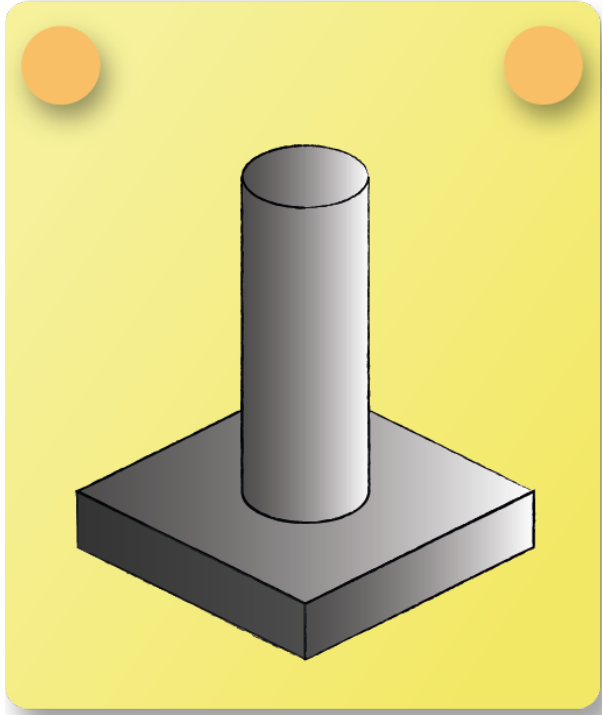


## Lecture Fins Question 4



Which quantities are essential for the derivation of the one-dimensional fin equation using an infinitesimal energy balance?

The steady energy balance for an infinitesimal slice of fin in axial direction is given as:



$$0 = \dot{Q}_{\text{cond}}(x) - \dot{Q}_{\text{cond}}(x + dx) - \dot{Q}_{\text{conv}}(x)$$

Conductive fluxes are expressed using the cross section area, as the convective flux depends on the infinitesimal surface area.