

Lorentz Force Problem 1

1. An electron ($q = -1.6 \times 10^{-19}$) moves to the right with speed 5×10^4 m/s in the presence of an external B field of 1 T. Find:
 - a. The direction of the magnetic force.
 - b. The magnitude of the magnetic force.

Lorentz Force Problem 2

1. A beam of protons ($q = 1.6 \times 10^{-19}$) enter a region with a uniform electric field $E = 100 \text{ N / C}$ directed upwards and magnetic field $B = 2 \text{ T}$ out of the page. Find the velocity v that allows the protons to move undeflected.