

*DUE: WEDNESDAY APRIL 9, 2008*

1. True/False questions: For each of the following statements, indicate whether the statement is true or false. Briefly explain your reasoning (for example, if false, provide a counter-example).

- (a) Life would be completely different if electrons were positively charged and protons were negatively charged.
- (b) If an electron and a proton are released in the same electric field, the force on each has the same magnitude.
- (c) If an electron and a proton are released in the same electric field, the acceleration of each has the same magnitude.
- (d) A particle released in an electric field will follow the electric field lines.
- (e) The electric force is a conservative force.

To earn full credit on the following problems, you must exhibit the steps that lead to your final result. The graded homework will be based on the clarity of your method of solution as well as on your final answer.

- 2. Giancoli, Chapter 21, problem 4.
- 3. Giancoli, Chapter 21, problem 30.
- 4. Giancoli, Chapter 21, problem 54.
- 5. Giancoli, Chapter 21, problem 61.
- 6. Giancoli, Chapter 21, problem 64.
- 7. Giancoli, Chapter 21, problem 66.
- 8. Giancoli, Chapter 21, problem 78.
- 9. Giancoli, Chapter 21, problem 86.
- 10. Giancoli, Chapter 21, problem 90.