$\Phi = BA\cos\theta$ flux

$= T \cdot m^2 = \text{Weber (Wb)}$

$\mathcal{E} \Rightarrow$ emf Volts

$\mathcal{E} = N\frac{\Phi}{t}$ $\frac{T \cdot m^2}{s}$

turns

Ex 20.1 p627

$N = 25$ turns

$A = l^2$ square $l = 1.8\,cm = .018\,m$

$A = .018^2 = 3.24 \times 10^{-4}\,m^2$

$R = .35\,\Omega$

B $0 \rightarrow .5T$

t $.8s$

$\mathcal{E} = ?$

$\Phi = BA\cos 0^\circ = .5(3.24 \times 10^{-4}) = 1.62 \times 10^{-4}\,T \cdot m^2$

$\mathcal{E} = \frac{N\Phi}{t} = \frac{25(1.62 \times 10^{-4})}{.8} = .0051\,\frac{T \cdot m^2}{s}$ or Volt

Ohm's Law $V = IR$

$I = \frac{V}{R} = \frac{.0051}{.35} \approx .014\,A$ or $14\,mA$