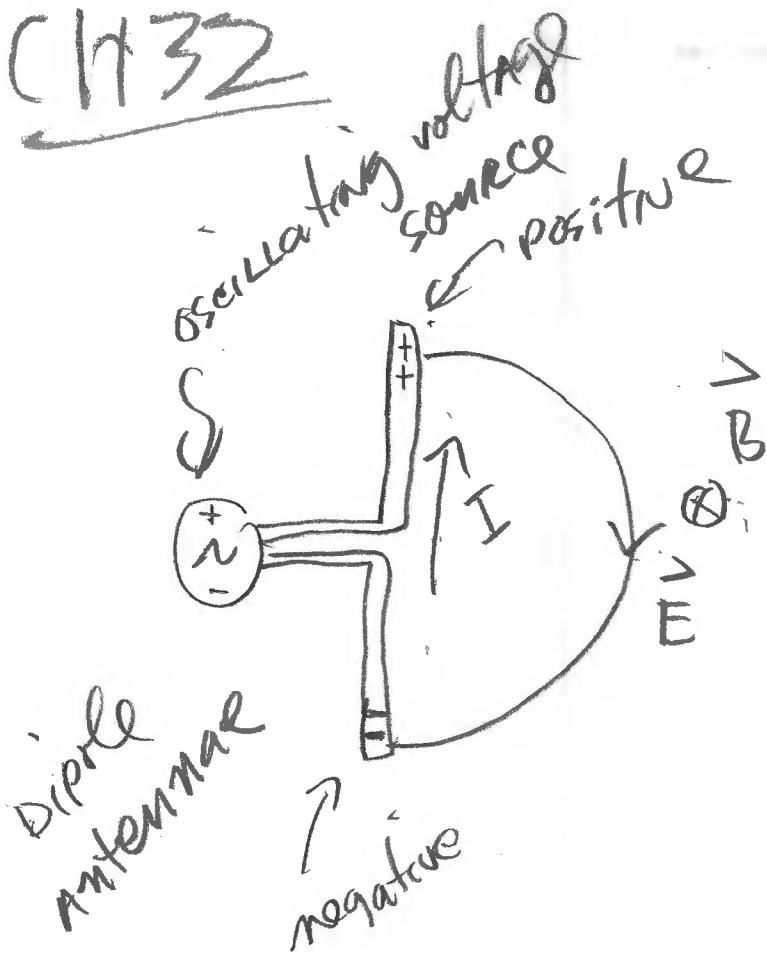
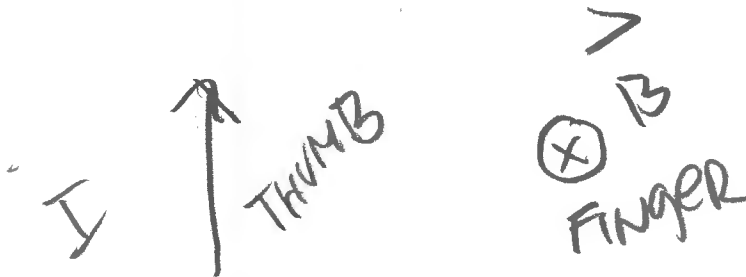


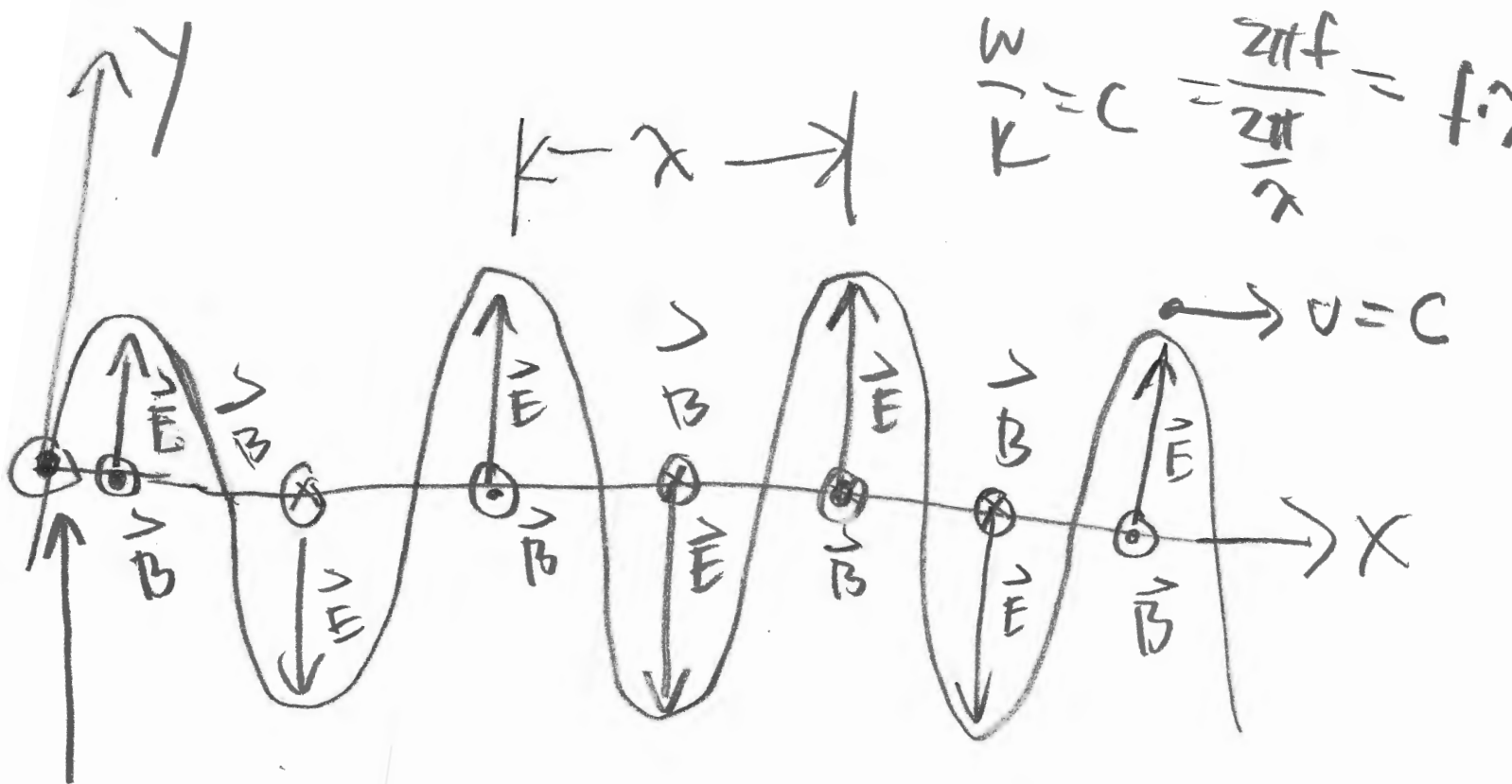
C1732

9-23-13



creates
a plane wave





Z(out)

$$\left\{ \begin{aligned} E_y &= E_m \cos(kx - \omega t) \\ B_z &= B_m \cos(kx - \omega t) \end{aligned} \right.$$

$$\frac{E_m}{B_m} = c$$

$$\frac{\omega}{k} = v = c = 3.00 \times 10^8 \frac{\text{m}}{\text{s}}$$

$$c = f \cdot \lambda$$

Faraday's LAW: $\frac{B}{E} = \frac{1}{c}$

$$\frac{E}{B} = c$$

Ampere's LAW: $c = \frac{1}{\sqrt{\mu_0 \epsilon_0}}$

Faraday's & Ampere's LAW:

$$\frac{\partial^2 E_y}{\partial x^2} = \frac{1}{c^2} \cdot \frac{\partial^2 E_y}{\partial t^2}$$

$$\rightarrow E_y = E_m \cos(kx - \omega t)$$

solution to wave equation