

NORTHERN ILLINOIS UNIVERSITY

PHYSICS DEPARTMENT

Physics 162 – Introductory Astronomy

Fall 2025

Problem Set #6

Problem Set Due: Thurs., Oct 16, 2025

Read OpenStax: Chapter **6.1**, Chapter **7** (**Note: read only Section 6.1 of Chapter 6**)

There will be a Quiz #2 on Week of Oct 20-26

Show explicitly all your work for full credit.

Chapter 6, Section 6.1

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|---------------------|-----------------|
| 1. Expert TA: 6.1.2 | multiple choice |
| 2. Expert TA: 6.1.3 | multiple choice |
| 3. Expert TA: 6.3.1 | draw figures |
| 4. Expert TA: 6.6.2 | true/false |
| 5. Expert TA: 6.6.3 | true/false |

Chapter 7

- | | |
|-----------------------|------------------|
| 6. Expert TA: 7.1.2 | multiple choice |
| 7. Expert TA: 7.1.5 | multiple choice |
| 8. Expert TA: 7.1.8 | multiple choice |
| 9. Expert TA: 7.1.16 | multiple choice |
| 10. Expert TA: 7.1.32 | multiple choice |
| 11. Expert TA: 7.2.1 | show calculation |
| 12. Expert TA: 7.3.1 | write in order |
| 13. Expert TA: 7.6.2 | true/false |
| 14. Expert TA: 7.6.6 | true/false |
| 15. Expert TA: 2.7.8 | simulation |

16. Click on the following link and listen to the video:

<https://illinois.pbslearningmedia.org/resource/tdc02.sci.phys.matter.radiodating/radio-metric-dating/>

- (a) The relative amount of which two elements lead to the discovery of the age of the earth to be around 4.5 billion years?
- (b) If NASA sent you to Mars, which radioactive element would you look for (with your Geiger counter, like the person in the video) to determine the age of Mars?