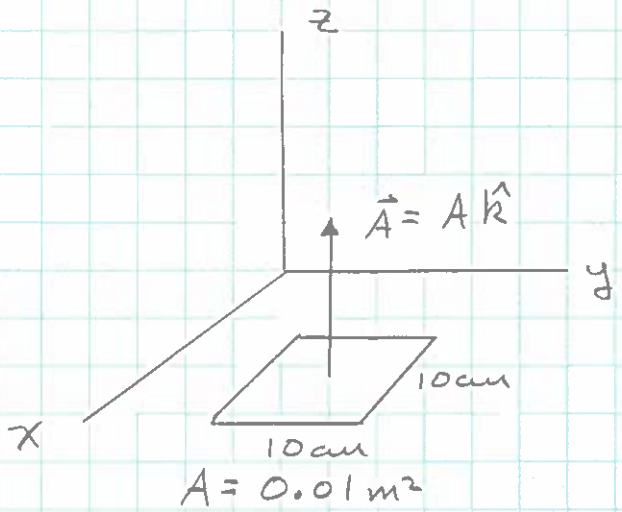


$\vec{B} = 0.3t\hat{i} + 0.5t^2\hat{k}\ T$

find the EMF in the loop at time $t$:

$$\mathcal{E} = \left| \frac{d\Phi_m}{dt} \right|$$

$$\Phi_m = \int \vec{B} \cdot d\vec{A} = \vec{B} \cdot \vec{A} = 0.5t^2 A$$

So,

$$\mathcal{E} = \left| \frac{d}{dt}(0.5t^2 A) \right| = (0.5)2tA = tA$$

∴

a.) for $t = 0.5s \Rightarrow$ $\underline{\mathcal{E} = 0.005V}$

b.) for $t = 1.0s \Rightarrow$ $\underline{\mathcal{E} = 0.01\ V}$