LEARNING OBJECTIVES:
1. **Understand the derivation of the radiation reaction force on a non-relativistic particle.**
2. **Use the radiation reaction force to solve problems.**

1) List all the assumptions that are made in deriving the Abraham-Lorentz formula (Equation 11.75).

2) Study Example 11.4. In that problem, Griffiths finds that the radiation damping increases as oscillation frequency goes up. Does that make sense? Why or why not?

3) One of the problems with the planetary model of the atom is that an electron cannot stay in a stable orbit if the only force acting on it is the electrical attraction of the nucleus. Describe why this is so based on what you know of the radiation reaction force.

4) *Note: This is a review question from Chapter 9.* An electromagnetic plane wave is propagating in the positive *x*-direction. At this instant in time, what is the direction of **E** at the center of the rectangle?

a. In the positive *x*-direction
b. In the negative *x*-direction
c. In the positive *y*-direction
d. In the negative *y*-direction
e. In the positive *z*-direction
f. In the negative *z*-direction
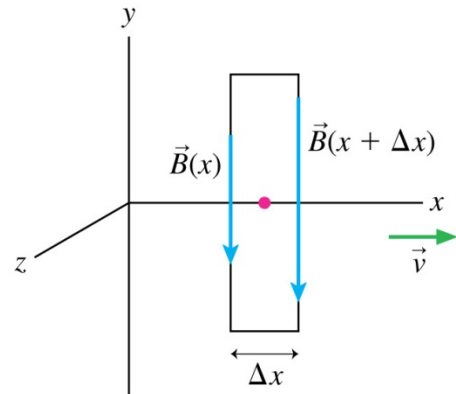
5) What did you find difficult or confusing in the pre-class work? If nothing was difficult or confusing, tell me what you found most interesting. Please be as specific as possible.

6) Document whatever help you received on the preclass work.