$$q_x = -k_1 A \frac{dt}{dx}$$

$$\int_{x_1}^{x_2} q_x dx = \int_{T_1}^{T_2} -k_1 A dT$$
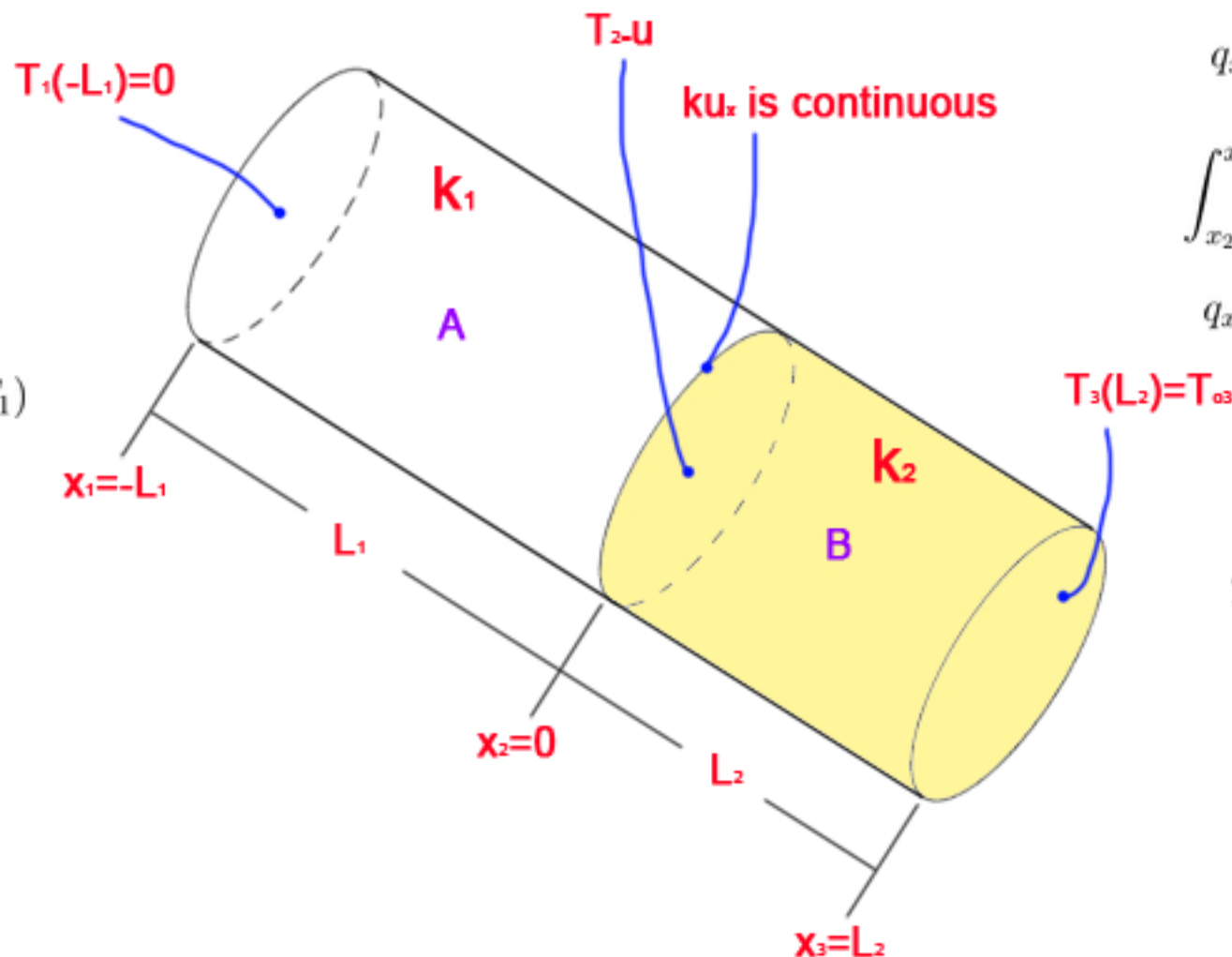
$$q_x(x_2 - x_1) = -kA(T_2 - T_1)$$

$$T_2(x) = T_1 - \frac{q_x(x_2 - x_1)}{kA}$$

$$q_x = \frac{(T_1 - T_2)k_1 A}{x_2 - x_1}$$

$$q_x = \frac{(0 - T_2)k_1 A}{x_2 - (-L_1)} = -\frac{T_2 k_1 A}{x_2 + L_1}$$

$$T_2(x) = T_1 + \frac{T_2 k_1 A(x_2 - x_1)}{(x_2 + L_1)k_1 A} = T_1 + \frac{T_2(x_2 - x_1)}{x_2 + L_1}$$

T₂-u

T₁(-L₁)=0

ku_x is continuous

k₁

A

x₁=-L₁

L₁

x₂=0

L₂

k₂

B

T₃(L₂)=T_{o3}

x₃=L₂

$$q_x = -k_2 A \frac{dT}{dx}$$

$$\int_{x_2}^{x_3} q_x dx = \int_{T_2}^{T_3} -k_2 A dT$$

$$q_x(x_3 - x_2) = -k_2 A(T_3 - T_2)$$

$$T_2(x) = T_3 + \frac{q_x(x_3 - x_2)}{k_2 A}$$

$$q_x = -\frac{k_2 A(T_3 - T_2)}{x_3 - x_2}$$

$$q_x = -\frac{k_2 A(T_{o3} - T_2)}{L_2 - x_2} = \frac{k_2 A(T_2 - T_{o3})}{L_2 - x_2}$$

$$T_2(x) = T_3 + \frac{k_2 A(T_2 - T_{o3})(x_3 - x_2)}{k_2 A(L_2 - x_2)} = T_3 + \frac{(T_2 - T_3)(x_3 - x_2)}{L_2 - x_2}$$