

Quantum Physics, Preparation for Tuesday, Apr. 9

Finish Moore Q13

Finish your study of Q13

Presentations/Examples for Class

- (1) Brian will present the relativistic kinematics that forced the hypothesis of the neutron.
 - (2) Two people (who did not present last time) pair up and present how Aston's mass spectrometer works and what it accomplished
 - (3) We will look ahead to Chapter 14 and do an exercise and a problem from that chapter in-class
-

For Problem Set 16

Nucleus Size

1. Q13B.4, p. 213. In the previous problem set, we used some nucleus radii. In this problem, you use the empirical formula for nucleus size to get some radii
2. Take your answers to the previous problem and calculate the nucleus volumes for carbon and uranium. Can you see a simple way to get these answers?

Binding Energy

3. Make a table consisting of the answers to Q13B.6, Q13B.7 and Q13B.8 on p. 213.
4. Add to the table you just made an additional column representing the binding energy per nucleon. This is just taking the binding energy you calculated in the previous problem and dividing by 23, 56, and 208, respectively.

Radioactivity Rates

5. Q3M.10, p. 214. Also, as easy units conversion problems, convert the sample radioactivity rate in this problem to Curies and Becquerels (two of the units Jay presented). Moore doesn't introduce either of these units until p. 237.