Electric Field of Oppositely Charged Infinite Sheets

- Consider two infinite sheets of charge with charge per unit area $\pm\sigma$, respectively.
- The sheets are positioned at $x = 0$ and $x = 2$m, respectively.
- Magnitude of field produced by each sheet: $E = \dfrac{\sigma}{2\epsilon_0}$.
- Electric field at $x < 0$: $E_x = E_x^{(+)} + E_x^{(-)} = -\dfrac{\sigma}{2\epsilon_0} + \dfrac{\sigma}{2\epsilon_0} = 0.$
- Electric field at $0 < x < 2$m: $E_x = E_x^{(+)} + E_x^{(-)} = +\dfrac{\sigma}{2\epsilon_0} + \dfrac{\sigma}{2\epsilon_0} = \dfrac{\sigma}{\epsilon_0}.$
- Electric field at $x > 2$m: $E_x = E_x^{(+)} + E_x^{(-)} = +\dfrac{\sigma}{2\epsilon_0} - \dfrac{\sigma}{2\epsilon_0} = 0.$