

1 Weekly assignment for week 12 AST3220

Prepare for class (to be discussed in plenary)

Answer the questions on inflationary cosmology listed below. In addition to a qualitative answer, you should try to make some quantitative estimates.

- a) What is the flatness problem?
- b) What is the horizon problem?
- c) What is the relic/monopole problem?
- d) What is inflation?
- e) How can inflation solve the above mentioned problems?
- f) What is an e-fold of inflation? How many e-folds are needed to solve the problems listed above?
- g) How can inflation lead to the formation of structures in the universe?
- h) At what time in the universe evolution could inflation take place? Why?
- i) What is reheating?