

# Workbook



## Table of Contents

Magnetic Dipole Moment.....	2
Magnetic Dipole Moment.....	2

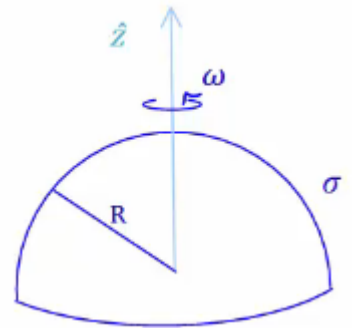
# Magnetic Dipole Moment

## Magnetic Dipole Moment

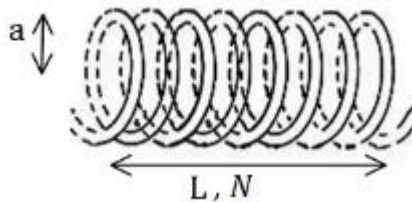
---

### Questions

- 1) We are given a magnetic dipole located at the origin, with magnetic dipole moment  $\vec{\mu} = (\mu, 0, 0)$ . Find  $\mu$  such that an electron, positioned at  $(0, -a, 0)$ , with velocity  $(0, 0, v)$ , will move in circular motion.
- 2) Half a spherical shell has charge density  $\sigma$  and rotates about the z axis. What is the magnetic dipole moment of the shell?



- 3) A coil of radius  $a$  and length  $L$  has  $N$  turns. Calculate the magnetic dipole moment of the coil.



\*For the solutions go see the videos