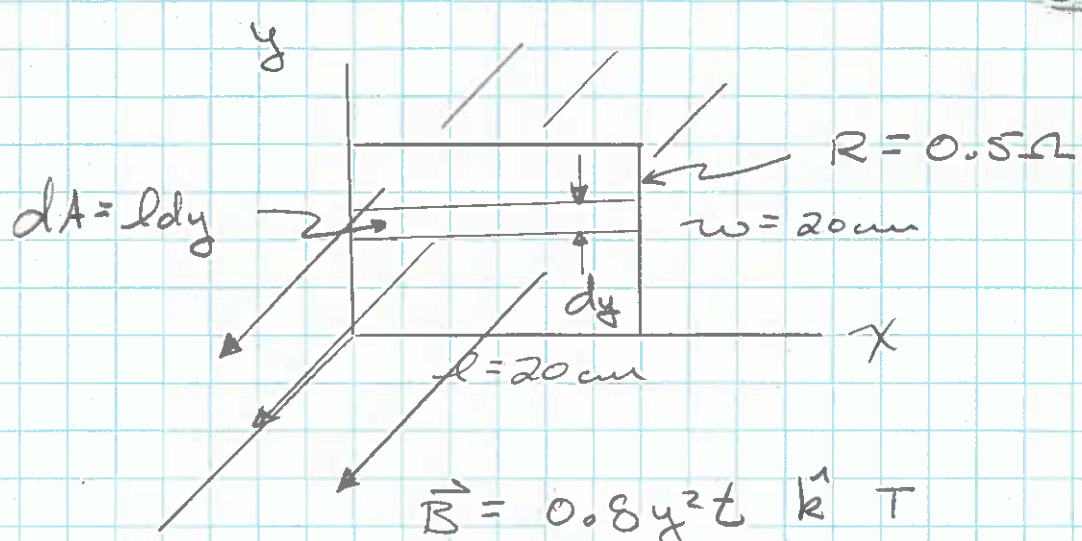

$$\vec{B} = 0.8 y^2 t \, \hat{k} \; T$$
$$= a y^2 t \, \hat{k}$$

Faraday's Law: $\mathcal{E} = \left| \frac{d\Phi_e}{dt} \right|$

$$\Phi_e = \int \vec{B} \cdot d\vec{A} = \int B l \, dy$$
$$= \int_0^w a y^2 t \, l \, dy$$
$$= a t l \int_0^w y^2 dy$$
$$= a t l \frac{y^3}{3} \Big|_0^w$$

So $\Phi_e = \frac{a t l w^3}{3}$

Now: $\mathcal{E} = \left| \frac{d\Phi_M}{dt} \right| = \frac{d}{dt}\left(\frac{a t l w^3}{3} \right) = \frac{a l w^3}{3}$

and, $I = \frac{\mathcal{E}}{R} = \frac{a l w^3}{3R} = \underline{8.533 \times 10^{-4} \; A}$

(constant in time)