Outline:

Quadrivium
- The Quadrivium is in the curriculum of almost every school in the world.
- The **Quadrivium (Latin)** was originally called **Mathematics (Greek)**. These were the lessons of the people of Pythagoras.
  - **Pythagoras** thought all of reality of being suffused with number. This evoked mystery and awe of Pythagoras.
  - **Plato** believed this was an essential element toward rising from wonder to wisdom.
- The four disciplines of the Quadrivium:
  - Arithmetic
  - Geometry
  - Astronomy
  - Music
    - Psalm 19
- These were the traditional way to elevate the mind of students from wonder to wisdom by training the reason.
- Mathematics is not actually in the Western curriculum because of its usefulness. We should not learn mathematics with an eye toward usefulness, Plato thought that mathematics gave us insight into reality and how truth works (to associate our minds with perfections).
  - Scientific Revolution (17th Century): This is the apex of the mathematical arts. This becomes the dominant way of seeing reality. Galileo, Descartes, and Newton realize that mathematical number is reflected in reality. As that unfolds, we get modern science.
  - In the tradition, mathematics was in the curriculum because of its ability to delight and provoke wonder that led to wisdom.
- Mathematics was associated with the Transcendent.
  - Pythagoras' music of the spheres, for Augustine became the music of the angels.
  - Wonder, wisdom, work, and worship will come up through discussion of the Quadrivium.

Three Syntheses
- **Discrete and Continuous**
  - **Discrete** number is to see discrete things that add up into a multitude.
  - A **continuous** line segment can be divided in half infinitely.

- o For the ancients there was a distinction between treating something as a discrete quantity that you add up to a multitude or taking something continuous that was infinitely divisible into separate parts.
- **Pure and Applied**
  - o **Pure:** Arithmetic and geometry are exploration of numbers in themselves.
  - o **Applied:** Looking for number in the created world. Music (and astronomy) is full of ratios and proportions. Pythagoras and Plato thought that there many numerical values woven throughout creation. *Number as number animates reality.*
- **Sensible and Intelligible**
  - o **Sensible:** When Kepler was doing astronomy, he titled the work "The Harmony of the World".
    - ▪ When he was doing astronomy, he titled it with music.
    - ▪ All of the liberal arts are irreducible unions of skill and content. Astronomy was a very mathematical discipline in the Quadrivium.
    - ▪ They were taking vast amounts of celestial data.
    - ▪ They were gathering date from the senses and ordering it.
  - o **Intelligible:** Plato in the *Timaeus* moves from the intelligible to the sensible. Plato had a theory that mathematics was behind everything, but he would work it out in the intelligible and then look for it in the sensible.
  - o The intelligible to the sensible are always intertwined, but they are different motions:
    - ▪ **Sensible to intelligible: Empirical to a theory**
    - ▪ **Intelligible to sensible: Theory to an observation**
- These syntheses are all participating in mathematics. They cannot be understand in isolation, but all of these things work together.

How does the Quadrivium inform more than natural philosophy? How does it reach to moral and divine philosophy?
- Three levels for music (as discussed by Boethius):
  - o Musica instrumentalis
  - o Musica humana: Influence of number in human life and human society. Is there something about the size of the group that is reflective of the meaning of the group?
  - o Musica mundus: Music of the world

There is a progression in the Trivium, is there a similar order for the Quadrivium?
- For Pythagoras and Plato, Arithmetic was the apex of the Quadrivium.
- Augustine saw the Quadrivium culminating in music.
- The Quadrivium is a fourfold path rather than four paths.