1/13/01 -①

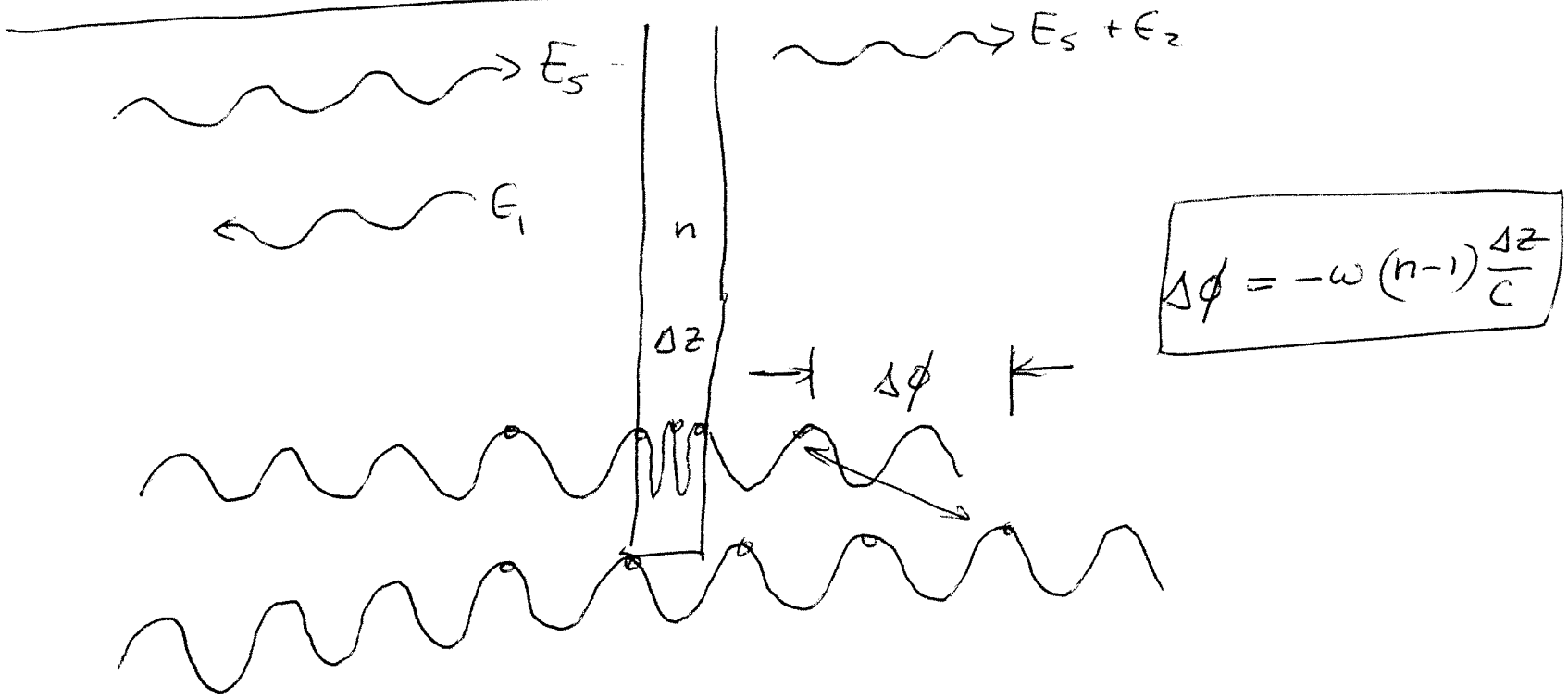
Room for Friday 1/15 Problem Session 4-?

1/22 Makeup for 1/18 (M) 4-6

1/29 Makeup for 2/10 (W) 4-6

} 76-1275

Exam 1/20 10-12 Choice (not including index)



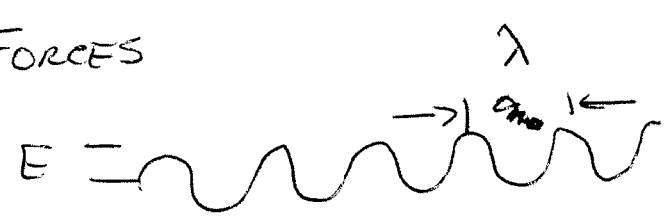
$$\Delta\phi = -\omega(n-1)\frac{\Delta z}{c}$$

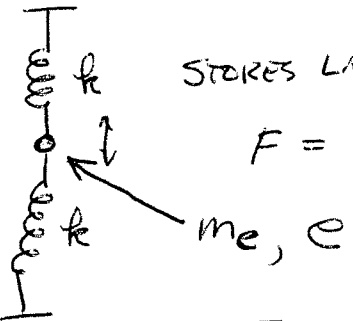
$$E_z = -i\omega (n-1)\frac{\Delta z}{c} E_s e^{+i\omega\left(\frac{\Delta z}{c} - t\right)}$$

AT $z = \Delta z, t$

CONSTANT PHASE

FORCES





STOKES LAW FORCE

$$F = -k(x - x_0)$$

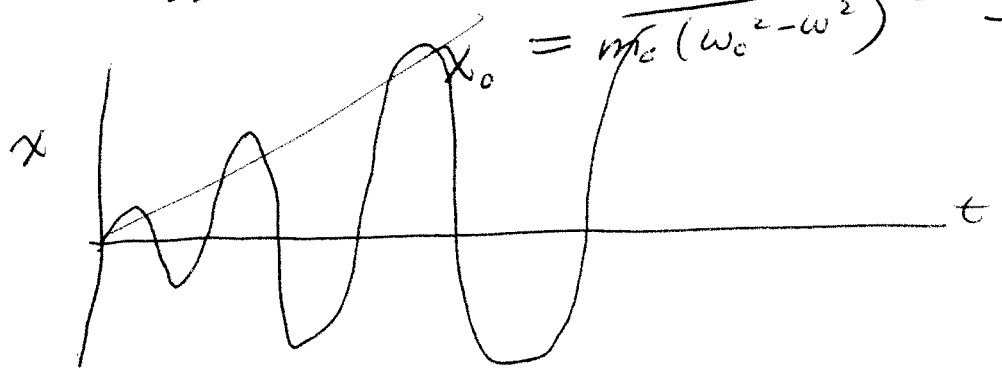
x_0 EQUILIBRIUM POSITION

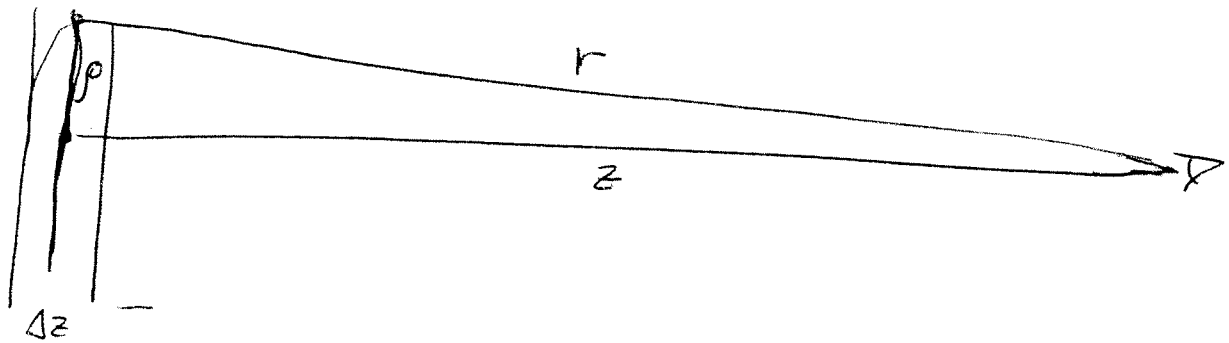
$$\lambda \Rightarrow \omega = 2\pi\nu = 2\pi\frac{c}{\lambda}$$

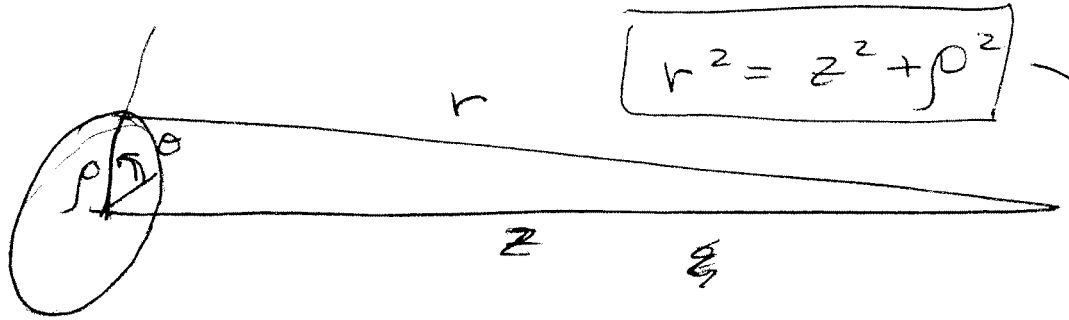
$$\omega_0 = \sqrt{\frac{k}{m_e}}$$

AMPLITUDE OF OSCILLATION ω, ω_0

$$x_0 = \frac{eE}{m_e(\omega_0^2 - \omega^2)} = \frac{\frac{e}{m_e}E_0}{\omega_0^2 - \omega^2}$$







$$r^2 = z^2 + \rho^2$$

$$\eta = \frac{\#\ \text{OF ELECTRONS}}{\text{UNIT AREA}}$$

$$\int_{\rho=0}^{\rho=\infty} \int_{\theta=-\pi}^{\theta=+\pi} \eta\, E_{electron}(\rho)\ \rho\, d\rho\, d\theta = 2\pi\eta \int_{\rho=0}^{\rho=\infty} E(\rho)\, \rho\, d\rho$$

$$2r\, dr = 2\rho\, d\rho \Rightarrow \rho\, d\rho = r\, dr$$

~~$\rho = 0 \Rightarrow r = z$~~

~~$\rho = \infty \Rightarrow r = \infty$~~

$\rho = 0 \Rightarrow r = z$, $\rho = \infty \Rightarrow r = \infty$

$$2\pi\eta \int_{r=z}^{r=\infty} \frac{E}{r} \; r \, dr$$