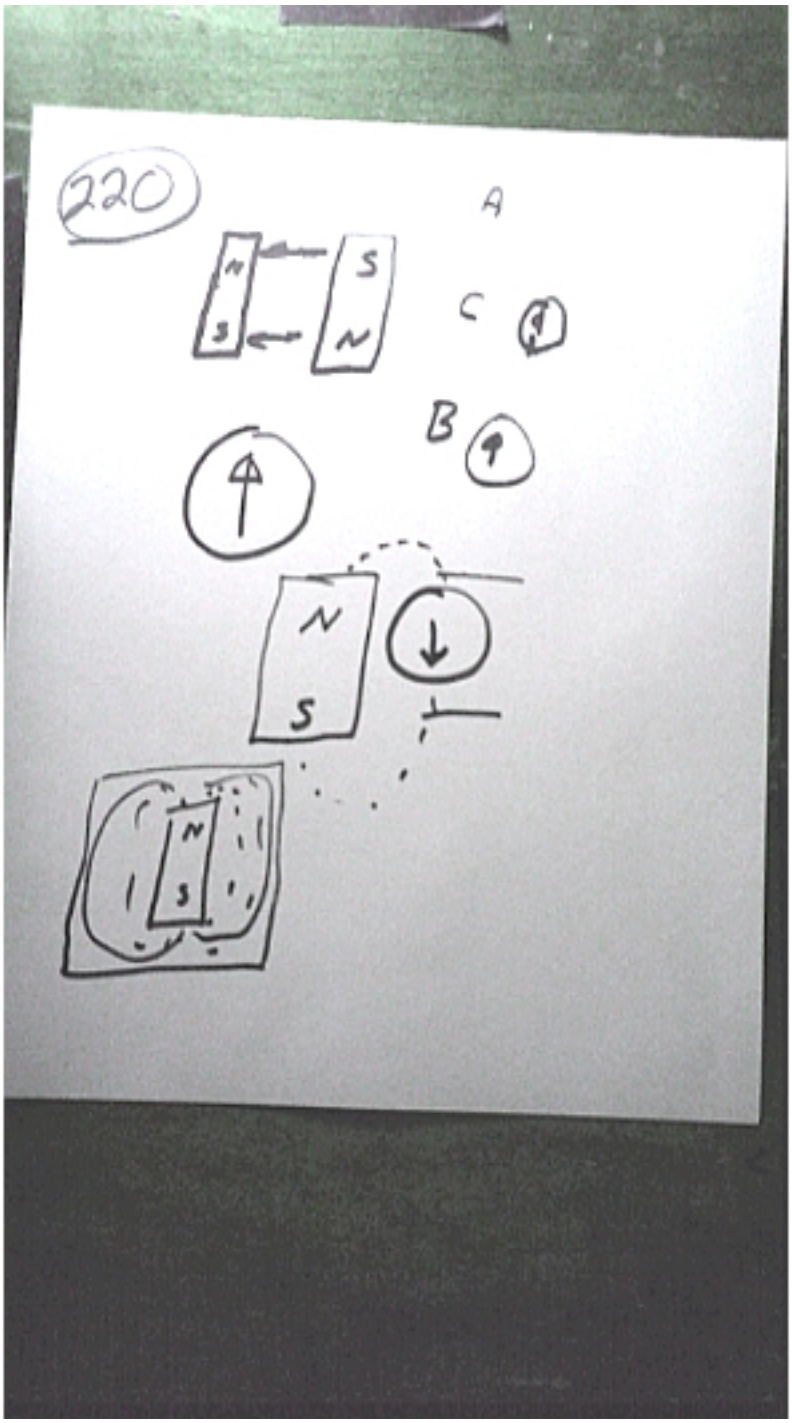
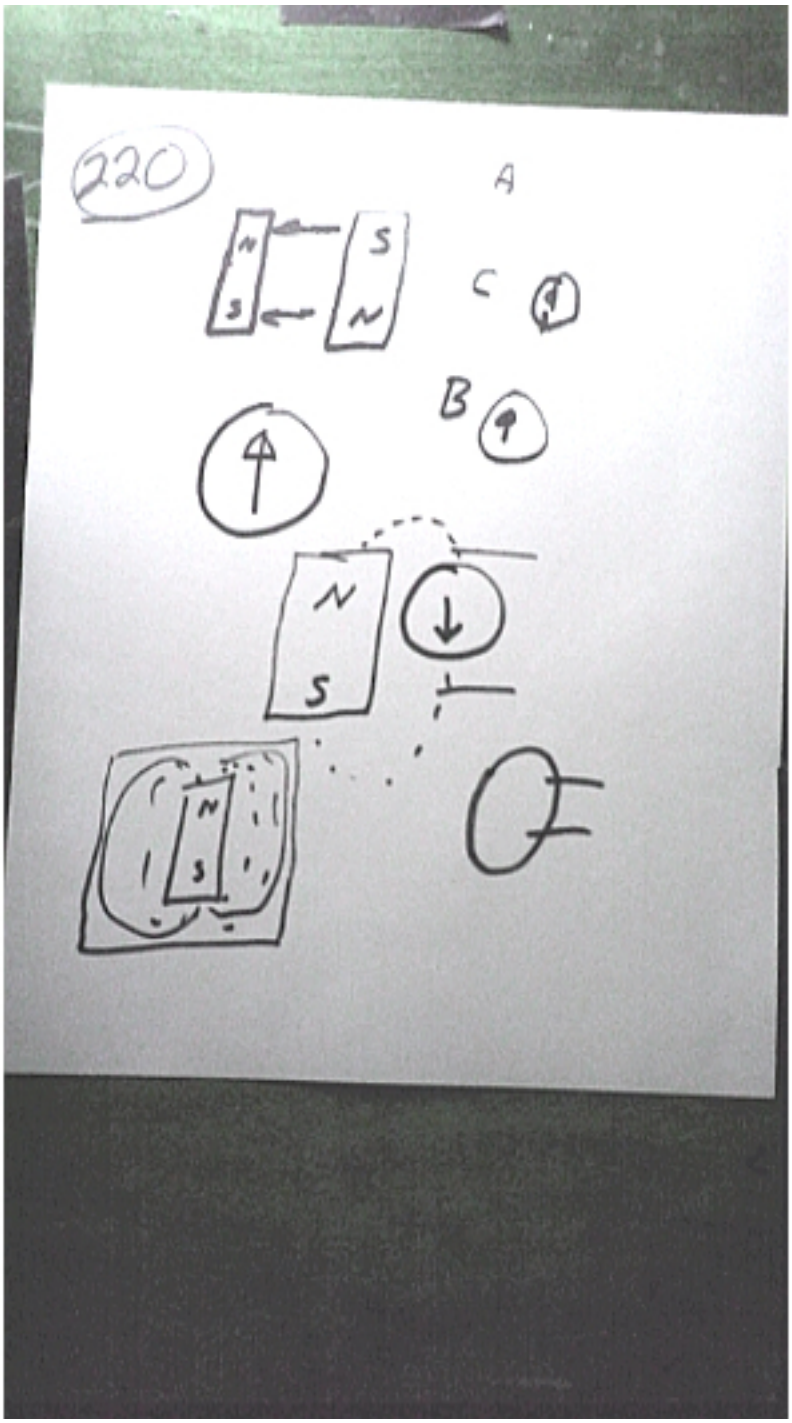
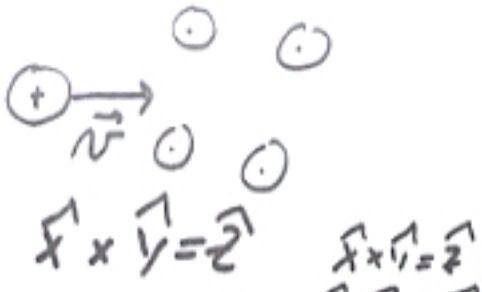

220
A
N
S
S
N
C
B
N
S
N
S

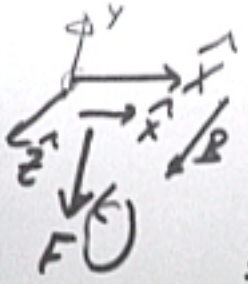

220
A
N
S
S
N
C
B
N
S
N
S



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

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

$\vec{y} \times \vec{x} = -\vec{z}$



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

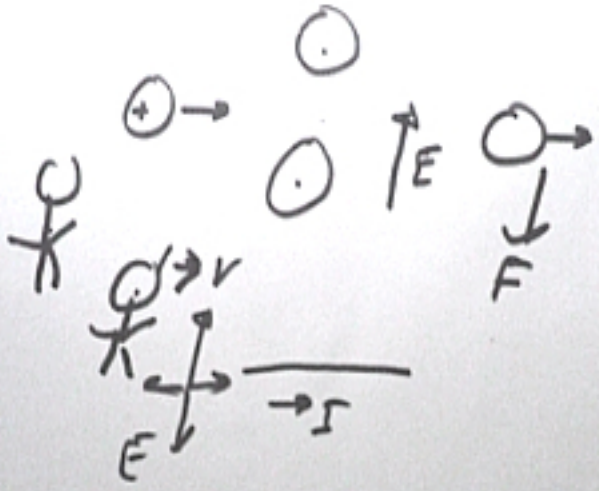
$\vec{z} \times \vec{y} = -\vec{x}$

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

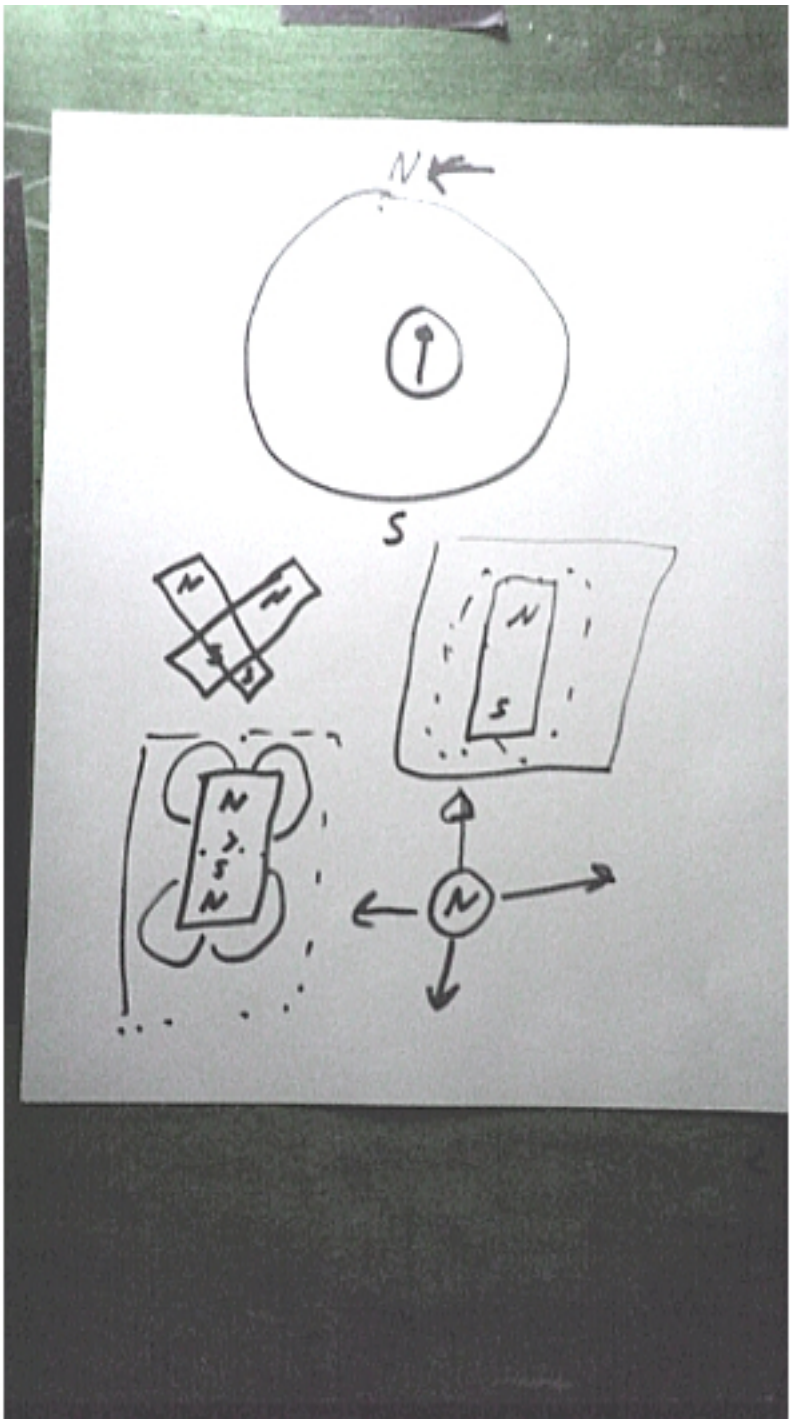
$\vec{x} \times \vec{z} = -\vec{y}$

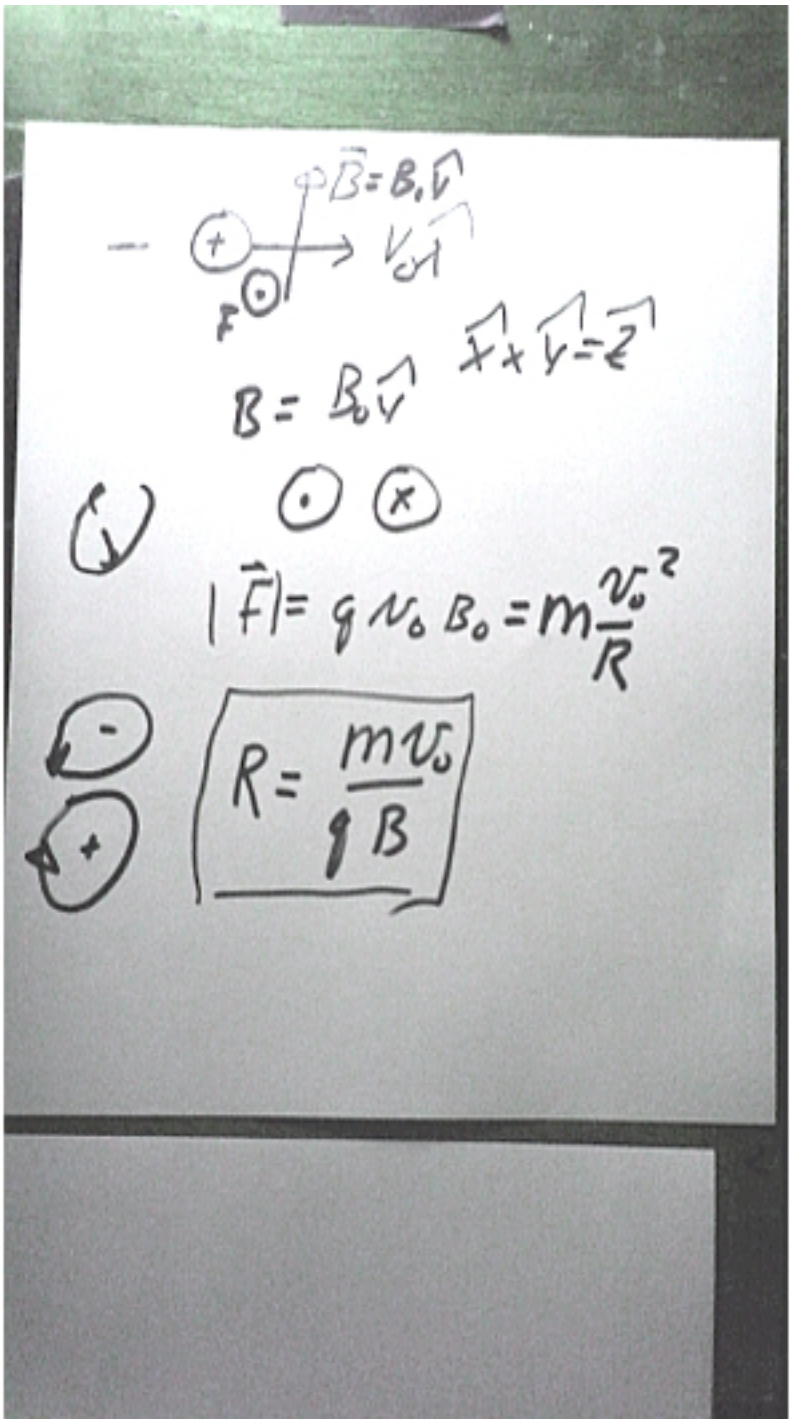
$\vec{F} = m\vec{a} \quad \& \quad m\frac{v^2}{R} = |\vec{F}|$

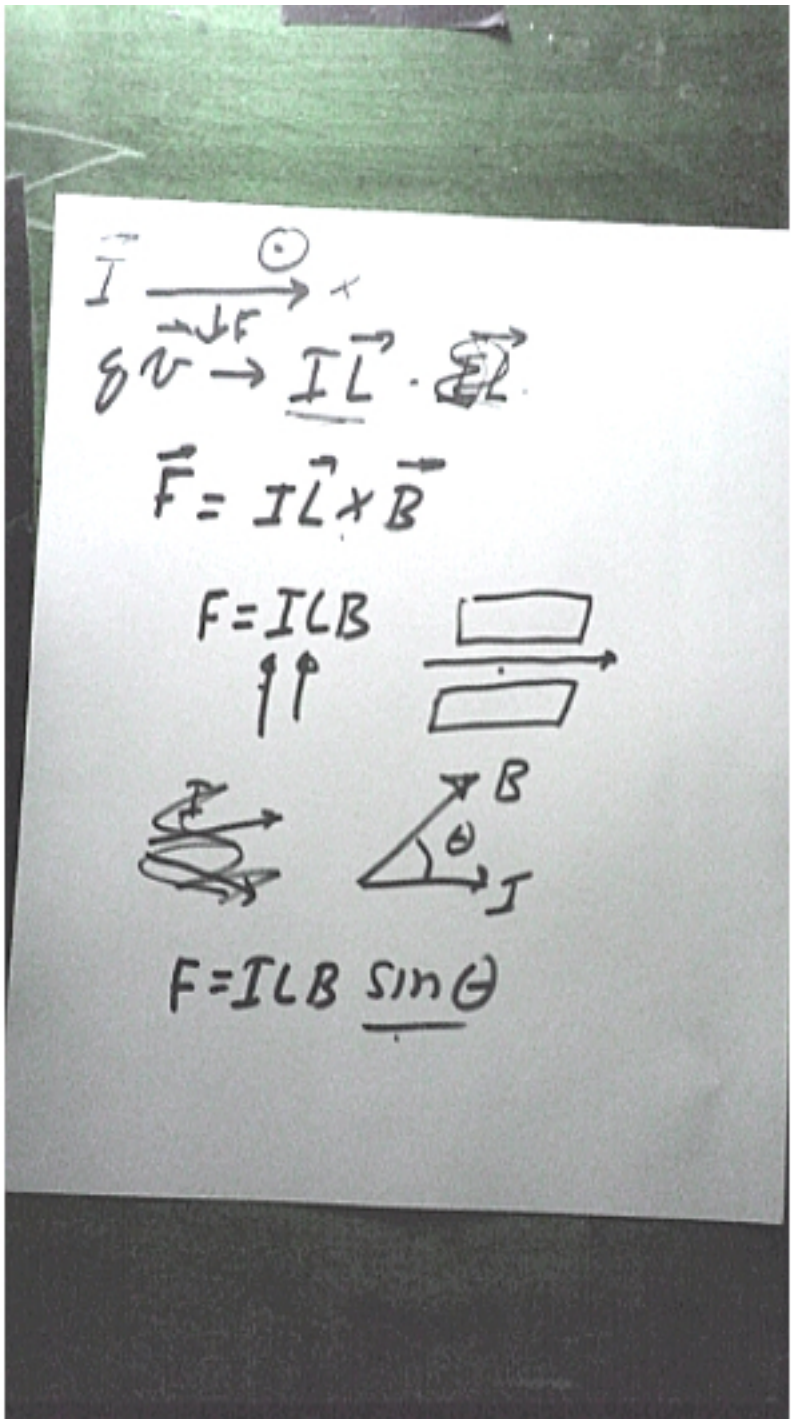
$\vec{F} = q\vec{v} \times \vec{B}$ Lorentz



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


N
S
N
N
S
S
N
S
N
S
N
N


$\vec{B} = B_0 \vec{v}$
$\vec{v}_0$
F
$B = B_0 \vec{v}$
$\vec{F} \times \vec{v} = \vec{z}$
$|\vec{F}| = q v_0 B_0 = m \frac{v_0^2}{R}$
$R = \frac{m v_0}{q B}$


I
F
$\vec{F} = I\vec{L} \times \vec{B}$
F = ILB
B
θ
I
F = ILB sinθ

$$I = \frac{\Delta Q}{\Delta t}$$

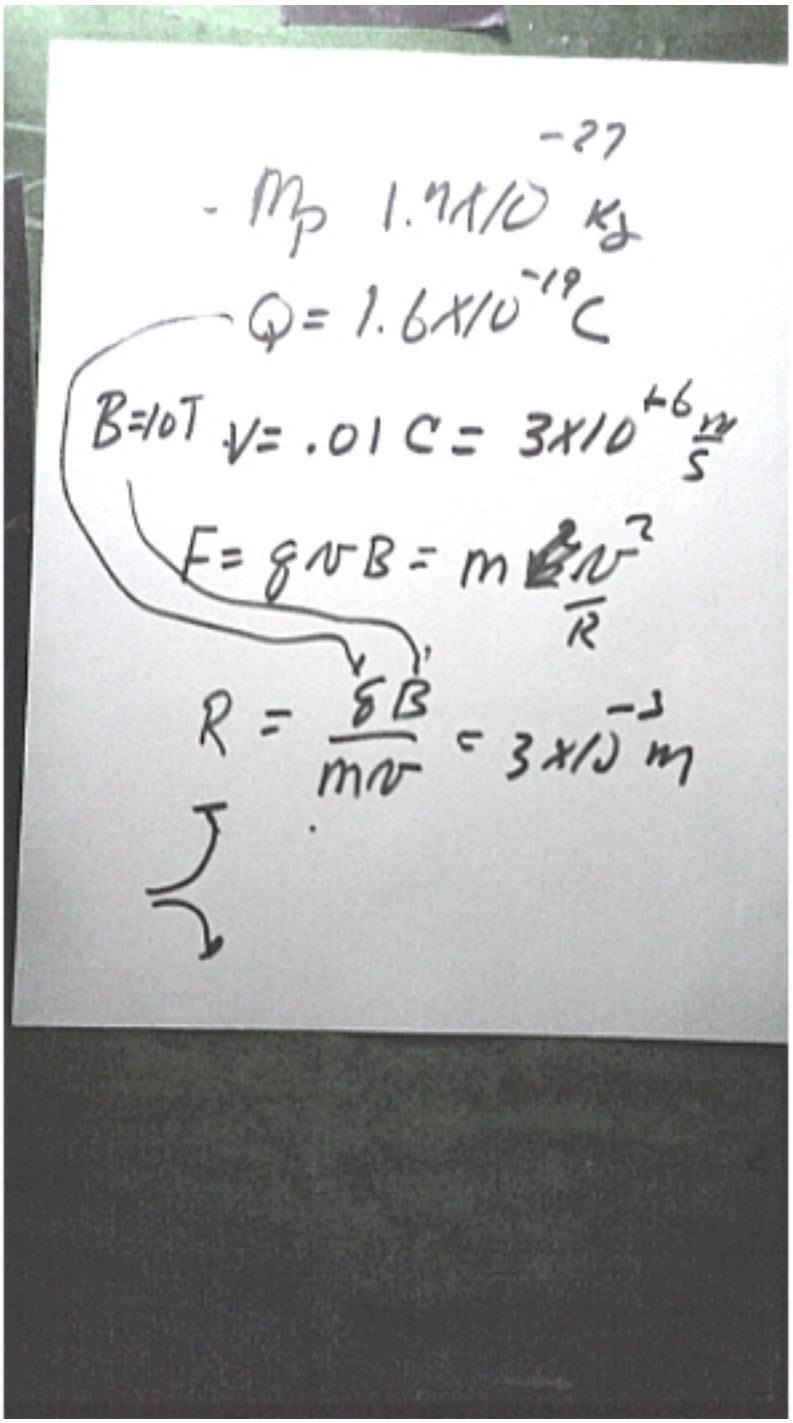
$\bar{F} = q\bar{v} \times \bar{B}$ or $\vec{F} = I\vec{L} \times \vec{B}$

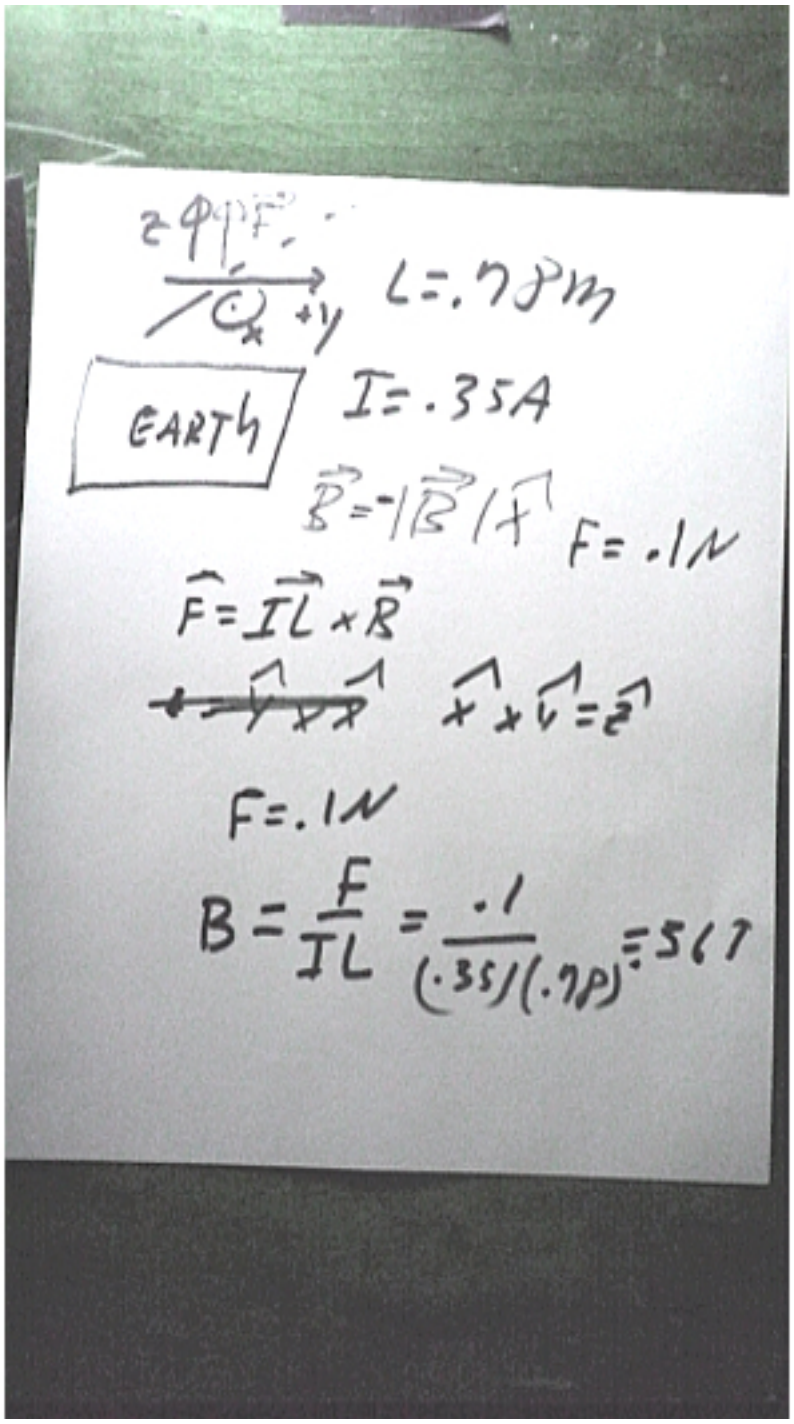
$\odot B$ 1m 1N, 1A

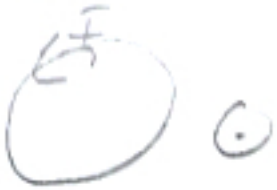
$\boxed{F = ILB}$

$$I = \frac{F}{LB}$$

$$B = \frac{F}{Im} = \frac{1N}{1A\ 1m} = 1T$$


m_p 1.7×10^{-27} kg
$Q = 1.6 \times 10^{-19}$ C
B = 10 T
$v = .01c = 3 \times 10^{6}$ m/s
$F = qvB = m\frac{v^2}{R}$
$R = \frac{qB}{mv} = 3 \times 10^{-3}$ m


EARTH
L=.78m
I=.35A
F=.1N
$\vec{F}=I\vec{L}\times\vec{B}$
$\hat{x}\times\hat{y}=\hat{z}$
F=.1N
$B=\frac{F}{IL}=\frac{.1}{(.35)(.78)}=$

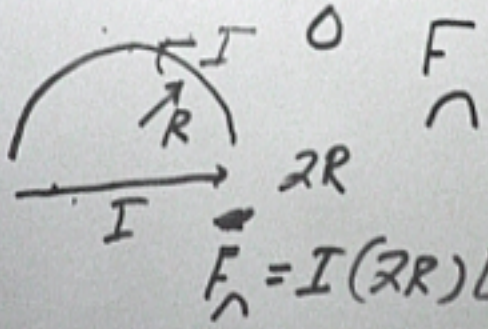


$\vec{F} = 0$

$\vec{F} = \Sigma I \vec{l}_i \times \vec{B}$

$= -\vec{B} I \times \underline{\Sigma \vec{l}_i}$

$\underline{\quad 0 \quad}$



$F_{\cap}$

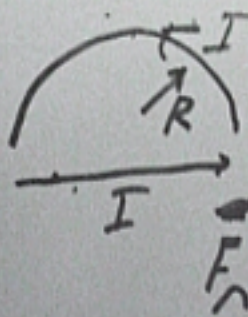
$\vec{F}_{\cap} = I(2R)B$

$\vec{F} = 0$

$\vec{F} = \Sigma I \vec{l}_i \times \vec{B}$

$= -\vec{B} I \times \Sigma \vec{l}_i$

$\vec{0}$



F ∩

$F_{\cap} = I(2R)B$