

CO 480 Week 1 Learning Goals

By the end of this week, students should be able to...

- Discuss the life of Alexander the Great including his conquests and his founding of Alexandria. Other pieces of information you should know include his father and tutor.
- Describe the Ptolemaic era of Alexandria.
- Describe the Musaeum.
- Identify the nine muses.
- Discuss how Alexandria obtained new books.
- Discuss the Great Fire of Alexandria.
- Identify the four books of Diophantus.
- Be able to translate to and from Diophantus' Greek to English given the Greek alphabet to number chart (Note this means you would be required to know by heart what $M, \varsigma, \Delta^{\Upsilon}, K^{\Upsilon}, \Delta^{\Upsilon}\Delta, \Delta K^{\Upsilon}, K^{\Upsilon}K$ mean).
- Solve problems from Diophantus' *Arithmetica*. Solving here could mean in general or in the style of Diophantus.
- Identify local obstructions to solving problems in integer Diophantine Equations.
- Explain and utilize the rational point method discussed based on Book II Problem 8.
- Discuss some of Diophantus' contributions from *Arithmetica* (for example, solving quadratic equations, theorems relating to the sums of squares, etc.)