

7.)  $B = 2 \frac{Vs}{m^2}$   $n = 25 \frac{1}{s}$   $R = 0,1 \Omega$   $U(t) = ?$   $I(t) = ?$

$a = 4cm$

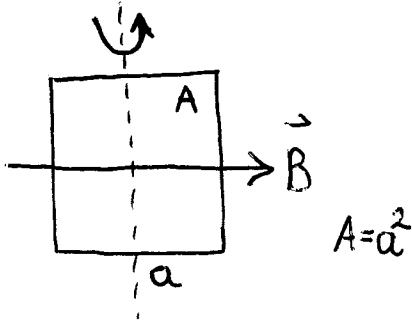
$U_0 = ?$   $I_0 = ?$

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

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

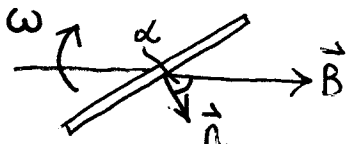
$$\boxed{I = \frac{\mathcal{E}}{R}}$$

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



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

$$\Phi = Ba^2 \cos \alpha = Ba^2 \cos \omega t$$



$\alpha = \omega t$   
 $\omega = 2\pi n$

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

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

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