Physics 220 Assignment 1
Due Tuesday 1/20/09

Answers to odd-numbered problems are in the back of the book, as are atomic and nuclear data.

To hand in:
1. TZD 2.18

2. TZD 2.31

3. TZD 3.6

4. TZD 3.12 (choose the most abundant or longest-lived isotope in each case)

5. a) Show that the binding energy of ^{4}He is 28 MeV by finding the difference in mass between the atom and its pieces.
b) The binding energy of the two electrons in ^{4}He is 80 eV. Is this a significant contribution to the binding energy? (This explains why chemists typically ignore changes in mass due to changes in electron binding in chemical reactions.)

6. TDZ 3.24 a, b

Not to hand in, but for practice (answers are in the back of the book):
TZD 2.19; 3.3, 3.7, 3.21