

# Pythagoras

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Pythagoras, possibly the most famous Greek mathematician/philosopher, was born in Samos about 569 BC and died between 500 and 475 BC in Italy.

He left Samos for Egypt in about 535 B.C. and later founded a society forbidding the eating of beans and wearing of animal skins. When Persia invaded Egypt, Pythagoras was taken prisoner and sent to Babylon now in Iraq, where he met the Magoi, priests who taught him sacred rites. Iamblichus (250-330 AD), a Syrian philosopher, wrote about Pythagoras, "He also reached the acme of perfection in arithmetic and music and the other mathematical sciences taught by the Babylonians.

In 520 BC, he left Babylon and returned to Samos, founding a school called The Semicircle. He incurred the displeasure of the leader of Samos and left. He settled in Crotona, southern Italy, about 518 BC, and founded a philosophical and religious school. He taught:

'All is number'. The Pythagoreans studied odd, even, triangular and perfect numbers. They knew that musical notes had frequencies in certain ratios. Mathematics was the basis for everything, and geometry is the highest form. The physical world can only be understood through mathematics.

The soul resides in the brain, and is immortal undergoing reincarnation and transmigration.

Numbers have personalities and some symbols have mystical significance.

The world functions on the interaction of opposites - young/old, fast/slow, hard/soft...

The Pythagorean school was a secretive collective. It is not possible now to give individuals credit for the discoveries they made, and their discoveries are only known to us because some members of the school wrote the theories down. Discoveries include:

The sum of the angles of a triangle is equal to two right angles.

Pythagoras Theorem. The sum of the squares of the two shorter sides of a right angled triangle equals the square of the longer side.

Constructing figures of a given area and geometrical algebra, solving some equations by geometrical means.

The discovery of irrational numbers.

The five regular solids (tetrahedron, cube, octahedron, icosahedron, dodecahedron). It is believed that Pythagoras knew how to construct the first three but not last two.

The Pythagoreans believed the Earth to be the centre of the Universe, and the stars and planets to move around it.