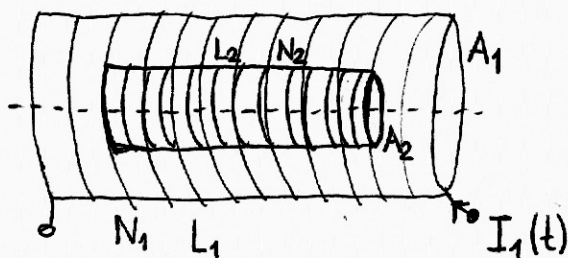


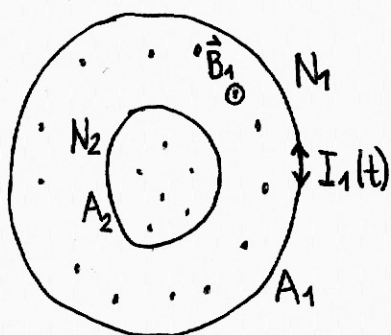
42.)  $L_1 = 15\text{cm}$   $N_1 = 3000$   $A_1 = 5\text{cm}^2$   
 $L_2 = 12\text{cm}$   $N_2 = 1500$   $A_2 = 2\text{cm}^2$   
 $I_{10} = 2\text{A}$   $f = 50\text{Hz}$   $\mathcal{E}_2(t) = ?$   $\mathcal{E}_2$  mikor nulla? Ábra:  $\mathcal{E}_2$  és  $I_1$



$$\omega = 2\pi f \quad \vec{B} = \mu_0 \vec{H} \text{ (levegő)}$$

$$H = \frac{N}{L} I$$

$$\Phi_{\vec{F}} = \int \vec{B} \cdot d\vec{A} \quad \mathcal{E} = -\frac{d\Phi}{dt}$$



$$\Phi_{21} = B_1 A_2 N_2$$

$$I_1(t) = I_{10} \sin(\omega t)$$

$$B_1 = \mu_0 \frac{N_1}{L_1} I_1$$

$$\Phi_{21} = \mu_0 \frac{N_1}{L_1} I_1(t) \cdot A_2 N_2$$

$$\mathcal{E}_2(t) = -\frac{d\Phi_{21}}{dt} = -\mu_0 A_2 \frac{N_1 N_2}{L_1} \frac{dI_1}{dt} = -\underbrace{\mu_0 A_2 \frac{N_1 N_2}{L_1} I_{10} \omega}_{\mathcal{E}_{20}} \cos(\omega t) = -\mathcal{E}_{20} \cos(\omega t)$$

$$\mathcal{E}_{20} = 4,737\text{V}$$

