

19.)

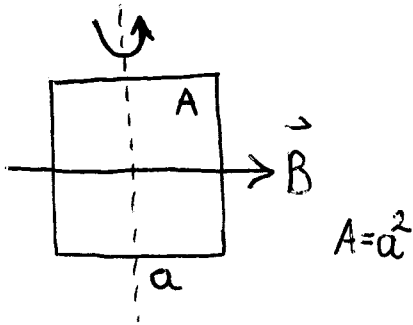
$B = 2 \text{ T}$      $n = 25 \frac{1}{5}$      $R = 0,1 \Omega$      $U(t) = ?$      $I(t) = ?$   
 $a = 4 \text{ cm}$      $U_0 = ?$      $I_0 = ?$

$$\boxed{\mathcal{E} = - \frac{d\Phi}{dt}}$$

$$\boxed{\Phi = \int_A \vec{B} \cdot d\vec{A}}$$

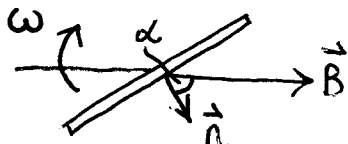
$$\boxed{I = \frac{\mathcal{E}}{R}}$$

$$(U(t) = \mathcal{E}(t))$$



$$\mathcal{E} = - \frac{d\Phi}{dt}$$

$$\Phi = B a^2 \cos \alpha = B a^2 \cos \omega t$$



$$\alpha = \omega t$$

$$\omega = 2\pi n$$

$$\mathcal{E} = - \frac{d(B a^2 \cos \omega t)}{dt} = \underbrace{B a^2 \omega}_{\mathcal{E}_0 = U_0} \sin \omega t$$

$$\mathcal{E} = \mathcal{E}_0 \sin \omega t$$

$$I = \frac{\mathcal{E}}{R} = \underbrace{\frac{B a^2 \omega}{R}}_{I_0} \sin \omega t = I_0 \sin \omega t$$