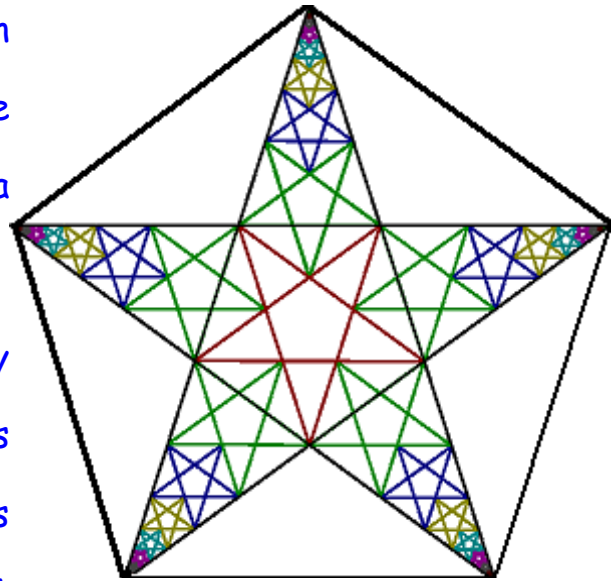


Regular Pentagon

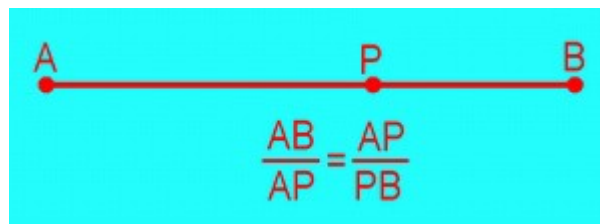
The Pythagoreans used the Pentagon star (Pentagram) formed by the five diagonals of a regular Pentagon as a symbol of their school.

It was probably this reason that they studied its geometrical properties and that they discovered that this symbol contradicts their idea that

everything can be expressed by integer numbers or ratio of integer numbers, because in a regular pentagon the ratio of diagonal to side is 1.618... ,now called *Golden ratio*, and this is an irrational number.



The value of the *Golden ratio* is $\frac{1+\sqrt{5}}{2} = \Phi$



If you name $X = \frac{AB}{AP}$ then $\frac{AB}{AP} = \frac{AP}{AB-AP} = \frac{1}{\frac{AB}{AP}-1}$ and you only have to solve the second degree equation $x^2 - x - 1 = 0$ in order to find the value of Φ .

Numbers, Algebra and Geometry joined together.