

PHYS3122A Homework 5, due 10/02/2009 at 5pm:

NOTE:

- We'll have a midterm exam on Friday October 9. Topics covered are Chapter 1 and 2. No homework is due that week.
 - You are allowed to bring one formula sheet to the test (double-sided ok). No textbook or lecture notes allowed.
 - I decided that we will have two midterms instead of one before the final. However, **only one** midterm will count toward the final grade (in this way, if you have one bad midterm, you can use the other one instead).
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1. Solve problems 2.22, 2.23, 2.24, 2.25 (a and c), 2.28, 2.31, 2.34, 2.36.
 2. Approximating the electron as a uniformly charged sphere with total charge $e = -1.6 \times 10^{-19} \text{C}$ and radius r_{class} . Assuming that all electron rest energy mc^2 comes from its electrostatic self-energy. What is the value for the "classical" proton radius r_{class} ?