

Theory of numbers:

- Everything in existence is explainable by numbers and this the principle element that all thing in existence stem from
 - The entire universe is identified with numbers
 - Number is conceived as...something which exists in and composes all things
 - ...nothing could exist that implied a mathematical impossibility
 - Light is proven to be created by numerical frequencies and speeds at which energy moves
- Numbers weren't something to be used, but something whose nature must be discovered and experienced; they're their own entity
- Traced the origin of all things to the even and odd. Even is unlimited and odd is limited
- Unlimited is evil and evil is limited because with the unlimited one has a greater chance of error and mistake
- Geometry and math are considered to be "intimately related" geometric figure is "of points in space, the number is the actual shape/object"
- "...mathematics was a bridge between the visible and invisible worlds"

Theory of music and cosmology:

- Found the relation between mathematics and music and cosmology
- ...saw the modifications and the ratio of the musical scales were expressible in numbers...
- The earth is perfectly spherical as well as heavenly bodies
- Believed that music was number and that cosmos was music
- ...vibrating strings produce harmonious tunes when the ratios of the lengths of the strings are whole...
- Plants and stars move according to mathematical equations which correspond to musical notes producing a symphony "harmony of the spheres"

Pythagoras Secret Society:

- After living in Egypt, Pythagoras adopted much of their beliefs which he implemented in his society
 - Ex. secrecy, no beans, no animal flesh, purity
- First founded a school in Crete called the semicircle, but later left due to disapproval from citizens

- His second society was in crotona which consisted of the inner circle followers
(mathematikoi-permanently with society, no personal possessions, vegetarian, strict rules
 - Reality is mathematical in nature
 - Philosophy can be used for spiritual purification
 - The soul can rise in union with the divine
 - Certain symbols have a mystical significance
 - All members must obey strict loyalty and secrecy
- Outer members followed more relaxed rules (akousmatics)
- Of pythagoras' actual work, nothing is known due to the secrecy
- ...the principles of math, the concept of number...

The spiritual according to pythagoras:

- The soul is immortal and it changes into other kinds of living things
- What happens recurs at certain intervals and nothing is absolutely new
- All things that come to have souls should be recognized as beings of the same kind
- Believed in a kind of reincarnation explaining his adherence to vegetarianism