

$$v = 2.0 \times 10^7 \text{ m/s}$$

$$B = .5 \text{ T}$$

$$q = 1.6 \times 10^{-19} \text{ C} \quad (\text{electron charge})$$

$$a) \quad F_B = q \cdot v \cdot B$$

$$= (1.6 \times 10^{-19} \text{ C})(2.0 \times 10^7 \text{ m/s})(.5 \text{ T})$$

$$F_B = 1.6 \times 10^{-12} \text{ N}$$

By R.H.R:
for electron

$$F_B = \overrightarrow{F_B}$$

b) To cancel F_B :

$$F_B = F_E$$

$$q \cdot v \cdot B = q \cdot E$$

$$(2.0 \times 10^7 \text{ m/s})(.5 \text{ T}) = E$$

$$E = 1.0 \times 10^7 \text{ N/C}$$

Direction of F_E must cancel direction of F_B

F_B is $\longrightarrow$ so F_E is $\longleftarrow$

E is opposite
 F_E on electron

E is $\longrightarrow$