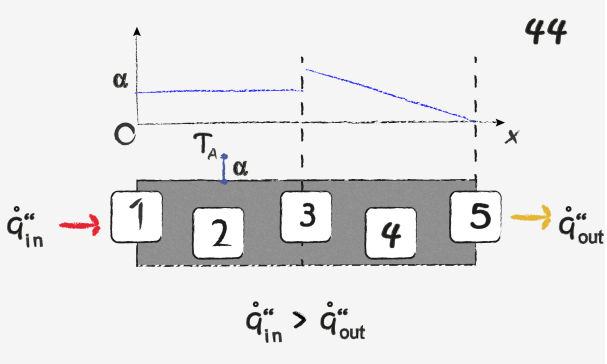
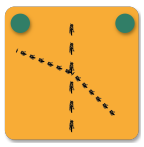
Heat Conduction: Task 44



The image describes a rectangular body with constant heat conduction coefficient from the left to the middle part and then decreasing linearly to the right. The heat flows from left to right.

1  $\dot{q}''_{in}$ is larger than $\dot{q}''_{out}$ such that the heat flows from left to right which means that the temperature decreases from left to right.

2  Due to heat loss through convection, the temperature gradient decreases from left to right.

3  Due to the higher heat transfer coefficient on the right side, the heat loss to the ambience is increased suddenly, which results in a kink in the temperature profile.

4  Due to heat loss through convection, the temperature gradient decreases from left to right.

5  The gradient at the end of the material is negative due to the imposed heat flux.