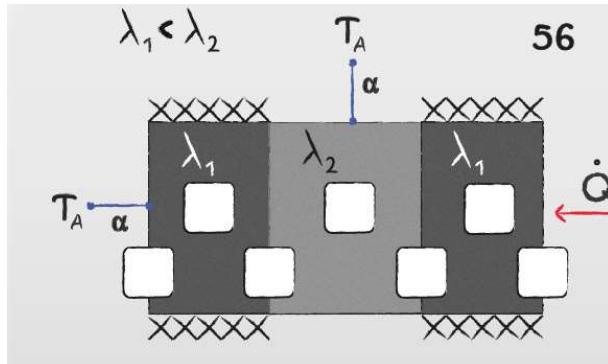
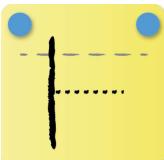




Axial Heat Flux: Task 56



The image describes a rectangular body consisting of three sections. Walls are convective in section 2 and the left boundary of section 1. There is an imposed heat flux at the right boundary, remaining surfaces are adiabatic.

- 1  Due to convective heat loss, the heat flux is negative at the left boundary.
- 2  Specific heat flux remains constant, since cross section area does not change in this section, just as the overall heat flux stays constant.
- 3  A kink in specific heat flux is caused by convective heat transfer, that is present right from the point of transition.
- 4  As temperature delta is increasing towards the right, the specific heat flux and it's gradient is so too.
- 5  The transition is characterized by another kink, caused by the end of the convective heat transfer.
- 6  Specific heat flux is constant for the same reasons mentioned in the first section.
- 7  The negative sign is due to the given orientation of the imposed heat flux towards the left.