



Case 3: Fin of finite length losing heat from its end by convection:

- Here, heat conducted to the tip of the fin must be equal to the heat convected away from the tip to the ambient i.e.

$$-k \cdot A_c \left(\frac{dT}{dx} \right)_{x=L} = h \cdot A_c \cdot (T_L - T_a)$$

i.e.
$$-k \cdot \left(\frac{dT}{dx} \right)_{x=L} = h \cdot \theta_L$$

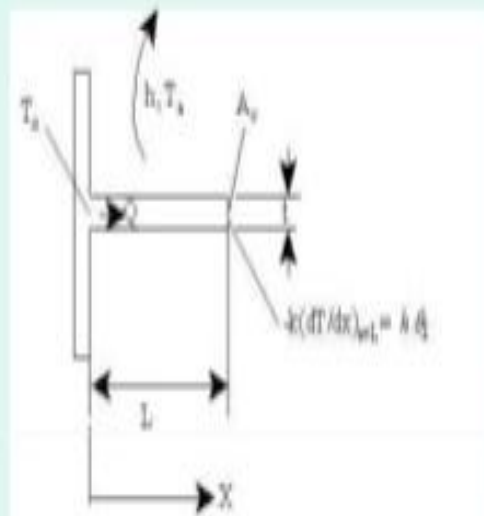


Fig. 6.5(b) Fin of finite length, end losing heat by convection