

NORTHERN ILLINOIS UNIVERSITY

PHYSICS DEPARTMENT

Physics 162 – Astronomy

Spring 2024

Problem Set #6

Problem Set Due: Thurs., Mar. 7, 2024

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

*There will be a Quiz #2 on Tuesday, March 12 (it will be posted March 12 with an End date of March 21—thus, you do not have to do it over Spring Break)*

**Show explicitly all your work for full credit.**

**Chapter 6, Section 6.1**

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: **7.1.37** multiple choice
12. Expert TA: **7.1.50** true/false
13. Expert TA: **7.2.1** show calculation
14. Expert TA: **7.6.2** true/false
15. Expert TA: **7.6.6** true/false

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

<https://illinois.pbslearningmedia.org/resource/tdc02.sci.phys.matter.radiodating/radiometric-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?