

ISP 205
Review Questions, Week 1

This is not required homework. There is no need to hand it in. It will not be graded. Answers will be supplied next week.

These questions are intended to help you think about the more important points from my lectures. The exams will ask you about these points, as well as about additional details. But note that the exams will be multiple choice questions.

1. What do we mean by “the universe”?
2. Why did the ancient Greek astronomers conclude that the Earth was at the center of the Solar System? What led such smart people to make that mistake?
3. What is the major difference between the models of the Solar System put forward by Ptolemy and by Copernicus?
4. What is an epicycle, and why was it needed in the model of Ptolemy?
5. In Copernicus’ model, what causes retrograde motion? What do we even mean by “retrograde motion”?
6. Why is Copernicus’ work often referred to as the “*Copernican Revolution*”?
7. State Kepler’s three laws.
8. What is the general shape of a planet’s orbit?
9. When does a planet move fastest in its orbit? Slowest?
10. Do the outer planets take more time or less time than the inner planets to complete an orbit around the Sun?
11. What was Galileo’s strongest proof that Copernicus was correct?
12. What did Galileo mean when he (reputedly) muttered “*Eppur si muove*”? I don’t want just the literal translation... I want to know what he was referring to.