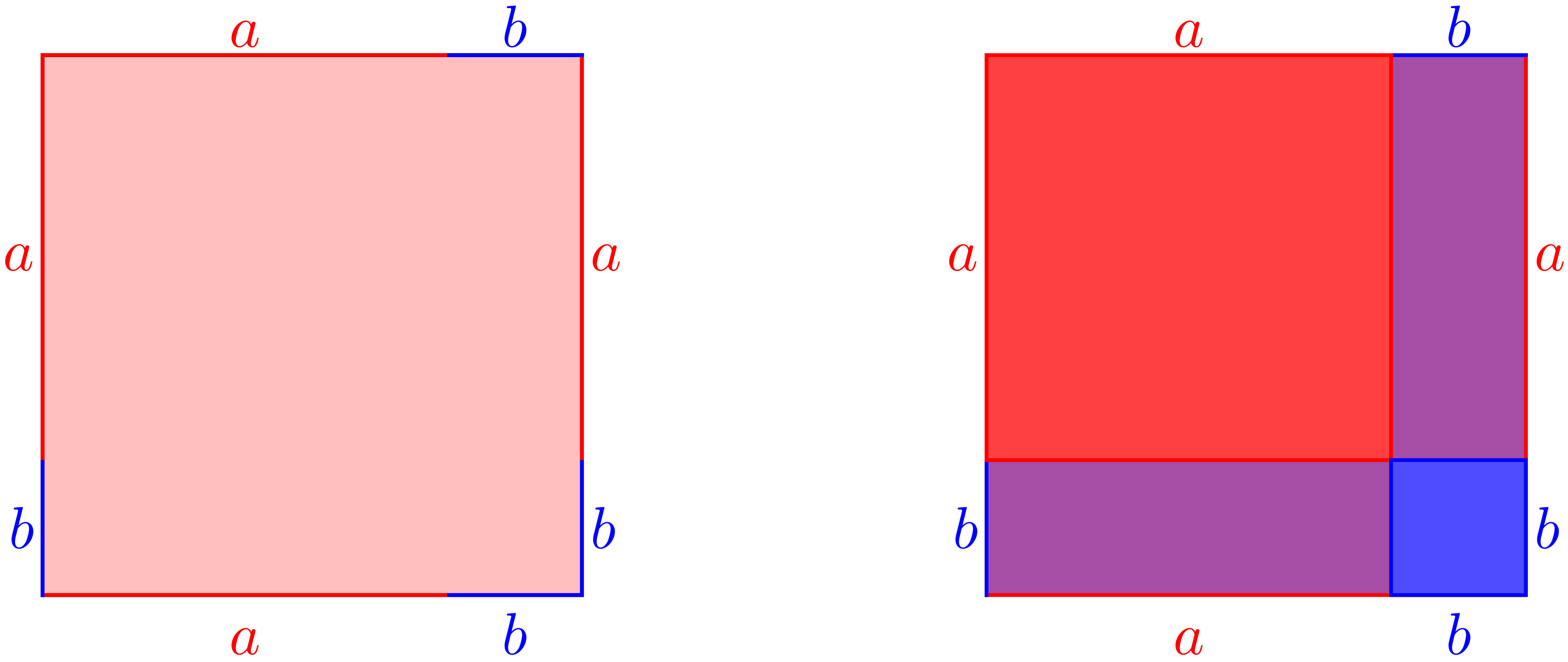
Sum of the first natural numbers



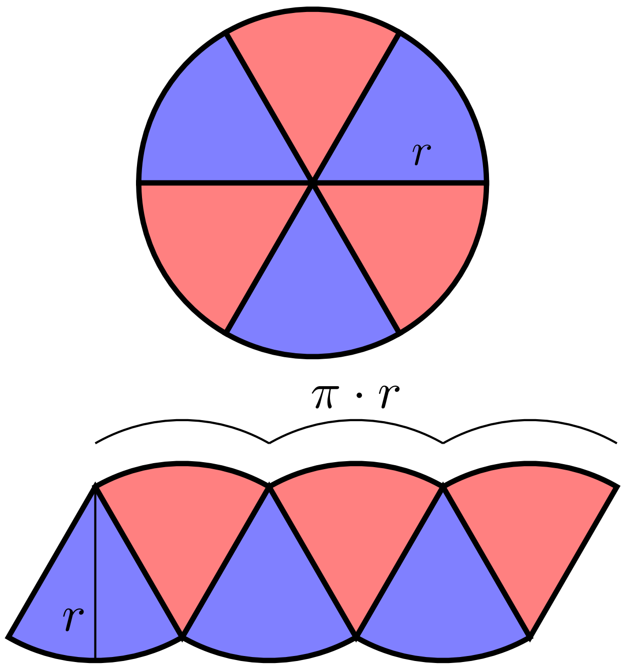
$$1 + 2 + 3 + \cdots + n = \frac{n \cdot (n+1)}{2}$$

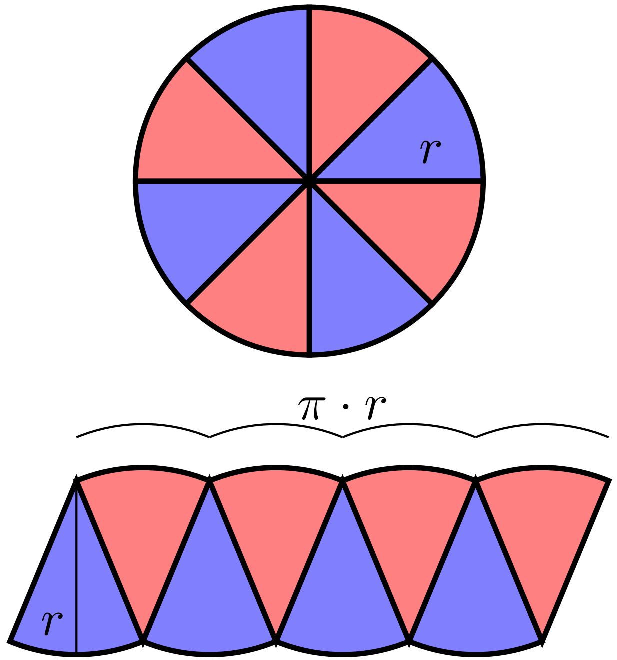
Square of a binomial

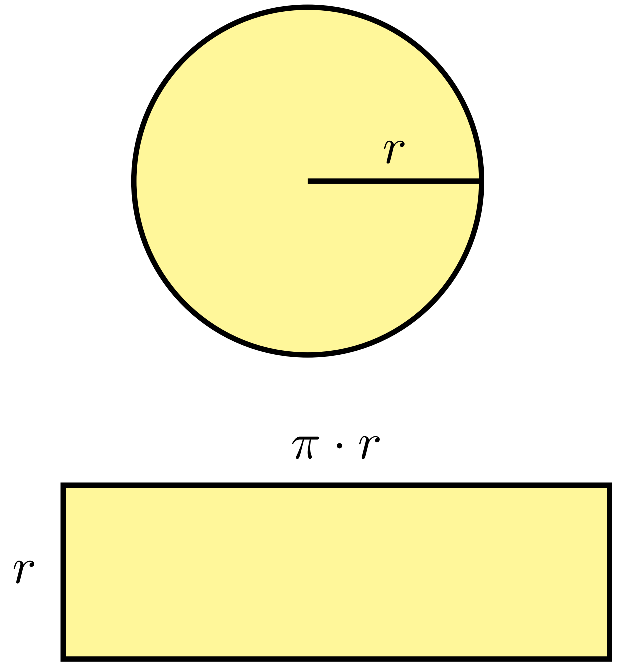


$$\boxed{(a+b)^2 = a^2 + b^2 + 2ab}$$

Area of the circle

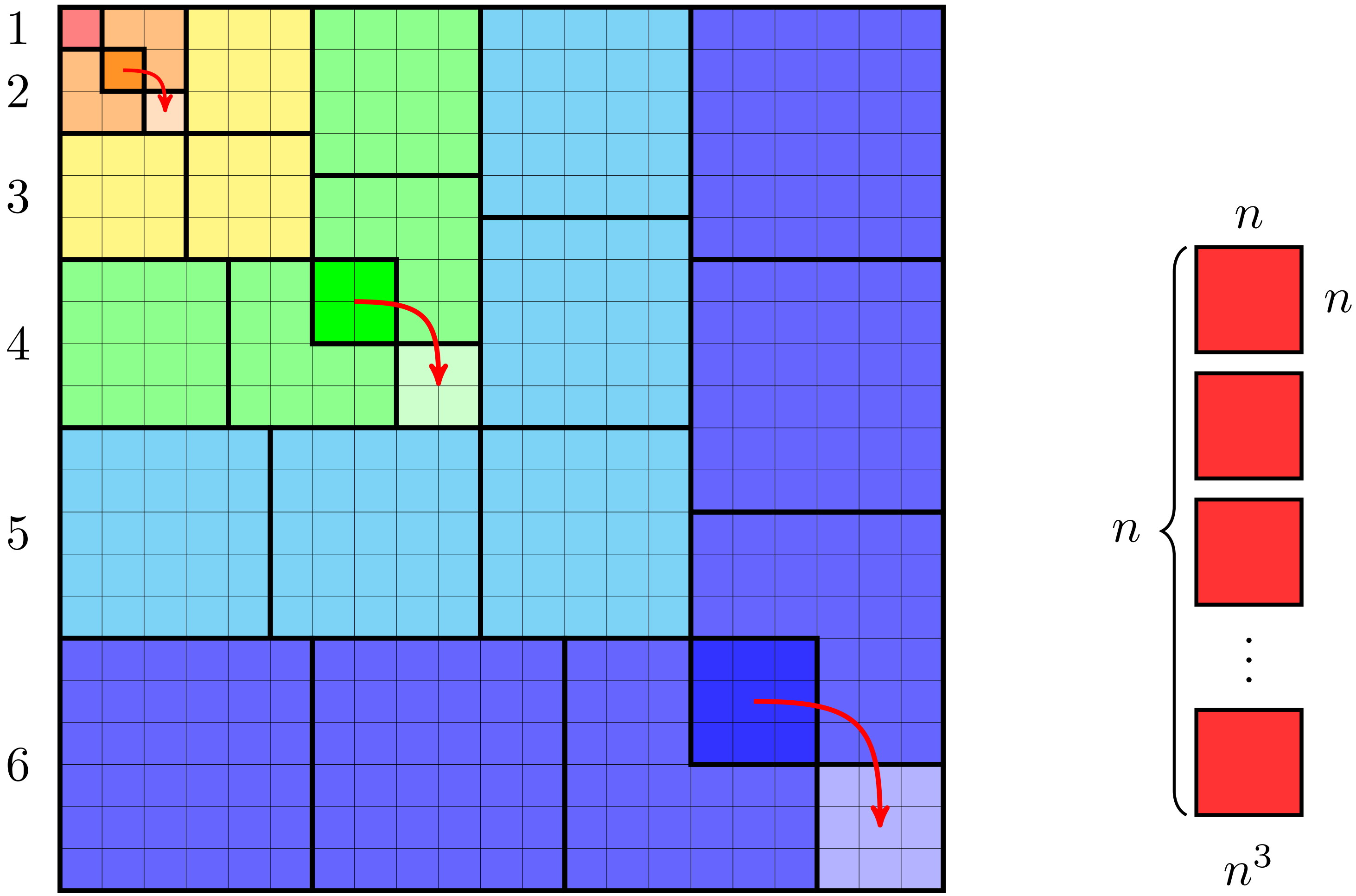






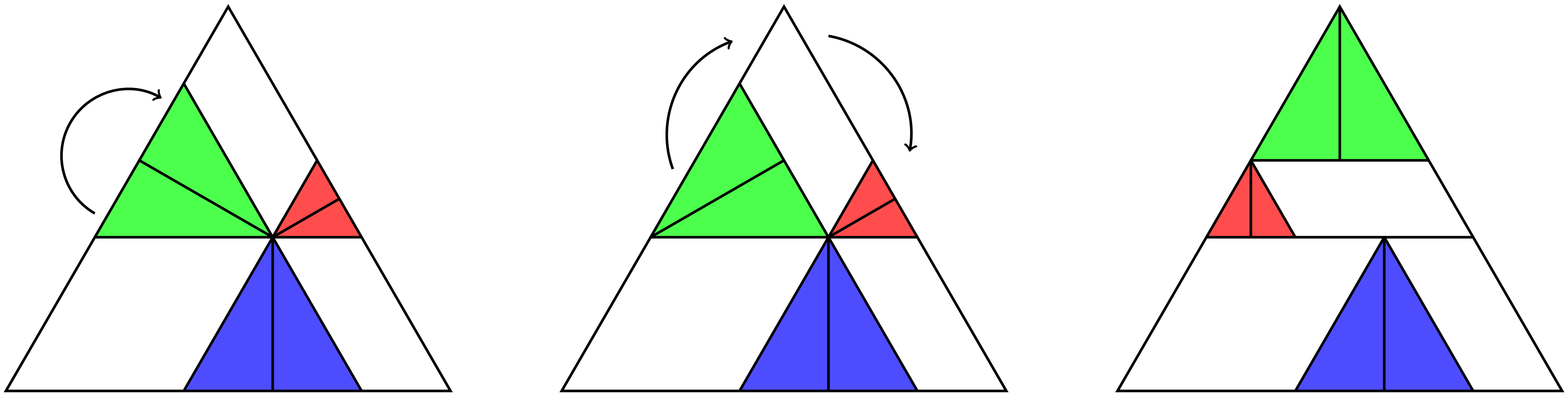
"The area of the circle is $\pi \cdot r^2$"

Sum of the first cubes



$$1^3 + 2^3 + 3^3 + \cdots + n^3 = (1 + 2 + 3 + \cdots + n)^2$$

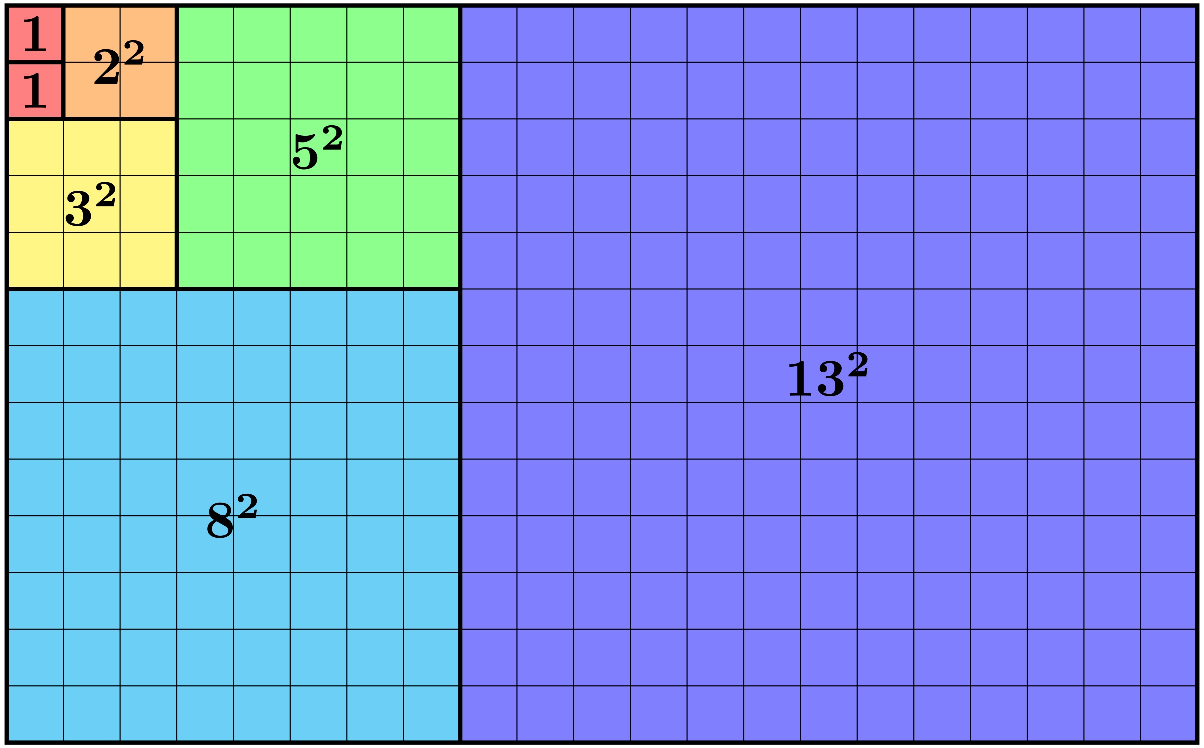
Viviani's theorem



"In an equilateral triangle the sum of the distances from any interior point to the three sides is equal to the altitude of the triangle"

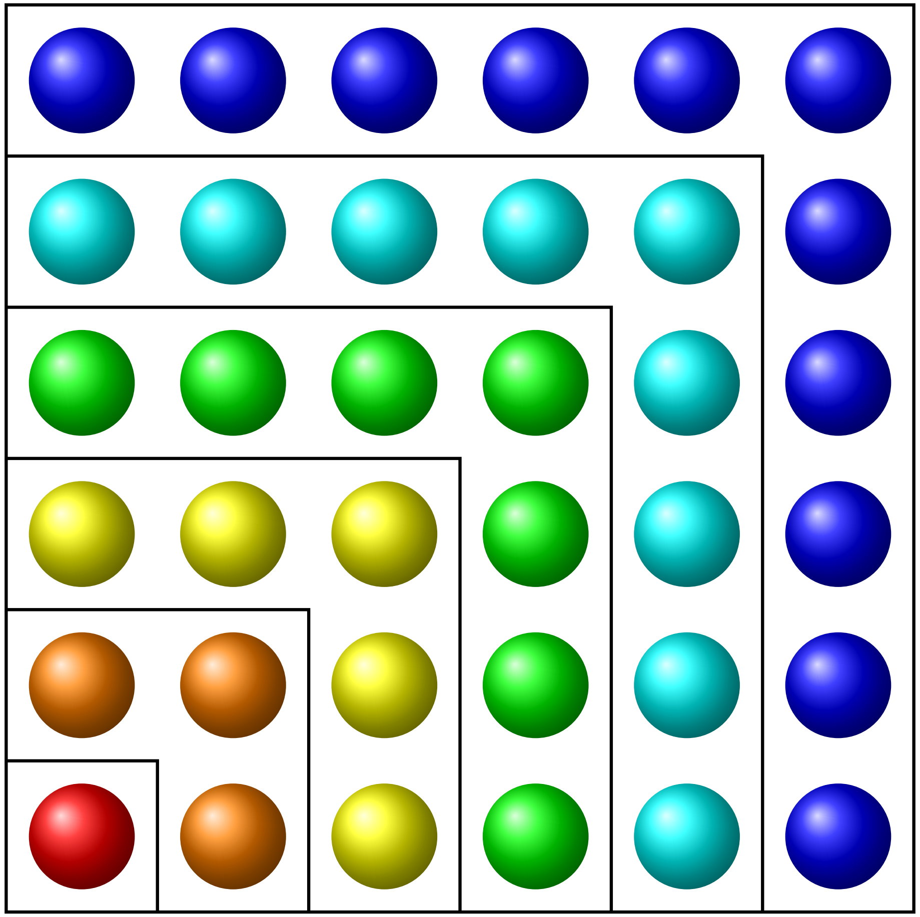
Sum of squares of Fibonacci numbers

$$\text{Fibonacci numbers: } F_1 = F_2 = 1, \quad F_n = F_{n-1} + F_{n-2}$$

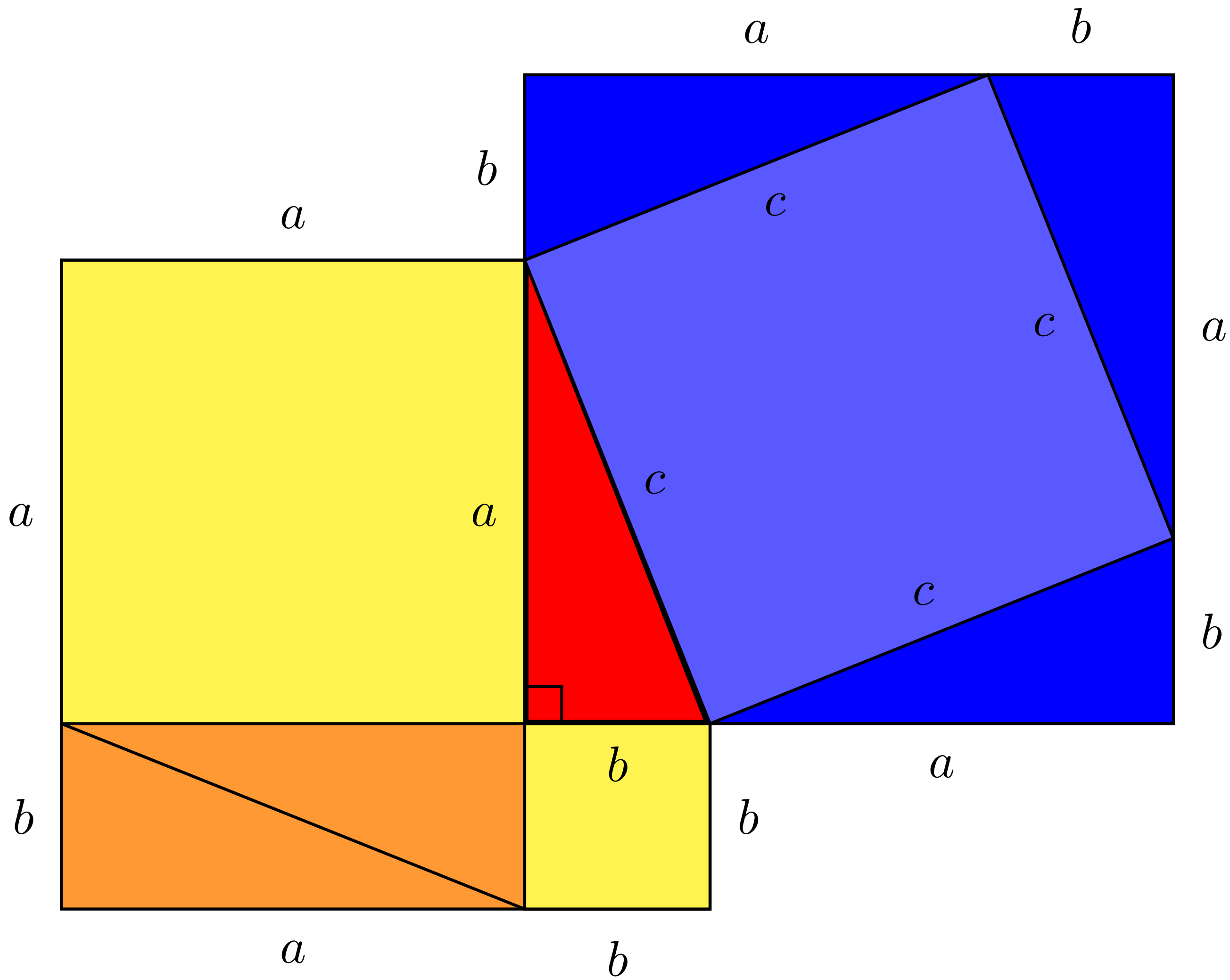


$$\boxed{F_1^2 + F_2^2 + \ldots + F_n^2 = F_n F_{n+1}}$$

Sum of the first odd numbers

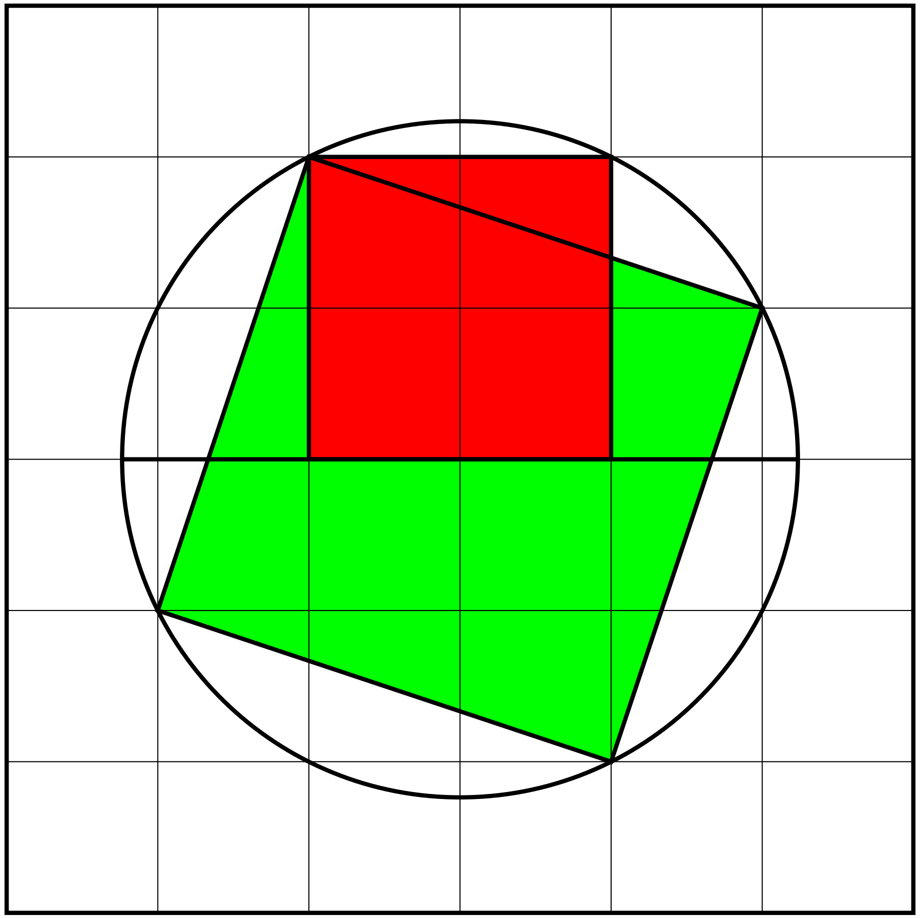


$$\boxed{1 + 3 + 5 + 7 + \cdots + (2n - 1) = n^2}$$



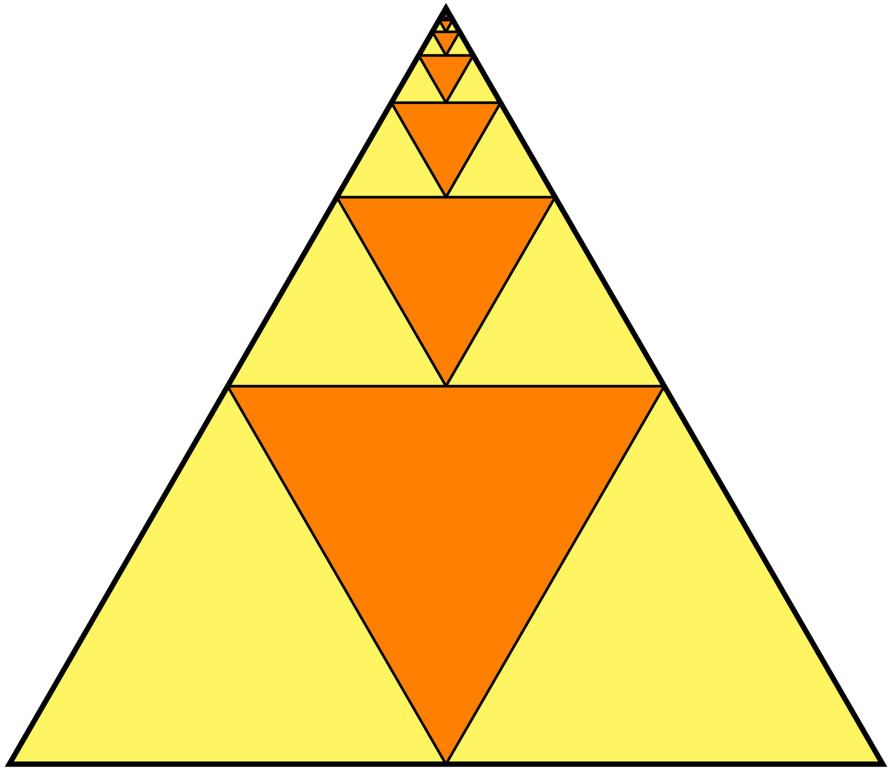
$$\boxed{a^2 + b^2 = c^2}$$

Squares inscribed in the circle and in the semicircle



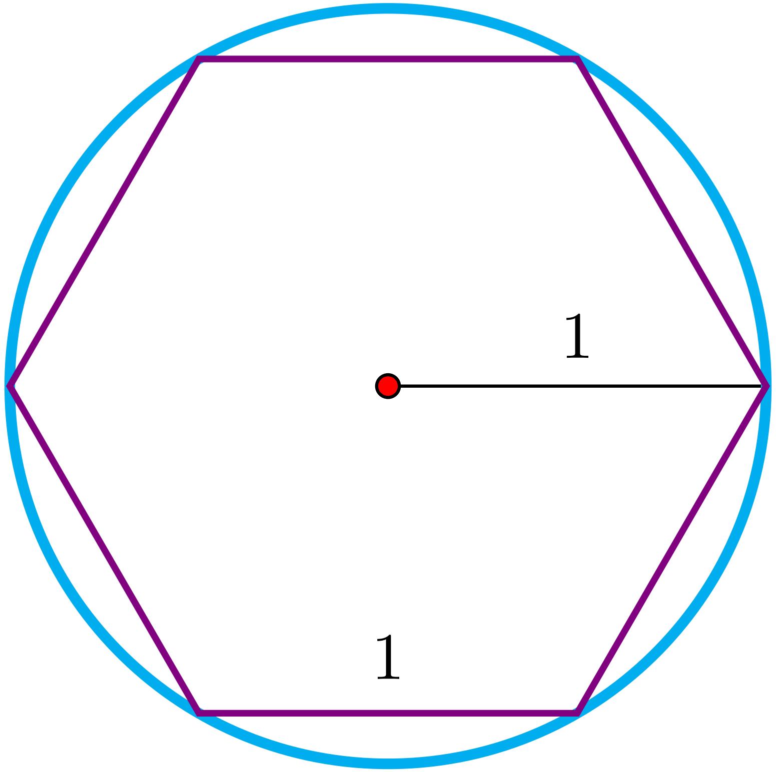
"The area of the square inscribed in the semicircle is $\frac{2}{5}$ times the area of the square inscribed in the circle."

Geometric series of common ratio $\frac{1}{4}$

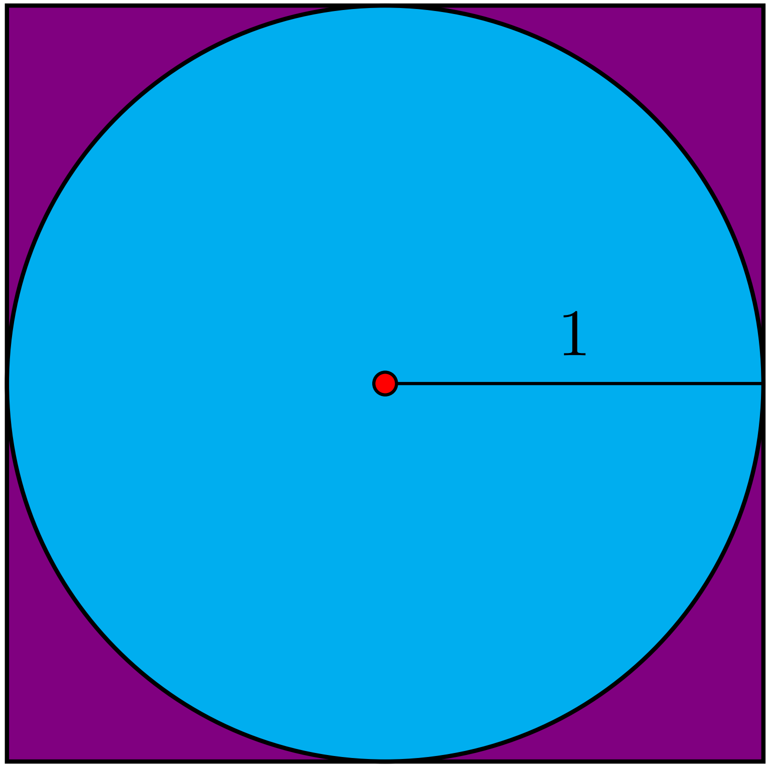


$$\boxed{\frac{1}{4} + \frac{1}{16} + \frac{1}{64} + \ldots + \frac{1}{4^n} + \ldots = \frac{1}{3}}$$

π *is between* 3 *and* 4



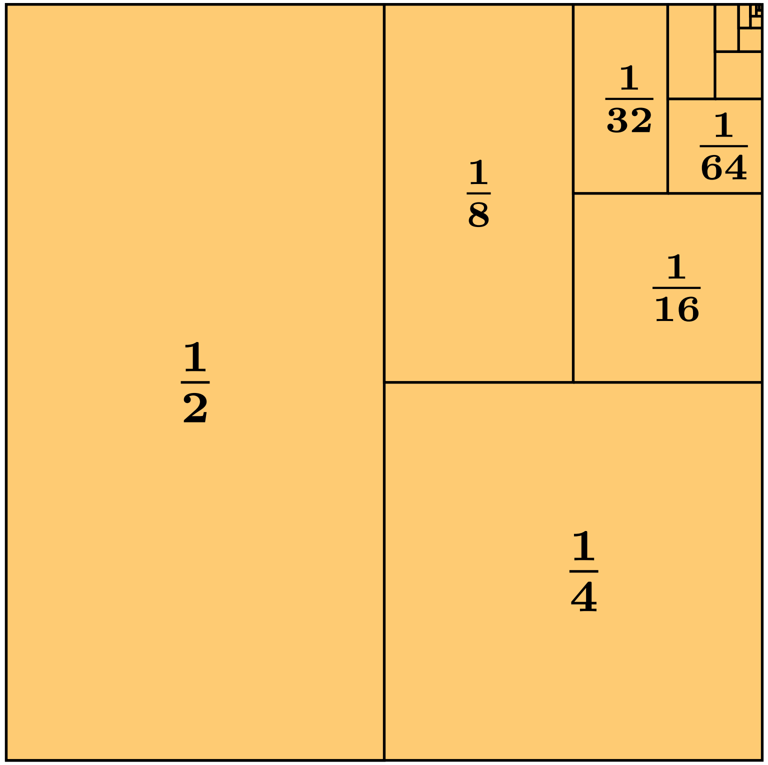
$6 < 2\pi$



$\pi < 2 \cdot 2$

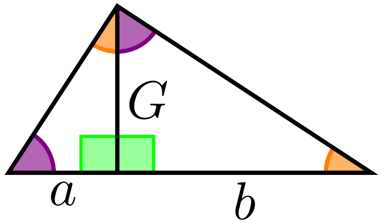
$$\boxed{3 < \pi < 4}$$

Geometric series of common ratio $\frac{1}{2}$

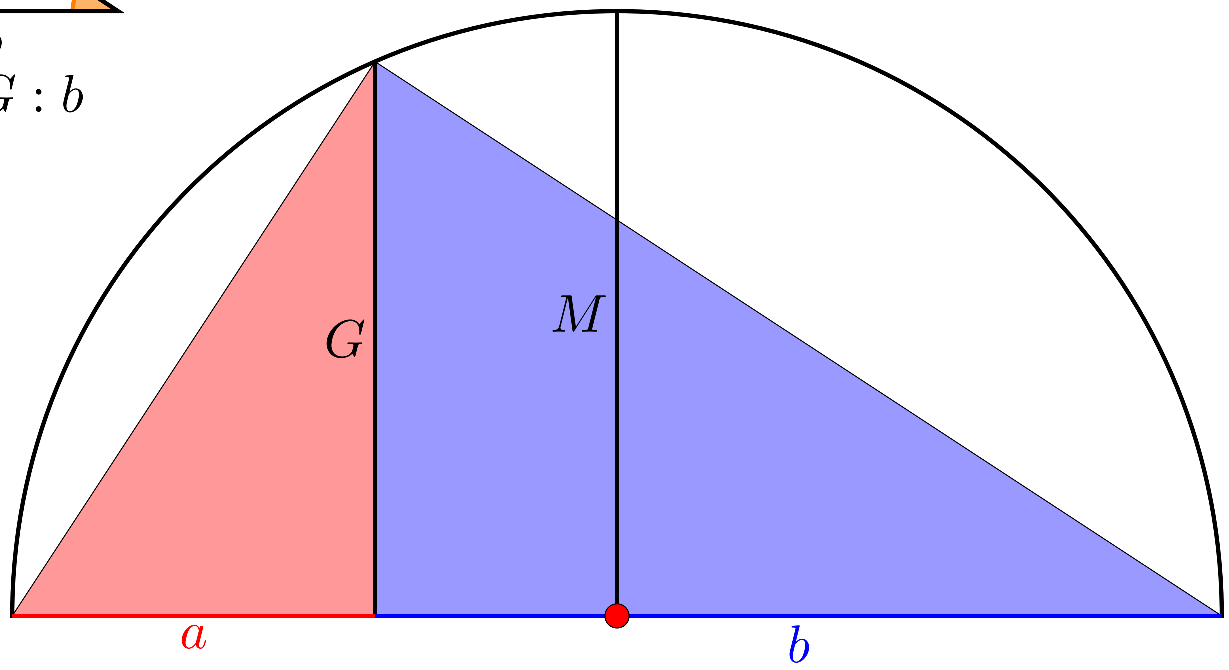


$$\boxed{\frac{1}{2}+\frac{1}{4}+\frac{1}{8}+\ldots+\frac{1}{2^n}+\ldots=1}$$

Arithmetic mean and geometric mean



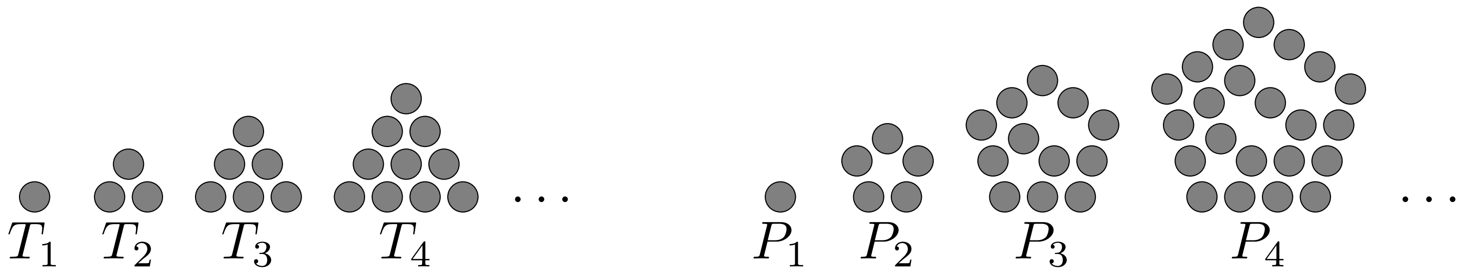
$a : G = G : b$

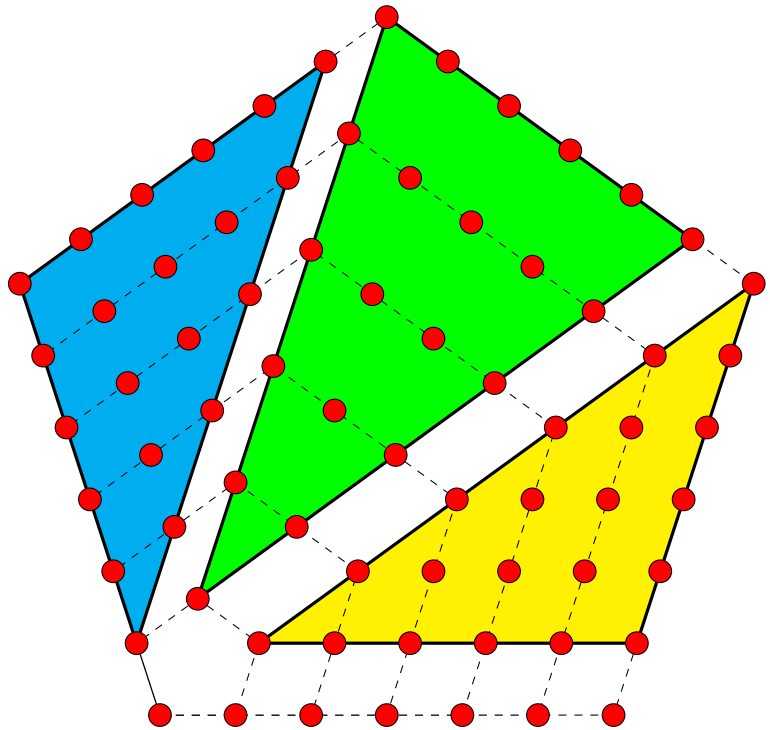


$G = \sqrt{ab}$ $\qquad$ $M = \frac{a+b}{2}$

$$\boxed{\sqrt{ab} \leqslant \frac{a+b}{2}}$$

Pentagonal and triangular numbers





$$\boxed{P_n = 3T_{n-1} + n}$$