Assignment sheet: Week 7 (Feb 24)

After the seventh week of class you should be able to answer each of the following questions thoroughly, and with confidence. You should have this sheet completed by: **Tuesday, Mar 3**

1. What is the **horizon problem**?

2. What is the **flatness problem**?

3. When did **inflation** or the Inflationary Epoch, occur—if it did occur? What caused it?

4. How does **inflation** take care of both the **horizon problem** and the **flatness problem**?

5. What is the **critical mass density**?

6. What will be the fate of the Universe if it is **open**?

7. What will be the fate of the Universe if it is **closed**?

8. What is meant by a **flat Universe**?

9. What is a **white dwarf**? What is the Chandrasekhar limit?

10. What is a **Type Ia supernova**?

11. What does **dark energy** refer to?

12. What is the **cosmological constant**?

13. What is **quintessence**?

14. According to current measurements and theoretical estimates, what is the approximate “break down” of the Universe, in terms of **luminous matter** (all of the things that we study with our telescopes), **dark matter**, and **dark energy**?

   Luminous matter: _________ %
   
   Dark matter: _________ %
   
   Dark energy: _________ %