

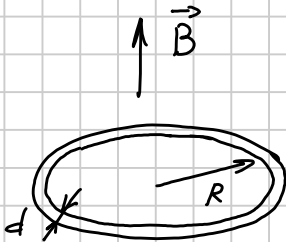
## Homework 9

Note Title

3/12/2008

① Problem 7.7 (page 299). [4 points]

②



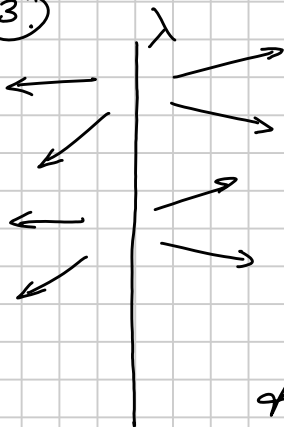
Wire of diameter  $d$  makes a circular loop of radius  $R$ .

It is made of a metal with conductivity  $\sigma$  and placed in

external magnetic field  $\vec{B}$  as shown in picture.

At some moment of time magnetic field is switched off. Find total charge that is transferred across any section of the wire as a result of this. [3 points]

③



Homogeneously charged wire with linear density  $\lambda$  is losing charge into the outside space at the rate  $\Delta\lambda/\Delta t$ .

Using Maxwell's equation (7.36) find magnetic field at some distance  $R$  from the wire [3 points]