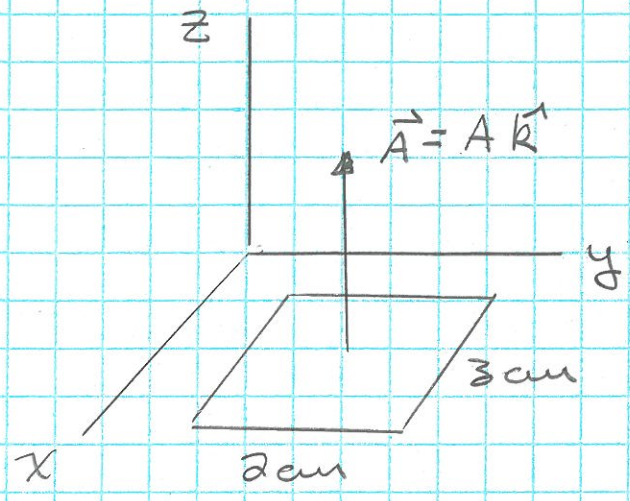

$A = 6 \times 10^{-4}\ m^2$

a.) $\vec{E} = 100\hat{i} + 50\hat{k}$ N/C

Uniform $\vec{E}$ & Planar Surface:

$$\Phi_e = \vec{E} \cdot \vec{A} = E_x A_x + E_y A_y + E_z A_z$$

$$= (100)(0) + (0)(0) + (50)(A)$$

$$= 0.03 \ \frac{Nm^2}{C}$$

b.) $\vec{E} = 100\hat{i} + 50\hat{j}$ N/C

Same case:

$$\Phi_e = \vec{E} \cdot \vec{A} = E_x A_x + E_y A_y + E_z A_z$$

$$= (100)(0) + (50)(0) + (0)(A)$$

$$= 0.0 \ \frac{Nm^2}{C}$$