

Pythagoras

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Pythagoras, born in the mid 6th century, grew up in Samos most of his life. Samos was part of a Greek Colony ruled by a tyrant of the name of Polycrates after a couple years. Pythagoras was born to father Mnesarchus and mother Pythais. Mnesarchus was wealthy which gave Pythagoras a stress-free childhood. Since Samos at the time was divided up into independent city states, each community was agricultural based. Everyone worked on farms. However, Pythagoras had the opportunity to learn how to read, write, and learn mathematics, science and philosophy. Philosophers Thales and Anaximander taught him mathematics. Their teachings influenced Pythagoras to learn more about advanced mathematics. Philosopher Thales inspired Pythagoras to study more about astronomy and mathematics. He encouraged Pythagoras to move to Egypt to learn more about other topics. Philosopher Anaximandros, on the other hand, inspired Pythagoras to become interested in cosmology and geometry. His teachings in particular are embedded in Pythagoras' later ideas, beliefs, and discoveries.

Pythagoras created Pythagoreanism. This term is a combination of Pythagoras' beliefs and studies. It is a tradition of a way of thinking according to the documentary Genius Pythagoras. He also looked for a specific religion to follow to and to live life to. He found Orphic religion. Because this religion is an old religion, Pythagoras wants to bring it back to everyday life. This religion believes in immortality of the soul and reincarnation, and through this religion, Pythagoras believed that poetry and music would purify the immortal soul which had been imprisoned as a punishment for sin in the mortal body according to the documentary. Through this religion, Pythagoras was not scared of death. But Pythagoras could not study further on these topics, orphic religion, mathematics, science, and philosophy; therefore, he had to move out of Somas. There were many restrictions in the belief of these subjects. Conversations were limited. Therefore, he listened to Thales and moved out of the country. He first went to other areas of Greece, then to Southwest Asia, and then to Egypt in 535 BC. Egypt was his primary location to learn, to teach, and to discover. He stayed there for 10 years until Persia invaded Egypt and became imprisoned in Babylon (Douglass).



Figure 1: Pythagoras

In Egypt, the geometry of the pyramids fascinated him. Also, the name sages annoyed him. He did not like how the sages got more respect and were superior than others just because they have the answer to the universe. Because of this, Pythagoras became a philosopher and decided he is also capable of finding answers to the universe and understanding life. Therefore, he studied more about philosophy, math, and nature. He educated others with his knowledge. But around 525 BC, Persia invaded Egypt and there was violence and war happening around Pythagoras. He got imprisoned and was taken to Babylon. Iamblichus, a Syrian philosopher, says that Pythagoras, ... *was transported by the followers of Cambyses as a prisoner of war. Whilst he was there he gladly associated with the Magoi ... and was instructed in their sacred rites and learnt about a very mystical worship of the gods. He also reached the acme of perfection in arithmetic and music and the other mathematical sciences taught by the Babylonians...*(O'Connor, Robertson).

Pythagoras wanted to educate other people on his beliefs and religion and wanted to create a community of equality and peace. Later on, we see that his beliefs created a controversy with Cylon and might have caused his death. Pythagoras was released from Babylon and went back to Samos to find a place to teach his findings. He found that Samos had been corrupted and destroyed. This led him to leave Samos forever. He then went to Croton, another Greek colony. He met his wife there in Croton and became a father. In Croton, he created Brotherhood. This is a community he created where he developed ideas with other followers. His followers are called the Pythagoreans. However, followers who were strict with his belief and followed every belief were called the Matematikoi. These people are in Pythagoras' inner circle. Followers who believed in him but were not strict in following these beliefs were called Akousmatikoi [Figure 2]. Later these ideas became a foundation for education. In Croton, he trained his followers how to live a full life. In the section of mathematical work, his complete beliefs are discussed.

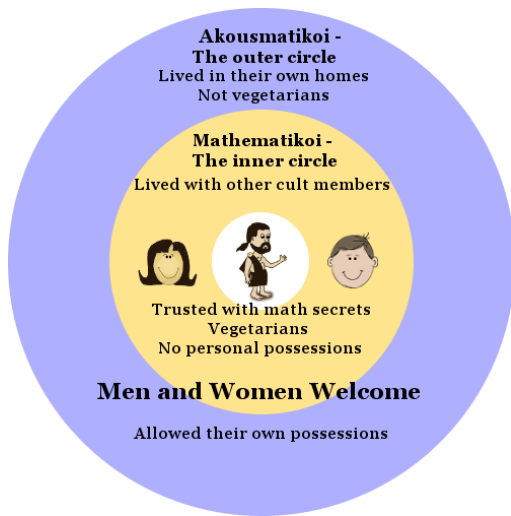


Figure 2: Pythagoras' Followers

Pythagoras has influenced many great philosophers in his time. For example, he influenced Plato. Plato was interested in Pythagoras' work and got hold of a copy of his work. Pythagoras' ideas inspired Plato to write his book called *The Republic*. He included Pythagoras' belief in equality, harmony, and mathematics. Now during this time, Pythagoras became very popular in Croton and was top in the political spectrum. His life was going well. He discovered many things like how the earth orbited the sun and the moon orbited the earth. He also found the Pythagorean Theorem and the Pythagorean theory of opposite. More further about his findings will be discussed in the mathematics section. As we said before, Pythagoras believed in the Orphic religion, equality, he is said to be a vegetarian and does not eat beans because it is bad for the soul. These beliefs were strictly followed in Croton when he was the highest point of his career. However, when Croton was invaded by Sybaris, this war became the worst part of Pythagoras' life. Even though it is unsure of how Pythagoras died, there is a possibility he died because of Cylon. Cylon said that Pythagoras' theory was not healthy and did not allow freedom. However, the true story is

that Cylon wanted to be in his society but because of his past he was rejected. Therefore, out of revenge, he destroyed the Brotherhood and burned down the houses. As a result, we think that Pythagoras died then. There are also other sources which say that he died of starvation or by age, but no one knows for sure.

Pythagoras' mathematical works

Before listing the Pythagoras' mathematical works, it is said that his discoveries were not only discovered by him. Most, if not all, were discovered together with his followers, the Pythagoreans.

Heath, a mathematician, wrote *A History of Greek Mathematics*, and he lists Pythagoras' theorems. One of the most major works was the Pythagoras theorem. It is well known everywhere today. The Pythagoras theorem gives us the length of a missing side of a right triangle. It is defined as the square of the hypotenuse is equal to the square of one of the other side plus the square of the remaining side. In mathematical language, it is...

$$a^2 + b^2 = c^2.$$

To Pythagoras, he sees the sides of the triangles as sides of a square. From that, the Pythagoreans and he

discovered this formula. Now, this theorem was used way before Pythagoras was even born. It was used in Egypt, Babylon, China, and other countries, but Pythagoras and his followers were the first to actually write it down and prove it.

Another discovery is that the angles of a triangle, $\theta, \alpha,$ and β is equal to two right angles (180 degrees). The Pythagoreans noticed that if a polygon has n number of sides, then the interior angles' sum is $2n - 4$ of one right angle. In a mathematical formula:

The angles of a triangle is equal to two right angles:

$$\theta + \alpha + \beta = 2(90degrees)$$

The sum of the interior angles is equal to $2n-4$ of one right angle:

$$sumofinteriorangles = (2n - 4)(90degrees)$$

For example, if a polygon has 7 sides, let's say, then total sum of the interior angles will equal $(2(7) - 4)(90$ degrees). And talking about the exterior angles, the sum of those angles will equal four right angles, so $90(4) = 360$.

They also solved equations through geometry. If given an area, they know how to achieve a shape. They also, in particular, solved

$$a(a - x) = x^2$$

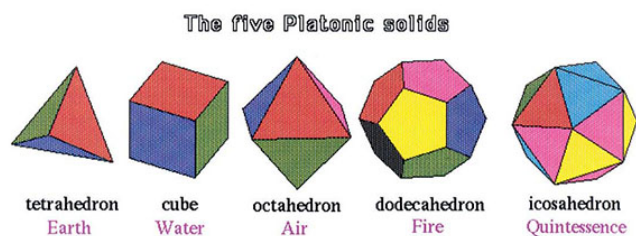
through geometry. As told in his life history section, Pythagoras has been fascinated in geometry when he went to Egypt. By looking at the pyramids and learning from Anaximander, he taught geometry to his followers which allowed them to solve equations and create figures.

Pythagoras also discovered that numbers really do exist and everything is numbers. Pythagoras believed that "the universe is numbers" (Famous Scientists). Many people today believe this too. He believed that the universe is based on whole number ratios which were explained by musical notes. Unfortunately, he discovered irrational numbers through his own theorem and proved himself wrong.

Another of Pythagoras' mathematical works is the discovery of irrationals. He believes that everything is connected to numbers and he discovered new concepts through ratios of whole numbers. Therefore, he tried to prove that the hypotenuse of a right isosceles triangle (two sides are of the same length) is in fact a whole number. However, he could not prove that and discovered irrational numbers. He discovered that if a right triangle has two sides 1, then the hypotenuse is $\sqrt{2}$, which is an irrational number that goes on forever. Using the Pythagorean Theorem, this would look like:

$$1^2 + 1^2 = \sqrt{2}$$

Irrational numbers are decimals that do not have an ending. For example, π (pi) is an irrational number.



In addition, they discovered The Five General Polygons or Platonic Solids. The five general polygons are Tetrahedron, Cube, Octahedron, Dodecahedron and Icosahedron. The solids are above. They came up with this name through musical ratios, like:

2 : 1, 3 : 2, 4 : 3...etc.

There are many discussions on who discovered what. Some say that Pythagoras discovered only the first three Platonic Solids, but others say the first four. The last one, Icosahedron, was credited to Hippiasus of Metapontum. Plato, before Euclid of Alexandria, designated each polygon to an element. He said that "the Tetrahedron was fire, the Cube was earth, the Octahedron was air, the Dodecahedron was elements of which the heavens and the constellations are made of, and Icosahedron was water" (Woebcke). Then Euclid changed Plato's designation of elements. He gave "Tetrahedron to be Earth, the Cube to be water, the Octahedron to be Air, the Dodecahedron to be fire, and Icosahedron to be quintessence" (Woebcke). We can see that Pythagoras' discovery of the five regular solids have been an important part of astronomy. These shapes are also essential to architecture.

He also discovered that the earth is a sphere and Plato discovered that the earth is on a tilted axis. Pythagoras found that the Earth orbits the Sun and the Moon orbits the Earth. Through his findings, future astronomers could discover more about the universe. He also discerned that the planet Venus was both an evening star and a morning star.

Apart from his mathematical works and discoveries, he also had some beliefs. He taught these beliefs to his followers in Croton. One of his beliefs was that beans should not be eaten. He thinks that if one eats beans then it is bad for the soul and one will eventually die. Of course his beliefs were a little peculiar, but the Pythagoreans believed this back then.

Other beliefs were equality, one should not wear clothes made out of animal skin, men are odd and women are even and bodies and souls are different (after death, the souls will leave the body and go to a different body which is called reincarnation).

Collaboration with other scholars

Pythagoras did not specifically collaborate with other scholars. He learned about mathematics, philosophy, nature, and science, and through doctrines and his beliefs, he discovered mathematical concepts and formulas. However, he did have help from his followers, so his followers, the Pythagoreans, helped him achieve life changing mathematical works. He had specific followers named Mathematikoi. These are the inner circle followers who were strict with Pythagoras' beliefs.

Before he created a community, The Brotherhood, he was taught mathematics, cosmology, and geometry by well known philosophers.

Thales, Pherekydes, and Anaximander were well known philosophers who inspired Pythagoras to be a philoso-

pher and a mathematician. Specifically, Thales taught Pythagoras astronomy and mathematics and as said before, he was the reason Pythagoras made the decision of leaving Somas and going to a different place like Egypt.

Anaximander was Thales's pupil and he stroke Pythagoras' interest in cosmology and geometry. Through his teachings and lectures, Pythagoras has implemented this into his discoveries like the earth being a sphere, the earth orbiting the sun, and the moon orbiting the earth.

Lastly, Pherekydes was known as the teacher of Pythagoras. Pherekydes' interests were cosmology, theology, and mythology.

Some say that Socrates taught him but had rejected Pythagoras' beliefs except for immortality. Pythagoras' life is not accurate and nobody really knows, but through other people's work like Aristotle and Plato, we get some idea of Pythagoras' contact with other philosophers.

Plato took some of Pythagoras' works and further developed it and found more discoveries. Pythagoras' work is a good foundation for other discoveries to be made later on.

Historical events that marked Pythagoras' life.

Pythagoras travelled a lot in his life. He grew up in Somas and when he left Somas, Polycrates became the ruler of Somas which then led Somas into corruption, neglect, and destruction. He studied in Egypt for multiple years and a war between Persia and Egypt pushed him out of Egypt and into Babylon as a prisoner. After he was released from Babylon, he went back to Samos to create a school and community to teach his beliefs to others. He just wanted a place to start his Brotherhood. Unfortunately, the land was destroyed. This led Pythagoras to go to Croton. In Croton, he begin his discoveries. He soon started having followers and his career began. He then began discovering new concepts with his followers.

Samos was ruled by a Lydian king in the name of Croesus. Cyrus the Great, the Persian King, killed King Croesus. This led ot oPolycrates resign from Egypt and begin his ruling in Samos. Polycrates was a tyrant who was popular to amny people; however, there were some who disliked his ruling style and were either exiled or voluntarily went to a different country. One of these people was Pythagoras. He wanted to study more and Polycrates became the ruler of Samos, so he found it as a great opportunity to begin his journey. Polycrates wanted to protect Samos. To do this, an aqueduct, a wall, and a mole was built. A mole is a pile of stones to prevent water from coming into Samos. Apart from protecting the place, he built huge temples for the people to have a better lifestyle. During this time, Amasis II was allies with Polycrates but after some time, Polycrates ditched the alliance with Amasis II and became allies with Persia. Because of some misunderstanding between Polycrates and the Persian king, he got killed by Persia in a surprise attack.

During Pythagoras' time in Egypt, 525 BC, Persia invaded Egypt which caused Pythagoras to be imprisoned in Babylon. The invasion was called the Battle of Pelusium. During the battle, the Egyptians are outnumbered which gave Persia an advantage during the battle. Persia defeats Egypt. Persia's commander was Cambyses II and Egypt's commander was Psamtik II or Amasis II's son. At the time, Persia was allies with Samos. This gave Persia a stronger army. To win the battle, Persia incorporated cats as a way to protect them from Egypt. Egypt loves cats and in a way they worshipped them. Therefore, it was tough for Egypt to shoot arrows or fight Persia. In Egypt, they would die for the cats. This is how much they took care of them. As a result, Persia won the battle and took over Egypt. Pythagoras loved being in Egypt because he was learning and it was peaceful and calm. This battle made him very sad, so Pythagoras was eager to find a similar place to begin his teachings and discoveries. Therefore, he went to Samos, saw the corruption of Polycrates, and then to Croton as his final destination.

As told before, Cylon's actions were a major event that happened during Pythagoras' life. Actually, some say this event was the cause of his death, but it is unsure. Cylon wanted to be with the Pythagoreans and believed in Pythagoras' theories, but after being rejected by Pythagoras and an old man, he and his people began to plot revenge against Pythagoras. During the "battle," Cylon burned down Pythagoras' school and houses, Brotherhood. Pythagoras either died in the fire, was killed by Cylon, or escaped the place and went to Metapontium alone and starved to death. As said before, Pythagoras' life history was told through different lenses, like Aristotle, his teachers, or his followers. Some also say that it was just a minor conflict and Pythagoras did not die then.

Overall, Pythagoras had some depressing events going on in his life, but through his beliefs, he stayed positive and embraced the truth. If the place he lived in did not suit his beliefs, then he just went to a different place and began his teachings there. He did not worry too much about the past, he focused on the present and thought of ways to make one's lifestyle better through his beliefs. By doing so, he taught other his belief so everyone can be equal and have a lifestyle that will bring peace and positive thoughts into one's soul.

Significant historical events around the world during Pythagoras' life

Five significant historical events happened around the world during Pythagoras' life: The Battle of Yanling, The Nemean Games, Amasis II's contributions, Siddhartha Guatama findings, and the attack of Cyrus on Babylon.

According to Whiting from the Imperial Chinese Military History book, the Battle of Yanling happened in Yanling between the two states, Jin and Chu, in 575 BC. The Jin side won. The Jin army was commanded by Xi Qi, Luan Shu, and Han Jue. They created a plan to position their army in different places. Xi Qi took on the right side of the battlefield, Luan Shu in the center, and Han Jue on the right side. The Chu army was large but had little training. The strong group of this army was only the King's troop. To defeat the army, the Jin army hid under ditches and swamps. They trapped the King's troop and attacked the less trained group of the Chu side from the right, the left, and the center. The Jin also made a plan to not attack until the other side attacks because they first of all did not want to fight them. In the end, the Jin side won.

The Nemean games are similar to the Olympic Games. It started around 573 BC at Nemea. The event was for Zeus, but some say it was an event for Prince Ophelt's early death. These games happen every other year as long as the Olympic or Pythian games did not happen. The Nemean games consist of sports and music games. Anyone can play. The winner gets an olive crown. Years later, they changed the olive crown to a wild celery crown. The prizes are peculiar, but it was a way to be with others and have a good time.

Amasis II, also called Ahmose II, was a pharaoh who encouraged many Greek merchants to come to Naucratis. He obtained the throne of Apries to be the king of Egypt. He built many temples to recover the lost temples that were burnt. As a ruler, he won a battle between Egypt and the Babylonians. This was the highest point of his life.

Siddhartha Guatama from India found Buddhism and began teaching this philosophy to others. Buddhism is still well known today. He is known as Buddha, the Enlightenment, because he has reached enlightenment. He found Buddhism after a young girl offered him rice. He realized that in life, there should be a balance, or as he called it, The Middle Way. Buddha believes in meditation, peace, and purity. Siddhartha Guatama went into deep meditation one day and found the answers to all his confusions.

His father was a king and his father wanted to give him a stress-free life. Therefore, his father built him a palace to give him shelter. He was very young and did not leave the walls of the palace. As he grew older, he became more ambitious and wanted to go on an adventure one day. That day, he was faced with reality.

He saw people growing old and saw someone who was sick. This stroke him to leave the palace and leave his family. He then lived with self-discipline. He learned about meditation and learned to live life with satisfaction. He taught his way of life to other people and became known as Buddha. He is now a religious figure and he created a new religion, Buddhism.

Persian King, Cyrus, took over Babylon in 539 BC. Babylon was a large piece of land which was one of the reasons for Persia to attack Babylon. It covered Iraq, Syria, and Israel. This battle happened in the city of Opis. Persia won because Babylon surrendered. The fight never happened because Babylon surrendered before the battle. Therefore, Babylon was not destroyed through war; however, the country was ruled by Persians which forced many people, including Pythagoras, to move out.

We notice that during Pythagoras' time, many events took place and there were many conflicts going on. In between all these conflicts, Pythagoras discovered many great works that are still known and used today. Pythagoras' beliefs allowed him to move past these conflicts and be positive throughout his life. Because of his beliefs, he was able to create a school for his followers.

Significant mathematical progress during Pythagoras' lifetime

Pythagoras was just one of the important figures during his time that developed important mathematical concepts and formulas. Greek mathematics thrived during his time period. Infinity, integration, elements, numerals, and proofs were developed during this time period. Pythagoras lived in a time of mathematical transformation which allowed new mathematical concepts have a foundation before beginning.

The Attic Numerals, sometimes called the Herodianic numbers, was developed around mid 400 BC. These numerals can be related to the Roman System or the Egyptian System. The numerals are of base ten. For example, ones, fives, tens, fifties, hundreds, five hundreds, and thousands were used to form numbers. Combinations of these numbers formed new numbers. Through these numerals, addition and multiplication was possible. These numerals were used very early on at around 700 BC.

Thales found the foundation of geometry. He found the concept of a triangle within a circle. He said that if one of the sides of the triangle was the diameter of the circle, then the triangle is a right triangle. He also found the basic ratios of intersecting lines on parallel lines. This was called Thales' Intercept Theorem [Figure 3]. Pythagoras connected geometry with numbers by finding the Pythagorean Theorem.

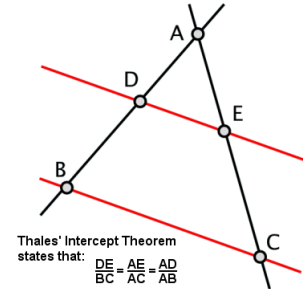


Figure 3: Thales' Theorem

In 500 BC, Zeno of Elea found the concept of infinity. He discovered this through a theoretical race between a tortoise and Achilles. He gave the tortoise a head start and Zeno of Elea noticed that Achilles will never catch up to the tortoise. Also, he discovered that if you keep halving a number, it will never equal to a whole number. This is how infinite divisibility came about too. This concept had some disagreement by Aristotle but later in the years it was accepted.

Democritus realized that a cone is one third of a cylinder. He also discovered that everything is made up of atoms. He wrote many books but not that much attention was given to him. Similar to Zeno's discoveries, he also realized the concept of infinite divisibility.

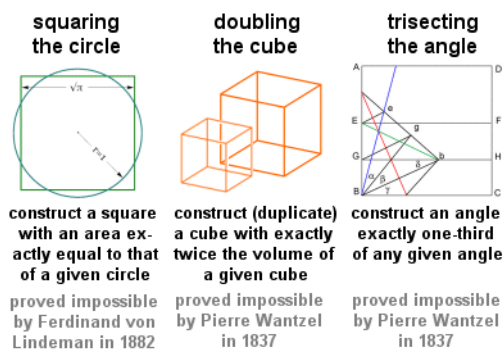


Figure 4: Three Classical Problems

Three Classical Problems [Figure 4] were actually solved during this time period but because of the complexity, the solutions came out in the 1800s. The Three Classical Problems were the squaring of a circle, trisecting the angle, and doubling the cube. Hippocrates of Chios' book *The Elements* helped with the discovery of squaring the circle solution.

Plato discovered the elements related to the Five General Polygons or the Five Platonic Solids. Eudoxus of Cnidus, Plato's student, discovered the idea of integration by using sequential approximations. He discovered this by trying to find the volume of a three dimensional object like a cone or a pyramid.

The concept of creating proofs was also developed. Proofs were the idea of proving something through

consecutive steps. This allowed new concepts to be proved in a uniform way.

All of these mathematics progresses were Greek Mathematics. Egyptian Mathematics developed in 5000 BC. Greek Mathematics developed during Pythagoras' time. All of these mathematical progresses were helpful later on with architecture and everyday life. Greek Mathematics also set a foundation for future education on mathematics.

Connections between history and the development of mathematics

Many mathematical developments occurred during Pythagoras' life. Since borders were changing rapidly and new rulers were coming into power, the pressure for discoveries heightened. Kingdoms wanted to get ahead of everyone and develop something that would give them an edge over others. One of the biggest advances was the introduction of coins. This originated in Lydia. Under the ruling of Croesus, a new form of payment was introduced into the Turkish economy.



Figure 5: Coins

Before coins were used, bartering was the most popular form of acquiring goods. Bartering would mean that one would trade another good or service in exchange for something they want. This was tough to regulate and could not accurately show a kingdom's financial strength. After coins were introduced, a mathematician could compute how a city's economy was doing [Figure 5].

This was both a mathematical and historical development. As more and more kingdoms adopt coins as a form of payment, economies could be regulated and one didn't always need to have a physical good to buy something. It became easier for goods to be exchanged. These coins were made using valuable metals such as silver, gold, and brass and usually had stamps of the kingdom's rulers on them. One could

tell which coin belonged to which kingdom and it was rare to see one kingdom's coins being used in another.

Another significant discovery was actually by Pythagoras' himself. He delineated that there was a connection between music and mathematics. It's said that he was watching a blacksmith strike an anvil and saw. He noticed that the sound that was being produced had a connection to the weight of the hammer. In this case, the weight is the math and changing it will give you a different musical note. He used this concept with the Five General Polygons or Platonic Solids.

Unfortunately no official written works survived about what Pythagoras discovered, however his work was shown by Plato in his school. He taught them that even in space, certain music occurred based on math. He also stated that different musical notes had different effects on people. Certain disorders could be cured using music that was beneficial to the patient. He had cured an alcoholic by prescribing music that was in a specific rhythm. He came up with this theory, because he believed that the body and the "soul" follow the same principles that occur in space and music. They were just executed differently. Therefore, the rules that are true for music, should work on the human body.

A final historical event that occurred was the Olympics in Nemea which was a couple miles outside of Athens. The Olympics might not have used math, but they did gather a large amount of spectators and were very key for the development of sports. Mathematics was still used to measure distances for running races, so that they could be regulated.

These games were really popular. When these games happened, all of Greece would come to the city to watch the games and cheer on. Those who were crowned champions would have lifelong glory and would bring honor to their families. Anybody could participate in it and it is these games that set the foundation for sports for the next two thousand years and more. A lot of the sports today originated from these games. Without these games, sports would not have developed.

Remarks

Pythagoras was and is a very important mathematician and philosopher. He created many mathematical concepts and formula. For example, he proved the Pythagorean Theorem; he related music to whole number ratios which led to a cure for alcoholics. He also solved an equation through geometry. To add on, he discovered concepts of triangles, irrational numbers, the Earth's spherical shape, and the orbiting planets. Platonic Solids were also discovered by him; however, he only discovered three or four of it.

Pythagoras lived a trouble and stress-free life as a kid because his father was wealthy. He had the opportunity to learn more than the average kids at his time. He learned about mathematics, philosophy, geometry, science, astronomy, and cosmology. Through his education and studies, he is known as "the first pure mathematician" (O'Connor, Robertson). Pythagoras' teachers were Thales and Anaximander. Socrates was known to also be his teacher, but he disagreed with all of Pythagoras' beliefs except for immortality. Immortality and reincarnation was one of the few things Pythagoras believed. These beliefs were from the religion Orphic. Because Somas had many restrictions about what one could talk about concerning topics on mathematics, science, religion, philosophy, and science, he went to different countries and made his mark in Egypt and Croton.

Pythagoras created a school and/or society in Croton. He had many followers named The Pythagoreans who "worshipped" him and believed in his ideas and findings. He had an inner circle and an outer circle of followers. The inner circle would follow his beliefs and ideas strictly, and the outer circle would believe in his ideas but would not follow it every day as strictly as the inner circle would. Pythagoras discovered new mathematical concepts and formulas with mostly his inner circle followers.

During his life time, there were many conflicts going on, like the Battle of YinYang, the Battle of Pelusium,

and Cylon's battle against him. However, some historical changes happened, like the beginning of coins, the Nemean Games, and the finding of Buddhism.

Not only were there many historical events, but other mathematicians and philosophers like Pythagoras himself, contributed a lot to mathematics and the progression of mathematics during this time is now the foundation of our mathematics today. Without their contributions, advanced mathematics would not have existed. The Attic Numerals, Thales geometry findings, Zeno of Eleas's concept of infinity, Democritus' atom concept, Hippocrates of Chios' contribution to the "Squaring of Circle" solution, and Plato's element designation brought a new perspective on mathematics for the later years, but Pythagoras' findings was one of the first works that triggered more mathematical ideas later on.

Overall, Pythagoras is legend and a renowned mathematician and philosopher. Although Pythagoras had some strange or unusual beliefs, like eating beans would kill the soul, his mathematical works still exists in the modern day and are being used every day. He was a strong political figure in Croton and was seen as a calm, positive man. He will always be remembered through his discoveries, most importantly, the Pythagorean Theorem.

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