Make sure you answer every part of the question. Write out your answers (neatly!) and bring them to class on Tuesday. Some of these questions are closely related to questions from SZE but they are not identical so be sure that you are doing the right question. If you have questions about the assignment you may email them to me in good time but don't expect me to answer emails sent late Monday night!

A. Prove that the following collections of numbers are denumarably infinite (correspond to a countable infinity). (The background information you need is contained in Huggett's commentary from Ch. 3, and some hints were given in class this week.)
   (i) {0, 1, 2, 3, …}
   (ii) {2, 4, 6, 8, …}
   (iii) {0, 10, 100, 1000, …}
   (iv) {…, -2, -1, 0, 1, 2, …}
   (v) The set of all fractions.

B. Explain how it can be that two continuous straight line segments of distinct lengths have the same number of points. What does this tell us about the way that the lengths of the line segments are related to the number of points they contain? How does this resolve Zeno's paradox of plurality?

C. Consider Aristotle's use of dialectic to establish the first principles of his theory of place in the Physics. (That is, the way he argues for and explains the theory he advocates. The extracts are in SZE Ch. 4.) What common beliefs and puzzles does Aristotle mention? Does he use them to reject any theory? Does he explain how they are consistent with or solved by his theory of place?

D. Make a tentative suggestion for a philosopher or scientist that you would like to study for the upcoming essay assignment. (This can be anyone from the first 7 weeks of the course.) What interests you about them? What would you like to know about them?