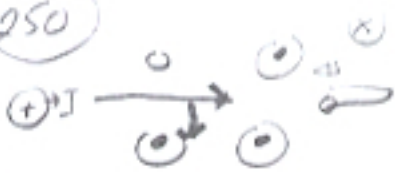
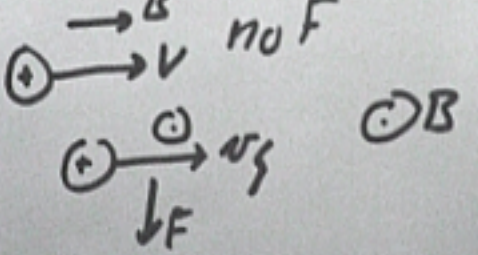
250

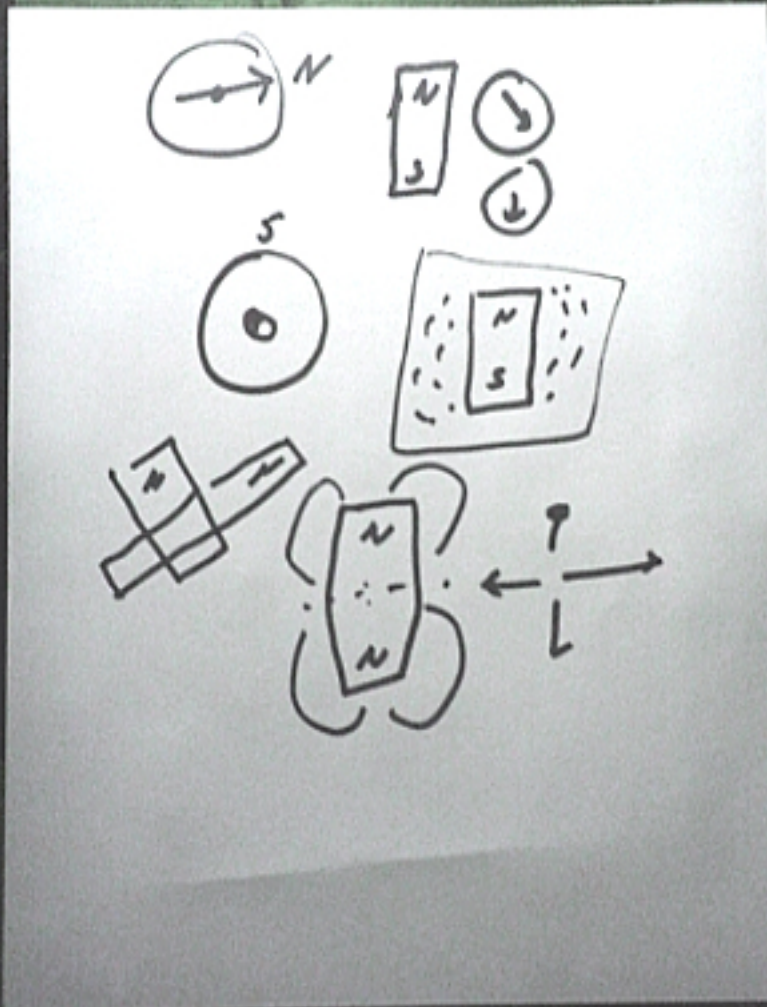


$\vec{F} = q\vec{v} \times \vec{B}$

$\hat{x} \times \hat{y} = \hat{z}$

$\vec{F} = q\vec{E} + q\vec{v} \times B$




N
N
S
S
N
S
N
N
N
N
F
L

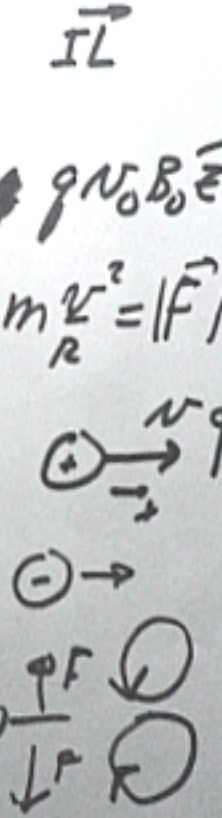
$\vec{V} = V_0 \vec{i}$

$\vec{B} = B_0 \vec{k}$ $I\vec{L}$

$\vec{F} = q\vec{v} \times \vec{B} = q v_0 B_0 \vec{j}$

$\vec{F} = m\vec{a}$ $m\frac{v^2}{R} = |\vec{F}|$

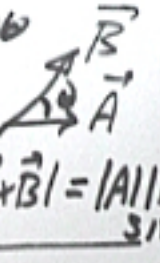
$R = \frac{mv^2}{|F|}$



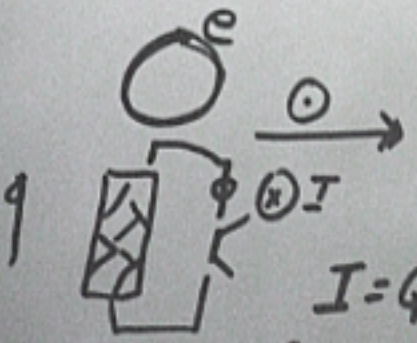
$+Q \rightarrow$

$\vec{F} = I\vec{L} \times \vec{B}$

$|\vec{A} \times \vec{B}| = |A||B| \sin\theta$



$B = \frac{N}{Am}$ $\quad 1T = \frac{1N}{1A \cdot 1m}$



$I = QV$

$I = \rho NA \quad \rho \quad Q = \rho V \vec{b} \quad \frac{\vec{F}}{q}$

(+)

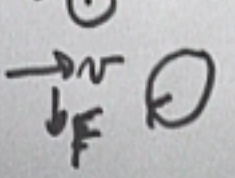
$m_p \sim 1.7 \times 10^{-27}$ kg

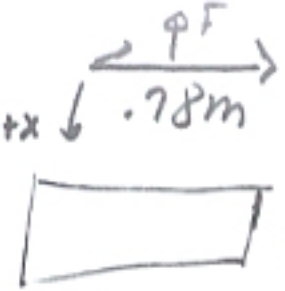
$V = .01C = 3 \times 10^{6} \frac{m}{s}$

$\otimes B = 10T$ $\quad q = 1.6 \times 10^{-19} C$

$F = qv = m\frac{v^2}{R}$

$R = \frac{mv}{qB} = 3 \times 10^{-5} m$





$F = \Delta p / \Delta t \quad B = \frac{F}{q v}$

$\boxed{F = IL B} \quad B = \frac{F}{IL}$

$I = \frac{\Delta Q}{\Delta t} = \frac{.1 N}{(.35 A)(.78 m)} = .37 T$

$I = \frac{F}{LB} \quad 1A = \frac{1N}{1m \cdot 1T}$

$$\vec{F} = I\vec{L} \times \vec{B}$$

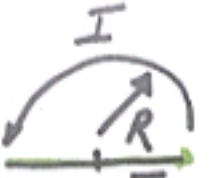
$$\vec{F} = \sum_{\text{Segments}} I\vec{L}_i \times \vec{B}$$

$$= -\sum \vec{B} \times I\vec{L}_i$$

$$= -I\vec{B} \times \sum \vec{L}_i$$

$$\vec{Disp} = \sum \vec{D}_i = \vec{0}$$

$$\Rightarrow \vec{F} = \vec{0}$$



$$\vec{F} = \oint_0^{\pi} I R B \, d\theta \, |\hat{\omega} \times \hat{B}|$$

$$F = I(2R)B$$

$$\frown = -I(2R)B$$