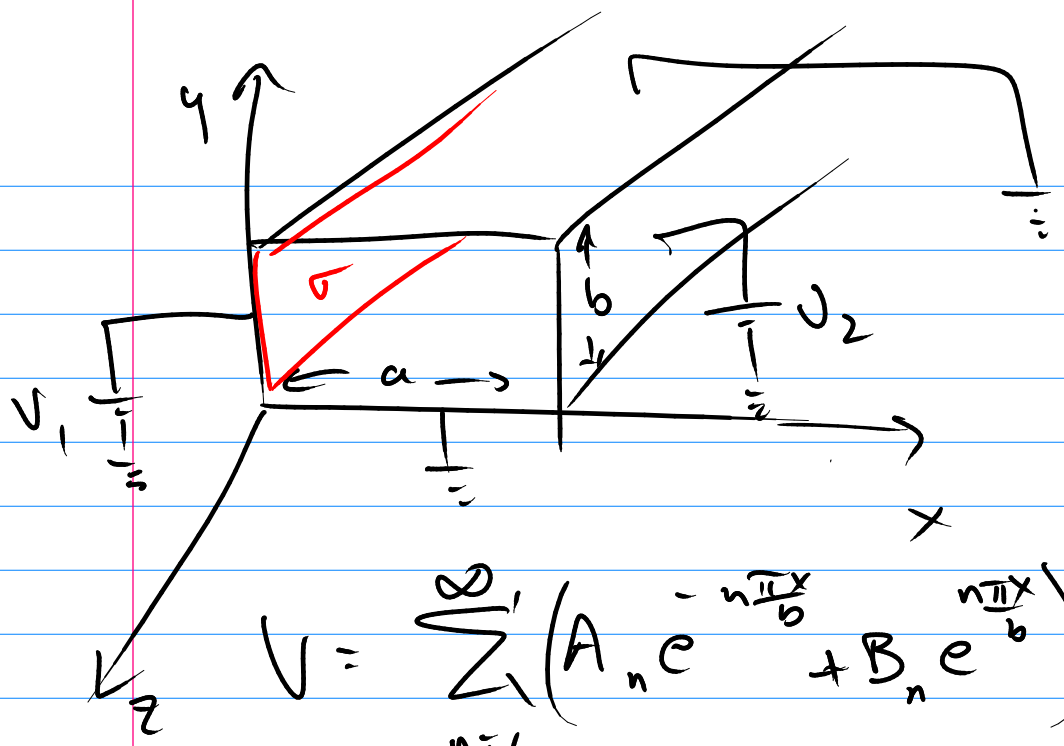



$$V = \sum_{n=1}^{\infty}{}' \left( A_n e^{-\frac{n\pi x}{b}} + B_n e^{\frac{n\pi x}{b}} \right) \sin\frac{n\pi y}{b}$$

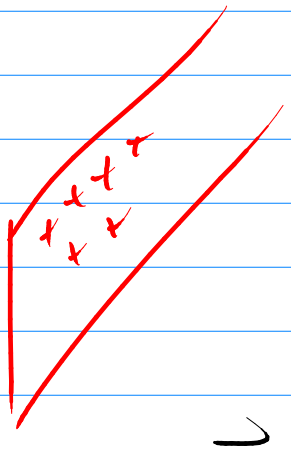
$$\vec{E} = -\vec{\nabla} V = -\hat{x}\frac{\partial V}{\partial x} - \hat{y}\frac{\partial V}{\partial y} - \hat{z}\frac{\partial V}{\partial z}$$

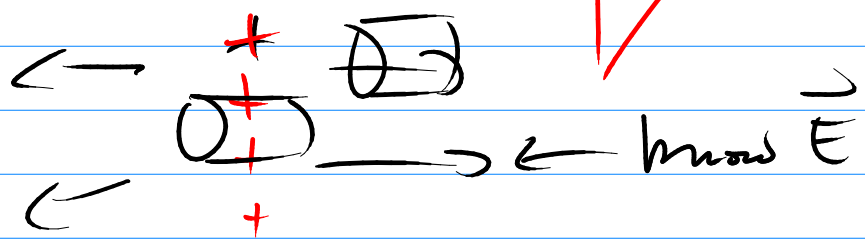
$$E_x = -\frac{\partial V}{\partial x} = -\sum \left( A_n \left(-\frac{n\pi}{b}\right) e^{-\frac{n\pi x}{b}} + B_n \left(\frac{n\pi}{b}\right) e^{\frac{n\pi x}{b}} \right) \otimes \sin\frac{n\pi y}{b}$$

find $\sigma$ at $x = 0$

$\nabla^2 V = -\rho/\epsilon_0$ Gauss's

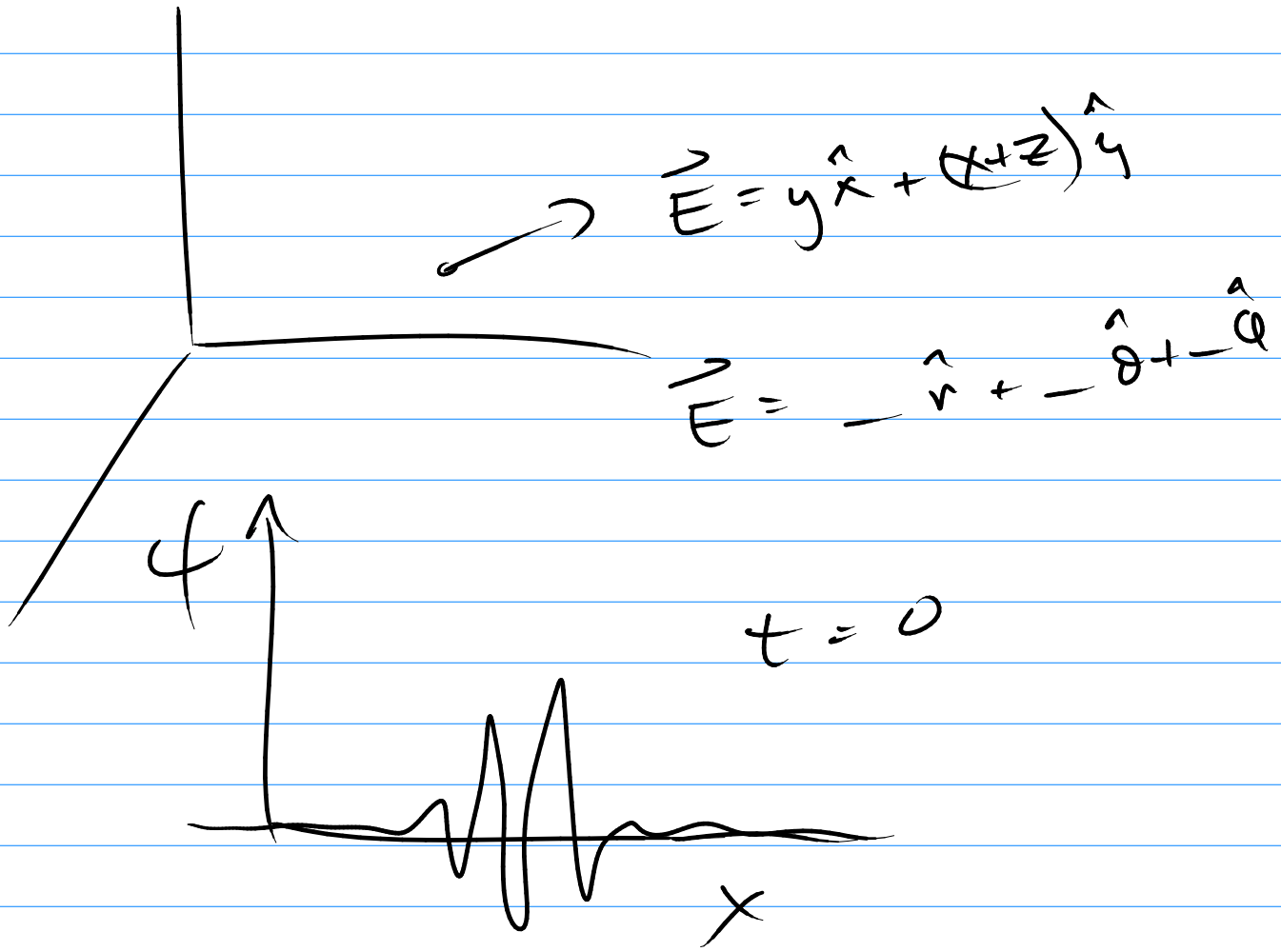
V E





$$E_{\perp A}^{left} - E_{\perp}^{right} = \frac{\sigma}{\epsilon_0}$$

↑ conductor




$$\psi = \sum_{i=1}^{N} A_i \psi_i$$

↑ sep variables soln