

$$\frac{d^2 h}{dx^2} = \frac{-qb}{b \cdot k}$$

$$\frac{dh}{dx} = \frac{-qb}{b \cdot k} x + C_1$$

$$h = \left(\frac{-qb}{2b \cdot k} \right) x^2 + \left(\frac{h_R - h_L}{L} + \frac{qbL}{2b \cdot k} \right) x + h_L$$

$$q = -\frac{qb}{b} \left(x - \frac{L}{2} \right) + \frac{k}{L} (h_R - h_L)$$

Integrate

$$h = \frac{-qb x^2}{2b \cdot k} + C_1 x + C_2$$

$$h(0) = h_L$$

$$h(L) = h_R$$

$$h(0) = C_2 = h_L$$

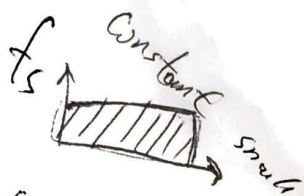
$$h(L) = h_R = \frac{-qb L^2}{2b \cdot k} + C_1 L + h_L$$

~~Integrate~~

$$\left(\frac{h_R - h_L}{L} + \frac{qb L}{2b \cdot k} \right) = C_1$$

$$q = -k \nabla h = -k \frac{dh}{dx} = \frac{qb x}{b} - \frac{k}{L} (h_R - h_L) - \frac{qb L}{2b}$$

$$= \frac{qb}{b} \left(x - \frac{L}{2} \right) - \frac{k}{L} (h_R - h_L)$$



Full