

# Physics 504 Ordinary Homework #1

## Due: Feb. 10, 2011

1. Do Jackson 6.1
2. Do Jackson 6.4. Note that in the steady state the ohmic nature just assures that the charges are co-rotating. Also, the electric field induced need only adjust for the magnetic force — the centripetal force is presumably provided by something we are not including in  $\vec{E}$  and  $\vec{B}$ .
3. Do Jackson 6.5. I believe Jackson intends localized time-independent  $\vec{J}$  to imply also that  $\rho$  is time-independant, and of course charge obeys the continuity equation.