

22.)

$$\vec{E}_0 = 100 \vec{j} \frac{\text{V}}{\text{m}} \quad f = 10^7 \text{ Hz} \quad \vec{E}(\vec{r}, t) = ? \quad \vec{H}(\vec{r}, t) = ?$$

$$\lambda = ? \quad k = ? \quad \omega = ? \quad T = ? \quad W_{EM} = ? \quad (\delta = 0)$$

$S_0 = ?$

$$W_{EM} = \epsilon_0 E_0^2 = \mu_0 H_0^2$$

$$\vec{S} = \vec{E} \times \vec{H}$$

$$c = f \lambda$$

$$k = \frac{2\pi}{\lambda}$$

$$\omega = 2\pi f$$

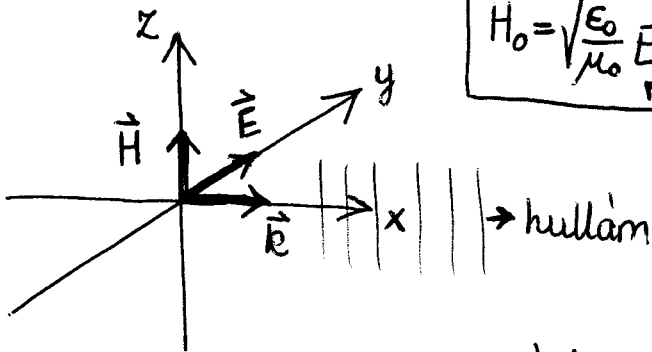
$$c = 3 \cdot 10^8 \frac{\text{m}}{\text{s}}$$

$$f = \frac{1}{T}$$

$$H_0 = \sqrt{\frac{\epsilon_0}{\mu_0}} E_0$$

vakuumbar

$$\vec{j} = \vec{e}_y$$



$$\vec{H}_0 = \sqrt{\frac{\epsilon_0}{\mu_0}} E_0 \vec{e}_z = \dots$$

$$c = f \cdot \lambda \rightarrow \lambda = \dots$$

$$k = \frac{2\pi}{\lambda} = \dots$$

$$\omega = 2\pi f = \dots$$

$$T = \frac{1}{f} = \dots$$

$$W_{EM} = \epsilon_0 E_0^2 = \dots$$

$$S_0 = E_0 H_0 = \dots$$

$$\vec{E} = E_0 \vec{j} \sin(\omega t - kx) = E_0 \vec{e}_y \sin(\omega t - kx) = \dots$$

$$\vec{H} = H_0 \vec{e}_z \sin(\omega t - kx) = \dots$$