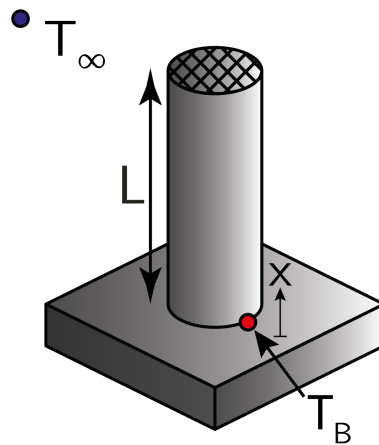


Fins - Boundary Conditions 1

Choose the right boundary condition at the base $x = 0$ for a fin, with an adiabatic head, for solving the fin equation.



Given the fin equation:

$$\frac{\partial^2 \theta}{\partial x^2} - m^2 \theta = 0$$

Where:

$$\theta(x) = T(x) - T_\infty$$

The temperature at the base is known $T(x = 0) = T_B$, which yields in the following boundary condition that can be used for solving the fin equation:

$$\rightarrow \theta(x = 0) = T_B - T_\infty$$