1/13/61 -①

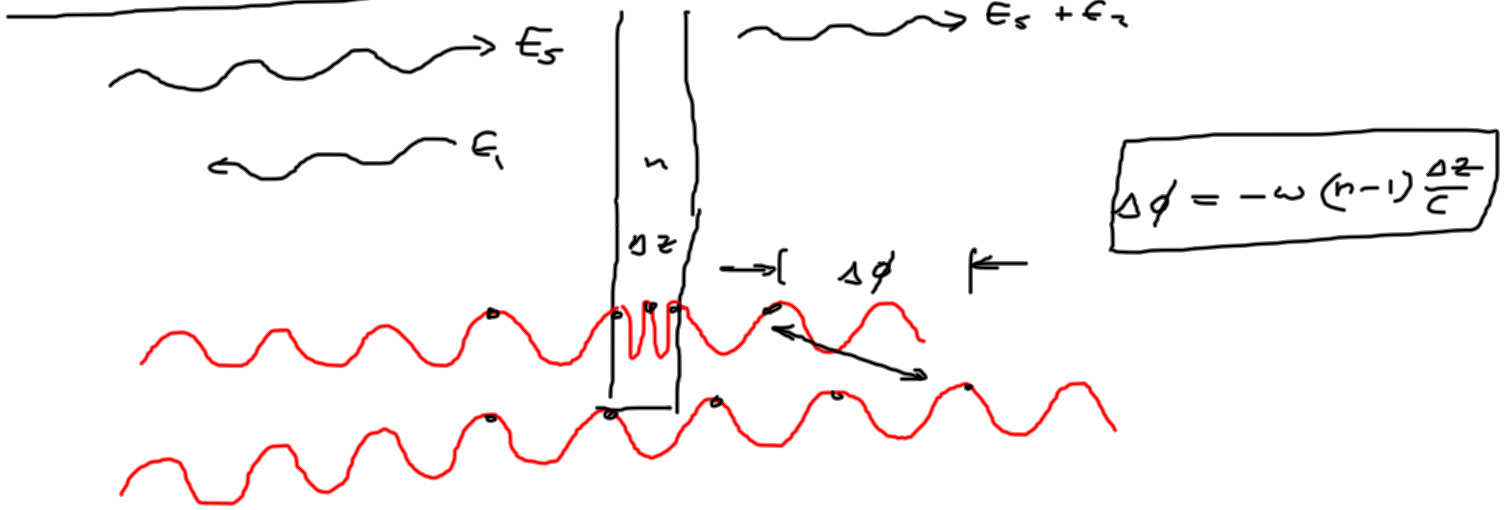
Room for Friday 1/15 Problem session 4-?

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

1/25 Makeup for 1/20 (W) 4-6

} 76-1275

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



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

1/13/01 — (2)

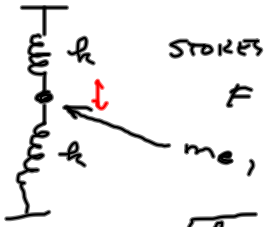
$$E_z = \underbrace{-i\omega (n-1)\frac{\Delta z}{c}}\ E_s\, e^{\underbrace{+i\omega\left(\frac{\Delta z}{c} - t\right)}}$$

AT $z = \Delta z, t$

CONSTANT PHASE

FORCES

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



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

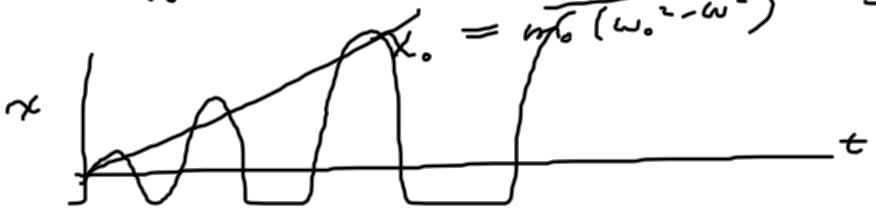
STOKES LAW FORCE

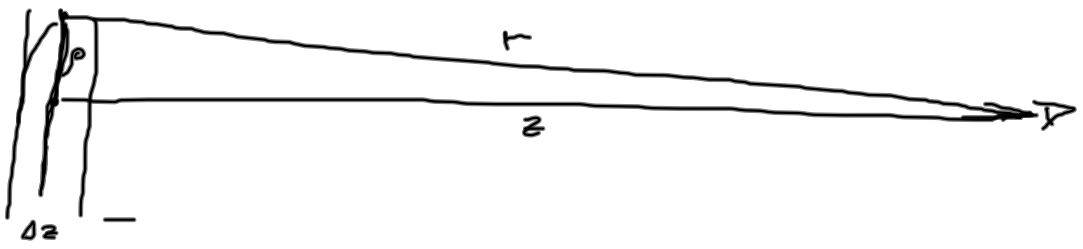
$F = -k(x - x_0)$

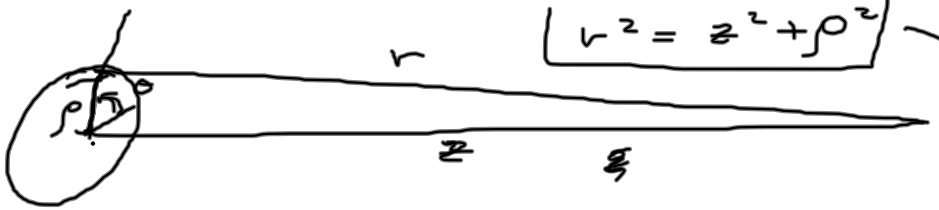
↑ EQUILIBRIUM POSITION

AMPLITUDE OF OSCILLATION ω, ω_0

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







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

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

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

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

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

13/07 – (4)

$$2\pi\eta \int_{r=a}^{r=b} \frac{\epsilon}{r}\, r\, dr$$