

PHYS 622 – HOMEWORK # 5 – DUE WEDNESDAY, 03/03/2010

Problem 1. Jackson's problem 11.23.

Problem 2. Jackson's problem 11.25 parts (a) (b) and (c).

Problem 3. A particle with mass m and charge e moves in an uniform, static, electric field \mathbf{E}_0 .

- a) Solve for the velocity and position of the particle as explicit functions of time, assuming that the initial velocity \mathbf{v}_0 is perpendicular to the electric field;
- b) Using the previous result, derive the trajectory of the particle. Discuss the shape of the trajectory for short and long times. (Define "short" and "long" times.)