Two cells
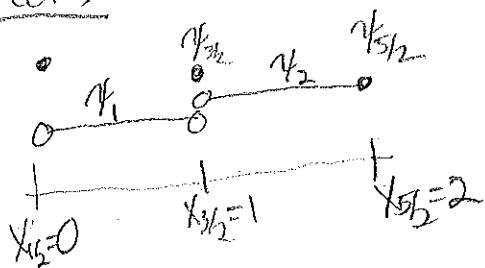

$$\frac{\partial \psi}{\partial x} + \sigma \psi = 0, \quad \psi(x_{1/2}) = 1$$

$$\psi(x) = e^{-\sigma x}$$

$$\frac{\partial \tilde{\epsilon}}{\partial x} + \sigma \tilde{\epsilon} = \tilde{R}$$

$$\tilde{R} = \tilde{R}_{1/2} + \tilde{R}_1 + \tilde{R}_{3/2} + \tilde{R}_2$$

$$\tilde{R}_{1/2} = -\mu \frac{\partial \psi}{\partial x} = -\mu (\psi_1 - 1) \delta(x_{1/2})$$

$$\tilde{R}_1 = -\sigma \psi_1$$

$$\tilde{R}_{3/2} = -\mu(\psi_2 - \psi_1) \delta(x_{3/2})$$

$$\tilde{R}_2 = -\sigma \psi_2$$

Solve for error, where x is $\in [x_{3/2}, x_{5/2}]$

$$\int_0^x d\psi \left(\frac{\partial}{\partial x}\left(\tilde{\epsilon} e^{\sigma x}\right)\right) = \int_0^x \left(\tilde{R} e^{\sigma x}\right) dx$$

$$\tilde{\epsilon} e^{\sigma x} - 0 = \int_0^x \tilde{R} e^{\sigma x} dx = -(\psi_1 - 1) e^{(0)} \Big|_0^1 + \frac{\sigma \psi_1 e^{\sigma x}}{\sigma}\Big|_0^{x_{3/2}} + (\psi_1 - \psi_2) e^{\sigma x_{3/2}}$$

$$- \psi_2 e^{\sigma x} \Big|_{x_{3/2}}^x$$

$$\tilde{\epsilon} e^{\sigma x} = (1 - \psi_1) + \psi_1(1 - e^{\sigma x_{3/2}}) + (\psi_1 - \psi_2) e^{\sigma x_{3/2}} + \psi_2 \left(e^{\sigma x_{3/2}} - e^{\sigma x}\right)$$

$$= (1 - \psi_1 e^{\sigma x_{3/2}}) + \psi_1 e^{\sigma x_{3/2}} - \psi_2 e^{\sigma x_{3/2}} + \psi_2 e^{\sigma x_{3/2}} - \psi_2 e^{\sigma x}$$

$$\boxed{\tilde{\epsilon} = (1)e^{-\sigma x} - \psi_2} \checkmark \qquad \tilde{\psi}_2(x) = \psi_2 - \psi_2 + e^{-\sigma x} = e^{-\sigma x} \checkmark$$